

**IOWA STATE UNIVERSITY
OF SCIENCE & TECHNOLOGY**

**FY2007 Board of Regents Annual Economic
Development and Technology Transfer Report**

**PRESENTED BY JOHN BRIGHTON, VICE PRESIDENT FOR
RESEARCH & ECONOMIC DEVELOPMENT**

October 4, 2007

FY 2007 Board of Regents Annual Economic Development and Technology Transfer Report

1. Please briefly describe the relationship of your institution's economic development activities to the enhancement of economic growth in the state. The description should cover, but not necessarily be limited to the following:

- a. The relationship between institutional activities and creation of jobs and wealth in Iowa
- b. Institutional activities and services which indirectly promote economic development, such as training provided to staff of local economic development agencies

1.A Enhancement of Economic Growth through Job Creation and Retention, Investments, Sales, and Cost Savings

Iowa State University engages in several activities that have direct impact on both the creation as well as the retention of jobs in Iowa. The ISU Research Park is a technology community that encourages commercialization of university research. Likewise, the Innovations Development Facility, part of the Plant Sciences Institute, incubates new companies. In addition, the IPRT (Institute for Physical Research and Technology) Company Assistance Program, ISU Extension's Center for Industrial Research and Service (CIRAS), the Small Business Development Center (SBDC) and the ISU Pappajohn Center for Entrepreneurship interact with companies across Iowa to solve production and management problems. These interactions lead to the resolution of problems related to product development and business management. As a consequence of the improved production resulting from these interactions, businesses have been able to retain and often expand their work force rather than lay off workers due to the expected down turn in business if no solution to the problems had been found. Some examples of the impact that ISU units have had this past year are as follows:

- The ISU Research Park has been very successful in initiating as well as nurturing numerous new businesses. Sixteen new companies and affiliates have joined the Park in FY07, bringing the historical total to 167 companies. Currently, there are 52 companies located in the park, employing over 635 people.

A study by an ISU economist for the ISU Research Park suggests there is a substantial and diverse set of economic activity located at the ISU Research Park whose effects link strongly with the Iowa economy. The study, conducted in 2002/2003 which focused on current tenants at the Park, indicated that tenants contributed both directly and indirectly to \$134.2 million in total industrial output of firms in the state. Wages paid by Research Park companies exceeded \$36.7 million annually, with an additional \$16.9 million in wages generated by businesses providing goods and services to Research Park companies and its employees. At the time of the study, the Research Park tenant companies employed over 900 people. Another 639 jobs were generated by businesses providing goods and services to the companies and its employees. The average wage per worker at the Research Park, including students, exceeded \$40,000. The economic activity generated by Research Park tenants generated an estimated \$3.7 million in state tax income and another \$1.4 million in state charges and miscellaneous revenues annually.

- Two new faculty start-up companies have located in the Innovations Development Facility, which is a recently established on-campus business incubator in the Roy J. Carver Co-Laboratory, under direction of the Plant Sciences Institute. A total of eleven companies have signed lease agreements for business incubator space since the facility opened in September 2003.
- A five-year summary of project evaluation data was analyzed in April 2007 and clearly shows that Iowa companies with technical problems and research and development needs continue to find important technical help through the services of IPRT Company Assistance. Companies report positive impacts affecting their companies' sales, investments, and operating costs. The estimated annual average impact over the period is \$17.3M per year, and it is estimated that 34 jobs on average are created or retained each year. The average satisfaction rating given by clients during this four year period is 4.4 (1-5 scale), and the average survey return rate is 55%.
- Extension's CIRAS (Center for Industrial Research and Service) staff provided educational information to 11,000 individuals in FY07. In-depth assistance was provided to 577 distinct Iowa companies by CIRAS and CIRAS partners. These companies reported \$122 million in new investments, \$7 million in costs saved or avoided, and \$62 million in sales gained or retained. Company executives stated that 1,658 jobs were added or retained as a result of the technical assistance and education they received.
- Extension's CIRAS is partnering with the USDA Office of Energy Policy and New Uses to stimulate economic growth in the biobased products industry. Staff work with manufacturers, industry associations and federal agencies to identify, designate and promote biobased product categories that will be afforded "preferred procurement" status within federal purchasing sectors. Nearly 1,900 U.S. manufacturers have been identified that produce over 10,000 biobased products. Iowa has over 100 companies that produce over 300 different biobased products.
- In a report published by James J. Chrisman, Ph.D. in Management and Information Systems at Mississippi State University, data was collected from survey respondents for *Economic Impact of Small Business Development Centers (SBDC's)*. In that report, based on several years of data, it was shown that for every \$1.00 in SBDC funding in FY04, the amount of tax dollars returned to the State of Iowa and the federal government by SBDC clients was \$4.41. There were also 351 jobs retained, 1,001 jobs created, \$6.4 million in sales retained and \$125.3 million in sales increased.
- New technologies originating at ISU and licensed to Iowa companies have resulted in \$83 million in sales by those companies in calendar year 2006. Total sales of ISURF-licensed technologies were \$471 million, not including germplasm.
- The Office of Intellectual Property and Technology Transfer began supporting SBIR (Small Business Innovation Research) and STTR (Small Business Technology Transfer) outreach efforts in FY06. Since then, SBIR and STTR

funding in Iowa has rebounded following a decrease in FY05 after federal support for an earlier assistance program at ISU ended. An emphasis placed on outreach and training activities, including a monthly newsletter, proposal writing workshops and providing proposal preparation support has led to an increasing number of companies receiving funding. Nineteen Iowa companies were assisted in the preparation of 23 SBIR or STTR proposals during FY07 including eight Iowa State faculty or staff related start-up companies. In FY07 fifteen Iowa companies won 21 new SBIR and STTR awards worth nearly \$4.8 million. The Departments of Agriculture and Defense, as well as the National Institutes of Health and the National Science Foundation, are funding this year's Iowa SBIR/STTR award winners. The funded projects reflect Iowa's strengths in biotechnology, information systems, materials development and agriculture. Over \$3 million in support was awarded from NIH for diverse projects that range from the development of an advanced medication dispenser to software to facilitate genomic analyses to creation of novel nanotechnology tools for life science research.

- Over 650 public works professionals attended Engineering Continuing Education events in FY07. Geotechnical engineers, geologists, safety personnel, maintenance managers, plant engineers, utilities supervisors, urban planners, and storm-water managers attended conferences and meetings across Iowa. The conferences provided CEUs from Iowa State University on critical infrastructure topics including Electric Utility Operation and Management, Transportation Planning, and Environmental & Water Resources. Attendees were also able to obtain professional development hours toward retention of their Iowa Engineering Licenses.

1.B Training Opportunities for Staff of Local Economic Development Agencies

- Many units on campus provide training opportunities for staff of economic development groups across the State. Some of these are done through visits to campus and some are done by ISU units going out to the agency or respective community. For example, the Office of the Vice President for Research and Economic Development has sponsored an Economic Development Open House for the past five years, in which many economic development groups across the State have participated in a conference, including tours of campus facilities.
- Extension's CIRAS and the Department of Economics at Iowa State combined resources with the Economic Development Administration to conduct regional studies of economically distressed regions in Iowa. Economic developers from Adams, Cass, Fremont, Harrison, Mills, Montgomery, Page, Pottawattamie, Shelby, and Taylor counties participated in the most recent research. The study identified challenges for the region, such as out-migration and an older, less-educated workforce, as well as specialization in numerous areas, including agricultural production, construction, and transportation.

2. Please provide the following information for FY 2007: (If your institution utilizes additional metrics specific to your institution's specialized areas of research or service, please include them here)

Note: Unless noted, the data provided below is FY07 data. In some categories, the AUTM (Association of University Technology Managers) ranking is shown. AUTM is a national association that conducts annual surveys. Their most recent data published was based on FY05 numbers and included 158 U.S. university participants. See Attachment A for three years of data.

- a. Number of disclosures of intellectual property 114 (AUTM Ranking—tied at 21st)
- b. Number of patent applications filed 41 (AUTM Ranking—47th)
- c. Number of patents awarded 26 (AUTM Ranking—53rd)
- d. Number of license and option agreements executed on institutional intellectual property, in total and in Iowa 113 total, 62 in Iowa (AUTM Ranking, in total—2nd)
- e. Number of license and option agreements yielding income 268
- f. Revenue to Iowa companies as a result of licensed technology \$83 million
- g. Number of startup companies formed, in total and in Iowa (through licensing activities) 2 total, 2 in Iowa (AUTM Ranking—tied at 22nd)
- h. Number of companies in research parks and incubators 47 private and 14 university-related
- i. Number of new companies in research parks and incubators 10 private and 6 university-related
- j. Number of employees in companies in research parks and incubators 390 private and 246 university-related
- k. Royalties and license fee income \$8.1 million (AUTM Ranking—46th)
- l. Total sponsored funding \$272 million of which \$167 million is for research
- m. Corporate sponsored funding for research and economic development, in total and in Iowa \$14.2 million total, \$8.1 million in Iowa
- n. Iowa special appropriations for economic development in the following categories:
 - i. Annual state appropriations for ongoing programs (such as research parks, SBDC, IPRT, IDM, Metal Casting Center) \$2.5 million—includes \$650,000 SBDC, \$148,000 ISU Research Park & \$1.7 million IPRT
 - ii. Grow Iowa Values Fund appropriations \$1.925 million
 - iii. Battelle appropriations No new funding in FY07
- o. Research expenditures (including state appropriations and external funding) \$222 million—Note that this is a FY06 number, most recent number available
- p. Licenses and options executed per \$10 million research expenditures 9 (AUTM Ranking—1st)—Note that this is a FY05 figure, most recent number available
- q. Sales of licensed products by Iowa-based companies \$82.7 million--Note that this is a FY06 figure, most recent number available.
- r. Number of employees for current Research Park tenants and incubator, as well as former tenants that are still in existence in basic form world-wide 2,266
- s. Number of interactions ISU had in FY07 with communities and businesses across the State of Iowa (not including interactions with the Small Business Development Center) 4,484 (see last two paragraphs in section 3.C for more detail)—the number the previous year was about 3,200

3. Please describe the ways in which your institution is engaged in the following activities (For example, what is the nature of the outreach and service activities? Which units provide it? What kinds of people and organizations benefit?)
- a. Direct and hands-on technical assistance to businesses and entrepreneurs
 - b. Direct economic development assistance to Iowa communities
 - c. Economic development services provided by research parks, incubators or similar service units

3.A&B ISU System for Innovation

Iowa State University is charged with advancing economic development and technology transfer activities that promote growth and benefit all citizens. While creation of knowledge remains the basic responsibility of a research university, the way we share knowledge determines our success. ISU shares knowledge and expertise with students (learning and teaching), communities (engagement), and business and industry (technology transfer and economic development). ISU ranks as one of the most successful universities nationwide in several categories of technology transfer and economic development. The activities of the colleges, institutes and centers are coordinated through the Economic Development Council that advises the Vice President for Research and Economic Development. The Vice President and this Council continuously communicate with economic development entities within the State such as the Iowa Department of Economic Development, the Iowa Business Council, the Greater Des Moines Partnership and other local and regional agencies.

The Iowa State University "System for Innovation" was developed to focus on the transfer of university technologies into commercial applications in start-up or existing companies. Functions of the ISU System for Innovation include:

- **Business Development & Assistance and Entrepreneurial Activities:** Efforts related to start-up companies, including business assistance services & SBIR/STTR applications.
- **Technical Assistance & Technology Development:** Solving technical problems, assisting in product development and process improvement projects for existing businesses. This includes the current efforts of no-cost technical assistance and cost-sharing projects.
- **Industry Relations:** Facilitation of a multitude of interactions between ISU and its industry partners, including the management of research relationships and interactions with economic development groups, legislative groups, and other third parties.
- **Community Development:** To disseminate and develop programming, facilitating community organizations, fostering community planning, and coordinating with community and regional economic development networks and organizations.
- **Technology Transfer and Licensing:** The transfer of patented intellectual property to business and industry through license agreements.
- **Physical Space:** Physical space for business incubation is available in the ISU Research Park, Plant Sciences Institute, and Center for Crops Utilization Research.

- **Research and Instrumentation Facilities:** Iowa State University maintains more than 20 central research facilities that also serve communities and businesses on a fee-for-service basis.

3.C ISU's Key Units engaged in Economic Development

Iowa State University, as part of the higher education system in the State, is charged with advancing technology transfer and economic development activities that promote growth and benefit all citizens. The University evolves these goals by contributing to workforce development, creating intellectual property, advancing ideas to the stage of market readiness, supporting creation of new companies, offering assistance to existing companies, and attracting new companies to the State. The University's economic development/technology transfer support system includes the following units that are coordinated through the Economic Development Council:

- **Institute for Physical Research and Technology (IPRT):** Through IPRT's Company Assistance Program, Iowa companies can leverage the expertise of the IPRT research centers and other ISU capabilities in order to solve technical problems, create new products and processes, and increase productivity and quality. IPRT Company Assistance provides help through both short-term, no-cost technical assistance, and its R&D cost-sharing program. IPRT assists early-stage technology commercialization and actively collaborates with Iowa companies on technology transfer projects. Materials and process problems can be addressed, and IPRT experts can also assist Iowa companies with inspection and measurement challenges. IPRT plays an integral role in the process of technology transfer targeted at new business creation.
- **Pappajohn Center for Entrepreneurship and the Small Business Development Center (SBDC):** These units work with researchers to define the technologists' role in the company, evaluate markets, assist in the creation of a business plan and help the company develop connections with a network of business resources including consultants, accountants, attorneys, prospective employees and investors. In a typical year, the Pappajohn Center, working with IPRT, the Plant Sciences Institute, ISURF/OIPTT and other research centers, identifies approximately 25 prospective new technologies. These technologies can take six to 26 months to develop sufficiently to justify the formation of businesses. During this time the researcher receives assistance in moving the technology from the researcher's bench to the marketplace. The Pappajohn Center helps the researcher develop the model for the business and establish the network of resources necessary to implement the plan. These resources can include business assistance, students or capital. The Pappajohn Center/SBDC also continues to provide a referral network and facilitates the recruitment of students including access to internships.
- **Iowa State Innovation System (ISIS):** Near the time a venture is launched, facilities become an issue. ISIS, ISU's technology incubator, provides an ideal first home for companies. ISIS offers connections to the University, affordable space with reception services, office equipment (copiers, fax machines, and computers), conference rooms, and other amenities at a very reasonable rate. The Pappajohn Center, described above, provides mentoring to the companies

as well as the opportunity for companies to utilize students as interns and researchers. ISIS will generally attract five new companies each year. Companies typically spend one to three years in the Incubator moving from product development to product sales. Once sales are established, companies grow out of the Incubator. Some companies remain within the Research Park and continue to receive development assistance, while others move on to commercial space elsewhere but can still receive business development services from the ISU Pappajohn Center and ISU SBDC. As companies mature, the University provides opportunities for collaboration between researchers at the University and in the companies. Students provide cost-effective labor and are potential employees. The Research Park provides expansion space, often financing the space and improvements.

- Iowa State University Research Park: The Iowa State University Research Park is a 230-acre development with nearly 325,000 square feet of building space and is located south of the Iowa State University campus. The ISU Research Park is more than just land and buildings; it is a technology community that encourages commercialization of University research.
- Extension's Center for Industrial Research and Service (CIRAS): CIRAS provides education, research, and technical assistance to Iowa industry through partnerships with Iowa's universities and community colleges, government agencies, and professional associations. Account managers throughout the state meet with clients to assess needs and provide links to resources that companies can use to increase their competitiveness. Solutions are offered through a combination of direct assistance from center staff, university faculty, partner organizations, and outside consultants. CIRAS staff have expertise in biorenewables, engineering, management practices, government procurement, productivity, and quality systems. The center is supported in part by the NIST/DoC Manufacturing Extension Partnership, the DoD Procurement Technical Assistance Program, the EDA University Center Program, and USDA BioPreferred.
- ISU Research Foundation (ISURF) and the Office of Intellectual Property and Technology Transfer (OIPTT): ISURF owns and ISURF and OIPTT jointly manage, market and license the intellectual property for Iowa State University. ISURF/OIPTT works with faculty members in regard to the reporting and protection of innovations, including patenting inventions. It markets the innovations to find commercial partners interested in licensing. It also funds projects within the University that have potential for broadening the intellectual property protection or providing value for its commercial potential. ISURF also provides assistance to Iowa companies, including ISU faculty start-ups with SBIR and STTR applications.
- Innovations Development Facility (IDF): This is a business incubator operated by the Plant Sciences Institute to promote the commercialization of plant biotechnology. IDF encourages ISU faculty, staff, and students to commercialize their research in the plant sciences and promotes the development of start-up companies among aspiring entrepreneurs. IDF is housed in the Roy J. Carver Co-Laboratory and consists of six well-equipped laboratory modules. The facility offers an environment to transition research from a university to a business

setting. The IDF facility is a productive research location where scientists from academe and industry can work together to advance the mission of the Plant Sciences Institute and to promote economic development in Iowa.

- Extension's Community and Economic Development Program: They provide assistance in land use and community planning, community economic analysis, nonprofit management, community design, local government management and leadership development. Major partners in the provision of these services and educational programs have included the Iowa Department of Economic Development, the University of Iowa Nonprofit Resource Center, the Iowa Department of Transportation, the U.S. Department of Housing and Urban Development, the Office of the Iowa Secretary of State, Hometown Perry, Iowa, and the U. S. Department of Agriculture.
- ISU Extension to Families: They provide leadership for Iowa families and communities in meeting workforce development needs associated with dependent adult and child care, food safety, financial management, nutrition and health issues. They also serve as the lead delivery unit within Extension for the Horizons project in Iowa, working in 20 rural Iowa communities to help communities take charge and build stronger leaders to address poverty, economic decline and the exodus of young adults. This program is funded by the Northwest Area Foundation.
- ISU Extension to Agriculture and Natural Resources (ANR): They provide educational leadership to integrate Iowa's rich natural resources, productive people, and viable communities with its strong agricultural industry to grow the economic base of Iowa agriculture. ANR Extension plans and delivers extension education activities through seven teams of faculty, field specialists and staff with expertise in crop production and protection, farm business management, horticulture, beef production management, pork production management, dairy production management and natural resources and stewardship. For example, the Dairy Production Management Team has partnered with external groups to establish the Iowa Dairy Coalition. During the past three years, through the leadership of the Coalition and Extension, Iowa dairies have increased their contribution to the Iowa economy by more than \$180 million.
- The Office of the Vice President for Research and Economic Development (OVPR/ED) works closely with all of the above units, including the Office of the Vice President for Extension and Outreach, in promoting the University's mission related to technology transfer and economic development.
 - The Economic Development Council (chaired by the VPR/ED) coordinates ISU technology transfer and economic development activities. Members meet monthly to discuss problems, update each other on activities, assess the state and national environment for technology transfer, and propose policy and procedures to encourage technology transfer and economic development activities at ISU. This council, formed in 1993, is comprised of representatives from all units on campus that have a primary role in economic development and technology transfer as well as representatives from each of the seven colleges.

- An Economic Development Team within the OVPR/ED meets regularly to coordinate activities in this area. Members of this team include the VPR/ED, the Director of Industry and Government Relations, the Director of Industry Initiatives, the Director of the Office of Sponsored Programs Administration, the Executive Director and Associate Director of the ISU Research Foundation/Office of Intellectual Property and Technology Transfer, the Director of the ISU Research Park and Pappajohn Center for Entrepreneurship, and the Special Advisor to the VPR/ED.
- An opportunity response team (ORT) was formed to focus on the bioeconomy initiative and fostering relationships with industry in this area. Members include the Director of the Office of Biorenewables Programs; the Assistant Director of the Office of Biorenewables Programs; the Director of Industry and Government Relations; and the Director of Development, ISU Foundation. In FY07, this team helped secure an eight-year \$22.5 million research award from ConocoPhillips. This award will support ISU scientists and engineers as they research and develop a biofuel-production technology. It will also support research of the plant sciences and crop production, the harvesting and transportation of biomass and the impacts of biofuels on economic policy and rural sociology.

The above units are the key units that focus attention on economic development and technology transfer at ISU; however, significant additional related activity also occurs across campus in individual academic departments, centers and institutes, and colleges.

A recent survey of all ISU units was conducted to capture an estimate of the number of interactions ISU has had with communities and businesses across the State of Iowa. In FY07, the number of interactions reported was 4,484. This activity occurred in all 99 counties. (See Attachment B for details of these interactions, Attachment C for information on the coding used in Attachment B, and Attachment D for a map that shows distribution by county.)

In addition, the Small Business Development Center (SBDC) provided business assistance to companies, involving 2,168 clients and 15,598 counseling hours in 99 counties. They also conducted 387 training workshops in which 5,094 individuals participated. Information on SBDC is not included in the Excel sheet or map due to confidentiality reasons.

4. Please briefly describe two or three examples of major economic development collaborative projects with such other entities as Regent universities, Iowa community colleges, the Iowa Department of Economic Development, Iowa Workforce Development, or other state agencies.

Major Economic Development Collaborative Projects

Grow Iowa Values Fund -- This legislation is providing the universities and private colleges financial resources to expand technology transfer and commercialization efforts. We are in the third year of GIVF funding, in addition to providing core support for

infrastructure in the Research Park, Pappajohn Center, IPRT Company Assistance, and the VPR/ED office. Each year projects are funded that pair ISU researchers and Iowa companies. A longer summary appears below.

Battelle Initiative – ISU, the University of Iowa and the University of Northern Iowa have worked closely with the Iowa Department of Economic Development, the Board of Regents, State of Iowa; legislators and business leaders through the Biosciences Alliance of Iowa organization to implement the Battelle initiative. Proposed projects that focus on the biosciences, information technology and advanced manufacturing have been funded. A longer summary appears below.

Company Visits – Each year IDEED brings companies to visit ISU as part of their normal recruiting efforts. Two of the companies that IDEED introduced to ISU in the past year are in the process of establishing research relationships with Iowa State. In addition, one company that was a joint effort between IDEED and ISU has decided to locate in the ISU Research Park.

5. Please provide the following information about Grow Iowa Values Fund projects for FY 2007:

- a. Identify and briefly describe each project or initiative which received GIVF funding in FY 2007 including information on outcomes or progress made
- b. Identify metrics which were used to measure outcomes for each project and report progress on each metric for FY 2007
- c. Provide a description of the sources of the matching institutional dollars for each GIVF-funded project

Projects funded in FY07 will conclude May 31, 2009. All projects are in-progress and reports are interim. A copy of the full report submitted to the Board of Regents in August is attached to this report (see Attachment E).

Principal Investigator	Project Title	Award Amount
Mary Holz-Claus	Corn-Biomass Composite Fuel Pellets: An Industry-University Partnership	\$49,380
Samir Khanal	Ultrasonication in Soy Processing for Enhanced Protein and Sugar Yields and Subsequent Nisin Production	\$81,977
Vikram Dalal	Collaborative Research on High Performance Stable Amorphous Silicon-Germanium Solar Cells	\$63,406
Manjit Misra	Commercialization of a Continuous In-Line Flow Meter	\$74,480
Larry Johnson	Commercializing New Fractionated Soy Proteins to Improve Human Health and Food Quality	\$167,717

Jay-Lin Jane	Development of Resistance and Low-Caloric Maltodextrins from Cornstarch	\$96,273
David Grewell	Ultrasonic Assisted Exfoliation of Bio-Renewable Polymer Nanocomposites with Micro-Cellular Structures	\$72,681
Richard Larock	Commercialization of a Corn/Soy Oil-Based Composite Hog Feeder	\$96,000
Robert Brown	Gasification Technologies in Support of Biorefineries	\$132,247
Jacek Koziel	Purification & Quality Enhancement of Fuel Ethanol to Produce Alcoholic Beverages with Ozonation & Activated Carbon	\$81,848
Hans van Leeuwen	Converting Low Value Thin Stillage from Dry Milling Ethanol Plants into High Value Fungal Biomass	\$82,070
Pamela White	Designing Corn Lines with Dietary Fiber to Produce Ethnic Foods with Enhanced Health Benefits	\$67,960
Suzanne Hendrich	Flaxseed Lignans for Health	\$66,960
Ruth MacDonald	Role of complex carbohydrates from soybeans in inflammatory bowel disease	\$65,000
Anumantha Kanthasamy	Development of Novel Gene Therapy Approach for Parkinson's disease by Targeting a Cleavage Site of a Proapoptotic Kinase	\$50,000
Don Reynolds	Concept Paper for Biosafety Level 3 (BSL3) Facilities at Vet Med	\$38,000

High Performance Solar Cells

PI: Vikram L. Dalal

Metrics:

Publications/presentations based on project:

At ICANS in August 2007

Awards received: Iowa Energy Center

External funding applied for (indicate received/denied/pending):

DOE-BES: Pending; NSF-will be sent in the September and October round; PRF-will be sent in September round; NSF-MRSEC-Preproposal sent to VP Research

Progress Report: The project is on target for developing higher performance solar cells that Powerfilm can implement in production a few years down the line. Powerfilm has already implemented one of our improvements from the GIVF project.

Matching Funds:

- Powerfilm - \$20K in-kind
- ISU - \$48,000
 - Whitney Chair Professorship
 - Micron faculty fellowships for Excellence
 - NSF Grant ECS-0501251

Corn-biomass Composite Fuel Pellets: An Industry-University Partnership

PI: Mary Holz-Clause

CoPI(s) Douglas Stokke, Daniel Burden

Metrics:

External funding applied for (indicate received/denied/pending): A USDA Rural Development Pass-Through-Loan-Guarantee application to assist the ongoing expansion of the fuel-stove production facility in Pella, IA, has been submitted by the Iowa Area Development Group.

Progress report:

A patent application regarding the architecture of the extrusion die has been applied for by LDJ, Landers Machine, and Gary Wobler under the name of Ag Pellet Energy. Additionally, a filing for patent-protection currently is underway on a 100 percent pellet processing system for both fuel and feed applications. Ag Pellet Energy and Landers Machine have introduced this concept to the ethanol industry and are forming a new company, Ag Fuel & Feed, which will be based in Iowa. The “100 percent DDG Pellet and Processing System” is designed to be located at or near ethanol plants. Marketing the technology as a system for sale to ethanol plants was initially proposed by the ISU Extension Value-added Agriculture Project.

Matching Funds:

- LDJ Manufacturing - \$35,600 (in-kind)
- Wobler, Gary - \$7,680 (in-kind)
- Iowa Area Development Group - \$6,100 (in-kind)

Commercializing New Fractionated Soy Proteins to Improve Human Health and Food Quality

PI: Lawrence A. Johnson

Metrics:**Publications/presentations based on project:**

American Oil Chemists Society annual meeting (Quebec City, Canada):

- Soy Protein Fractionation Using Gas-Supported Screw-Pressed Soybean Meal. (N. Deak and L. Johnson)

- Compositions and Properties of Gas-Supported Screw-Pressed Soybean Meal. (N. Deak, Z. Nazareth, and L. Johnson)
- Effects of Hydrogen Peroxide on Microbial Safety and Functionality of Soy Protein Isolates (N. Deak, N. Winsetel, and L. Johnson)
- Functional Properties of Soy Protein Isolates Made from Gas-Supported Screw-Pressed Soybean Meal. (Z. Nazareth, N. Deak, and L. Johnson)

Invention disclosures:

ISURF filed for US patent on April 13, 2007.

Progress report:

We previously completed the first two of five objectives of the grant (proof-of-concept and scale-up, and process cost estimation). In the present reporting period, we focused on the third objective, to prepare a catalog of properties for our protein fractions and to compare those properties with those of existing protein products in the marketplace, which will be our competition. We have completed all of the compositional and functional tests and are evaluating and interpreting the results for the fractions produced in the pilot plant.

Matching Funds:

- SafeSoy - \$75,000 (in-kind)
- Crown Iron Works - \$20,000 (in-kind)
- ISU - \$83,000
 - IAHEES project no 290-40-42
 - Salaries/Benefits for L. Johnson, N. Deak, Technician and undergraduate hourly support

Gasification Technologies in Support of Biorefineries

PI: Robert C. Brown

Metrics:

External funding applied for (indicate received/denied/pending):

GOALI: CFD Modeling and Validation of Biomass Particle Injection in Fluidized Bed Gasifiers, Theodore J. Heindel, Francine Battaglia and John P. Reardon, National Science Foundation. Denied.

Fluidized Bed Modeling and Validation for Gasification and Pyrolysis, Robert C. Brown, Francine Battaglia and Theodore J. Heindel, ConocoPhillips, 04/01/2007-12/31/2007. Received.

Progress report:

The various beds were compared at three different flow rates, and the ratio of superficial gas velocity to minimum fluidization velocity was constant for each bed material. X-ray CT imaging was used to provide a qualitative view of the local time-averaged solids concentration, and clearly showed differences in fluidization between the materials. Computational fluid dynamics (CFD) simulations were used to predict the fluidized bed

behavior for glass beads and ground walnut shell, and were compared with the experimental data. Glass beads were used to validate the appropriate grid resolution for the CFD calculations because the material is well characterized in terms of coefficient of restitution and sphericity.

Matching Funds:

- Frontline BioEnergy - \$110,000
- ISU - \$22,500
 - Salary/Benefits for R. Brown, F. Battaglia, T. Heindel, S. Sadaka

Designing Corn Lines with Dietary Fiber to Produce Ethnic Foods with Enhanced Health Benefits

PI: Pam White, Linda Pollak and Sue Duvick

Metrics:

External funding applied for (indicate received/denied/pending):

Hendrich, S., P.J. White, and L.M. Pollak, Screening System for Digestion-Resistant Starch. USDA Special Grants Program. Center for Designing Foods to Improve Nutrition, ISU. \$30,000 funded through 2008.

Hendrich, S., P.J. White, and L.M. Pollak, Screening System for Digestion-Resistant Starch: Effects on Human Fecal Microbes and Short-chain Fatty Acid Production, ISU Plant Sciences Institute. \$50,000 funded through 2009.

White, P.J., J.-L. Jannink, and N. Yao. β -Glucan Structure and Interactions Modulate Physicochemical, Physiological and Sensory Functions of Oats. USDA National Research Initiative, Competitive Grants Program. \$495,229 funded through 2010.

J.-L. Jannink, P.J. White, M.P. Scott, K. Moore, R. Wise, and O. Anderson. Association genetics of β -glucan metabolism to enhance oat and barley germplasm for food and nutritional function. USDA National Research Initiative, Competitive Grants Program. \$500,000 funded through 2011.

Progress report:

A procedure for extracting the corn starch and determining the RS percentage has been determined by using the Megazyme Resistant Starch Kit. Analyses of various standards, including commercial high amylose (has high amount of RS) corn starch and normal corn starch, have been completed. These standards also have been analyzed on an instrument called a differential scanning calorimeter, which precisely measures heating characteristics of starches, including a measure of the RS.

Matching Funds:

- GEI Enterprises,
- Midwest Dairy Association
- USDA NRI Grant

Development of Resistant and Low-caloric Maltodextrins from Cornstarch

PI: Jay-lin Jane

Metrics:

Publications/presentations based on project: 1

Invention disclosures: 1

External funding applied for (indicate received/denied/pending):

Grow Iowa Values Funding for 2008-09: denied.

Progress report):

Novel technologies for producing resistant and low-caloric maltodextrins have been developed. Using these technologies, resistant and low-caloric maltodextrin products displaying 50% and greater enzyme resistance have been produced in the laboratory. Products made during the period between January and June, 2007 showed enzyme-resistance ranged from 51% to 97% and the water solubility ranged from 84% to 95%. The weight-average molecular weights of these products ranged from 10^3 to 10^5 Da. These products had white to yellowish color and slight off-flavor. The production process has been successfully scaled-up to kilogram size.

Matching Funds:

- GPC - \$145,000 (\$20,000 in cash, remainder in-kind)

Commercialization of a Corn/Soy Oil-Based Composite Hog Feeder

PI: Distinguished Professor Richard C. Larock

Metrics:

Publications based on project:

- Lu, Y.; Larock, R. C. "Fabrication, Morphology and Properties of Soybean Oil-Based Composites Reinforced with Continuous Glass Fibers", *Macromol. Mater. Eng.* 2007, submitted.
- Henna, P. H., Larock, R. C. "Rubbery Thermosets Prepared by Ring Opening Metathesis Copolymerization of a Functionalized Castor Oil and Cyclooctene", *Macromol. Mater. Eng.* 2007, submitted.

Presentations based on project:

- Larock, R. C. "Development of Novel Plastics from Agricultural Oils," Consortium for Plant Biotechnology Research, Washington D.C., February 13, 2007.

- Larock, R. C. "Adventures in Biopolymers, Iodine Cyclizations, and Palladium Annulation and Migration Chemistry," First University of Nevada at Reno Chemistry Graduate Student Association Distinguished Lecture Award, Reno, Nevada, February 16, 2007.
- Larock, R. C. "Novel Bioplastics and Composites from Natural Oils," Ag-West Bio and National Research Council Plant Biotechnology Institute Third Plant Bio-Industrial Oils Workshop, Saskatoon, Saskatchewan, Canada, February 27, 2007.
- Henna, P. H.; Larock, R. C. "Rubbery Thermosets Prepared by Ring Opening Metathesis Copolymerization of a Functionalized Castor Oil and Cyclooctene", 233th American Chemical Society national meeting, March 25-29, 2007.
- Larock, R. C. "Adventures in Biopolymers, Iodine Cyclizations, and Palladium Annulation and Migration Chemistry," Tohoku University, Sendai, Japan, May 23, 2007.
- Larock, R. C. "Adventures in Biopolymers, Iodine Cyclizations, and Palladium Annulation and Migration Chemistry," Okayama University, Okayama, Japan, May 29, 2007.
- Larock, R. C. "Novel Bioplastics and Composites from Natural Oils", 234th American Chemical Society national meeting, Boston, Massachusetts, August 21, 2007.
- Valverde, M., Larock, R. C. "Free Radical Synthesis of Rubbers Made Entirely From Highly Unsaturated Vegetable Oils and Derivatives", 234th American Chemical Society national meeting, Boston, Massachusetts, August 19-23, 2007.

Invention disclosures:

- Larock, R. C.; Lu, Y. S. "Bio-based Thermoset Plastic Composite Materials and Methods of Making Same", U.S. patent application 60/839,918 (2006).
- Larock, R. C.; Henna, P. H. "Ring Opening Metathesis Polymerization of Vegetable Oils", ISURF Disclosure, (2007).

External funding applied for:

- "Development of Bioplastic Composites Using Ag Co-product Fillers", Iowa Biotechnology Consortium-USDA, 9/1/06-8/31/07, funded.
- "Biorenewable Composites Reinforced with Under-used Co-products from Ethanol Production", Recycling and Reuse Technology Transfer Center, University of Northern Iowa, 7/1/07-6/30/09, funded.
- "Novel Renewable Bio-based Rubber Composites from Plant Oils and Agricultural Co-products", Iowa State University, Plant Sciences Institute, 7/1/07-6/30/09, funded.
- "Development and Commercialization of Soy/Corn/Linseed Oil Bioplastics", Consortium for Plant Biotechnology Research, pending.
- "Practical Waterborne Agricultural Oil-based Coatings", Consortium for Plant Biotechnology Research, pending.
- "Novel Waterborne Coatings from Renewable Resources", Nine Sigma, pending.

- "Vegetable Oil Copolymers to Replace Petroleum-Based Matrices in Thermosetting Composites", NIST- ATP, pending.
 - "Pultruded Window Frames from Agricultural Oils", Grow Iowa Values Fund, denied.
-

Progress report: During the last six months, we have made great progress on this project. Our work has focused on optimization of 1) the composition of the vegetable oil-based resin, 2) the ratio of the resin and glass fibers, and 3) the processing conditions, such as cure time, temperature, pressure, etc. So far, we have successfully prepared some very hard composites from several different resins (for example, 50 wt % soybean oil, 25 wt % styrene and 20 wt % divinylbenzene or 25 wt % soybean oil, 25 wt % linseed oil, 28 wt % styrene and 20 wt % divinylbenzene) reinforced with 45-55 wt % glass fibers. The tensile strength and Young's modulus are in the range 100-130 MPa and 2.5-5.0 GPa, respectively. These properties meet the requirements for a viable hog feeder. We have also dramatically shortened the cure time of the composites from 24 hr to 10-20 min, with no reduction in the thermal and mechanical properties.

Matching Funds:

- R3 Composites, AgVantage - \$96,000 (in-kind)

Commercialization of a Continuous In-Line Flow Meter

PI: Manjit K. Misra

Metrics:

Invention disclosures: Already patented

Progress report:

A prototype of the flowmeter was installed and tested in the ISU seed conditioning facility. The test apparatus consists of the prototype, a bucket elevator, a 45-bushel holding bin, calibrated slide gate for flow rate control, two way sample diverter valve, and a PC-based data logger. Seed was recycled from the holding bin to the slide gate, through the flow meter, elevator and then back to the bin during continuous operation. Seed samples were collected and weighed at periodic intervals for comparison with flow meter totalized data. A Visual Basic program was developed for collecting the real-time data from the load cell via the data acquisition board.

Matching funds:

- Almaco - \$34,500 (in-kind)
- Remington - \$8,000 (in-kind)
- ISU - \$32,500
 - Salary/Benefits Yuh, Yuan Shyy, Alan Gaul, Technical staff and hourly workers

- Use of test facilities and equipment, software license fees, prototype fabrication and labor for field install and tests

Flaxseed Lignans for Heart Health

PI: Suzanne Hendrich

Metrics:

N/A

Progress report: Tablet formulations have been developed for the 3 supplements (placebo and 2 lignan doses) and tablets are being prepared. Human subjects approval has been obtained and subjects are being recruited according to the approved inclusion/exclusion criteria. The first cohort of 30 subjects is expected to begin the trial in August 2007, with study completion by March 2008.

Matching Funds:

- ADM

Converting Low Value Thin Stillage from Dry Milling Ethanol Plants into High Value Fungal Biomass

PI: J.(Hans) van Leeuwen

Metrics:

Publications/presentations based on project:

- Sindhuja, S., Khanal, S.K., Pometto, A.L. and Van Leeuwen, J. (2007) Sindhuja, S., Khanal, S. K., Pometto, A. L. and Van Leeuwen, J. (2007) Use of microfungi for wastewater treatment and production of high value fungal by-products: A review. *Critical Reviews in Environmental Science and Biotechnology*. (by invitation, in press).
- Rasmussen, M., Kambam, Y., Khanal, S. K., Pometto, A. L. and Van Leeuwen, J. (2007) Thin stillage treatment from dry grind ethanol plants with fungi. ASABE Annual International Meeting (AIM), Jun 17-20, Minneapolis, MN.

Invention disclosures:

- ISURF #03387 "Purification of Thin Stillage from Dry Corn Milling with Fungi"
- This was covered by a provisional patent until last month and a regular patent application was submitted in June 2007, now patent pending.

External funding applied for (indicate received/denied/pending):

- Developing an alternative methodology for stillage treatment and resource recovery based on fungal cultivation, GIVF with Poet assistance – denied

- Developing an alternative methodology for stillage treatment and resource recovery based on fungal cultivation, Biomass Research and Development Initiative USDA/DoE \$800,000 with \$200,000 co-funding from Poet - pending
 - Developing an alternative methodology for Poet's BPX and BFRAC stillage treatment and resource recovery based on fungal cultivation, Poet \$300 to \$400k - pending
-

Progress report:

Bioreactors were operated to treat thin stillage, the centrate of the distillation leftovers from a dry-grind ethanol plant, Lincolnway Energy with fungi. The aerated reactors were inoculated with spores of *Rhizopus oligosporus*. Mycelial growth was visible within two days after inoculation. By day 3, the 5-L vessel filled with fungal biomass. The total organic concentration of the thin stillage, characterized as chemical oxygen demand (COD) of 94 g/L, was lowered by 77%, after four days of batch fermentation. Continuous operation could achieve 93% COD removal. Total suspended solids in the samples decreased from 30 to less than 0.1 g/L. Water from thin stillage could be recovered without evaporation, in contrast to current technology, with less loss.

Matching Funds:

- Lincolnway Energy - \$20,000 (in-kind)
- ADM - \$10,000 (in-kind)
- Northern Filter - \$18,000 (in-kind)
- ISU - \$35,000
 - Salary/Benefits Hans van Leeuwen, Sam Beattie, Alan Trenkle

Ultrasonication in Soy Processing for Enhanced Protein and Sugar Yields and Subsequent Nisin Production

PI: Samir Kumar Khanal

Metrics:**Publications/presentations based on project:**

Karki, B*, Lamsal, B. P., Grewell, D., Van Leeuwen, J. and **Khanal, S. K.**

Ultrasonication in soy processing for enhanced protein and sugar yields and subsequent bacterial nisin production. ASABE Annual International Meeting (AIM), Jun 17-20, Minneapolis, MN.

Invention disclosures:

Ultrasonication in soy processing for enhanced protein and sugar yields and subsequent nisin production [US Provisional Patent No. 60/914,502].

Progress report:

Several batch sonication experiments were conducted using defatted soybean flakes under controlled temperature conditions. The particle size of sonicated sample decreased by nearly 10 to 15-fold with respect to control at 100% amplitude. The particle size reduction was proportional to power level. The analyses of extract with ultrasound pretreatment under controlled temperature conditions showed improvements in protein

yield by 43% and sugar release by 45% with respect to control. These tests showed that temperature did not have significant effect on protein and sugar yields.

Matching Funds:

- Cargill - \$15,000 (in-kind)
- ADM - \$7,000 (in-kind)
- P&G - \$10,000 (in-kind)
- Branson - \$45,000 (in-kind)

Role of Complex Carbohydrates on Colon

PI: Ruth MacDonald

Metrics:

N/A

Progress report: The goal of the project is to develop a suitable animal model and tissue markers to investigate the role of dietary carbohydrates in colon cell physiology. To address this goal, we have undertaken a series of animal feeding trials using soy-based products. The animal trials have been completed and we are in the process of analyzing tissue samples. In one model, we induced inflammation in the colon that would be similar to that observed in humans with inflammatory bowel disease. The tissues from these animals are being studied for specific markers of tissue damage and changes in cell physiology to determine if the dietary components protected the cells from the insult. We are working on tools to examine cellular changes in the colon of these animals and identifying appropriate biomarkers.

Matching Funds:

- ISU Ag Experiment Station Technician salary/benefits

Development of a Novel Gene Therapy Approach for Parkinson's Disease by Targeting a Cleavage Site of a Proapoptotic Kinase

PI: Anumantha G Kanthasamy

Metrics:

Invention disclosures: In addition to the progress below, we have also formed a small startup company called PK Biosciences. This will foster our efforts to commercialize this and other novel technologies.

Progress report:

As proposed, we began examining the neuroprotective effect of lentiviruses coding for the PKC δ cleavage motif triplet peptides QDAM₃, DMQD₃ and DMQA₃ in cell culture and animal models of Parkinson's disease. First, we cloned the PKC δ cleavage

site sequence in QDAM₃ in LentiTopoV5 vector and then generated lentiviruses coding for the QDAM₃ triplet peptide. LacZ was used as a negative control. To determine the transduction efficiency of the lentiviruses coding for LacZ and QDAM₃, N27 cells were transduced with different titers. Immunocytochemical analysis revealed >80% transduction efficiency. Lentiviruses coding for DMQD₃, and DMQA₃ but not QDAM₃ were found to be protective against MPP⁺-induced proteolytic activation and cell death, confirming their neuroprotective effect in cell culture models of Parkinson's disease.

Matching Funds:

- ISU - \$50,000 (W. Eugene and Linda Lloyd Endowment and salary savings funds)
 - Salary/Benefits An. Kanthasamy, Ar. Kanthasamy, V. Anatharam, post-doc
 - Equipment, animals and animal care, travel & publication costs

Purification and Quality Enhancement of Fuel Ethanol to Produce Industrial Alcohols with Ozonation and Activated Carbon

PI: Jacek Koziel

Metrics:

Publications/presentations based on project:

- Purification and Quality Enhancement of Fuel Ethanol to Produce Industrial Alcohols with Ozonation and Activated Carbon (2007 ASABE Annual International Meeting, Minneapolis, MN June 2007)
- Purification of Alcohol with Ozonation and Activated Carbon (Institute for Food Safety and Security symposium, Ames, IA April 2007, Air & Waste Management Association Iowa Chapter meeting, Des Moines, IA March 2007, Biorenewable Resources and Technology Research Symposium, Ames, IA April 2007, and Iowa Renewable Fuels Association meeting, Ames, IA March 2007).

Awards received: Grand Prize for Research from the American Association of Environmental Engineers, May 2007

Progress report (300 word maximum): The pure feed gas providing setup improved ozone gas quality significantly. However, it was also found that the ozone generator produced impurities in ozone gas during the ozone generating process. To improve ozone gas quality, a new ozone generator was introduced, which is consisted of less ozone reactive materials. Also, our original ozone generator was designed .It is consisted of only non-ozone reactive materials such as stainless steel, glass, and PTFE. It is expected that purer ozone gas provides more precise data of the purification efficiency.

Matching Funds:

- Mello3Z - \$55,000 (in-kind)

- Lincolnway Energy - \$10,000 (in-kind)
- Fischer Law Firm – \$14,400
- ISU Salary & Benefits (Van Leeuwen, Koziel)

Ultrasonic Assisted Exfoliation of Bio-Renewable Polymer Nanocomposites with Micro-Cellular Structures

PI: David Grewell

CoPIs: Michael Kessler, Howard Van Auken

Metrics:

Publications/presentations based on project:

Journal Article:

- Maria Vlad, Gowrishankar Srinivasan, David Grewell, *Improvement of the mechanical properties of soy protein isolate based plastics through formulation and processing*, International Polymer Processing Journal, In Press.

Conference Papers:

- Maria Vlad, Gowrishankar Srinivasan, David Grewell, Improvement of the mechanical properties of soy protein isolate based plastics, *Proceedings of the 65th Annual Technical Conference for the Society of Plastics Engineers (2007)*, Society of Plastics Engineers, Brookfield, CT
- Gowrishankar Srinivasan, Michael Kessler, David Grewell, Casting of Zein Protein Polymers, *Proceedings of the 65th Annual Technical Conference for the Society of Plastics Engineers (2007)*, Society of Plastics Engineers, Brookfield, CT
- David Grewell, Maria Vlad, Gowrishankar Srinivasan, Improvement Of The Mechanical Properties Of Soy Protein Isolate Based Polymers, The Polymer Processing Society 23rd annual meeting, Salvador, Brazil, May 27-31, 2007

Magazine articles:

- David Grewell, Mike Kessler, Maria Vlad, Gowrishankar Srinivasan, *Enhancing Plastic from Naturally Occurring Proteins*, Submitted November 2006, SPG Media Group PLC, Brunel House, London W2 1LA, UK
- David Grewell, Michael Kessler, and William Graves, *Protein-based Plastics and Applications*, Bioplastics Magazine, Issue 02/2007 (June).

External funding applied for (indicate received/denied/pending):

Status	Title	Sponsor	Amount	PI	Co-PI(s)
Funded	<i>Degradable pots for plants</i>	Horticultural Research Institute	\$14,000	William Grave	David Grewell
Pending	<i>Protein plastics and application development</i>	USDA-CSREES	\$416,875	D. Grewell	Mike Kessler, Deland Myers

Progress report:

For Zein-based plastic, it was observed that moisture absorption increased with immersion time. However, an unexpected phenomenon of fluctuation in water uptake was observed with both concentrations of nanoclay formulations. It was observed that, initially, water absorption was negative and generally remained relatively low and in some cases remained negative (Figure 1). A possible hypothesis for this observation was that the exfoliated nanoclay distribution acted as a diffusion barrier preventing water from diffusing into the samples.

Matching Funds:

- Creative Composites - \$10,000 (in-kind)
- Vermeer - \$10,000 (in-kind)
- Trexel/Zien/Branson \$38,500 (in-kind)
- ISU - \$12,000 (equipment)

Modular BL3 Facility

PI: Don Reynolds

Metrics:

External funding applied for (indicate amount & received/denied/pending):

Kellogg Foundation - \$1 million / Denied

Progress report:

To date, \$10,785 has been spent on the planning of the BL3 modular laboratory. This planning has resulted in various sites being considered for the BL3 at the VMRI and at the Vet Med complex. It has been revealed that VMRI is at capacity with regard to utilities and adding more facilities is not possible without major expansion of infrastructure which is beyond the scope of this project. The sites located near the Vet Med complex are being considered and planning is under way in preparation for an upcoming CPC meeting.

Matching Funds: Approximately \$2.0M is needed for the project, they are still in the process of securing the funding.

6. Please provide the following information about Battelle-funded projects for FY 2007:
- Identify and briefly describe each project or initiative which received Battelle funding in FY 2007 including information on outcomes or progress made
 - Identify metrics which were used to measure outcomes for each project and report progress on each metric for FY 2007

A copy of the full report submitted to the Board of Regents in August is attached to this report (see Attachment F).

METRICS:

Metrics for Battelle are the same as GIVF, publication/presentation, honors/awards, external funding (leverage), and intellectual property. A summary across all platforms and sources of funding includes:

Publication/Presentations: 21

Intellectual Property disclosures: 2

External Funding (leverage): 46 grants have been applied for, as of July 01, 2007, 15 awards have been received totaling **\$8,266,000**.

ANIMAL SYSTEMS

Platform Chair: Max Rothschild

Highlights:

- 50 pig genes have been selected and molecular markers have been identified for 28 of these genes. These markers will be useful in marker-assisted breeding for improved characteristics in pigs. These markers were developed using equipment purchased with the battelle infrastructure funds.
 - A study is underway to evaluate the effects of high carbohydrate vs. high fat diets in pigs. The feeding trials have been done and samples taken to prepare for microarray analysis
 - The project that is studying transmissible spongiform encephalopathies has formed a collaboration with a small company in Iowa City (iOptics, LLC)
 - Improvements have been made to the Kildee Hall Animal Facilities to allow expanded housing of canine and feline animals. Animals are predicted to be able to move into the new facility in August 2007.
-

ADVANCED FOOD & FEED

Platform Chair: Ruth MacDonald

Highlights:

- The Wellness Center is open for business.
 - One project has started and two more are in the planning stages.
 - One full time staff has been hired, salary provided by the College of Human Sciences
 - Diane Birt has been named the Interim Director effective September 1, 2007
 - A two-day symposium was held – the first annual Advanced Foods for Health Symposium – and attended by more than 100 people
 - Several companies have toured the Wellness Center and indicated that this will be a valuable resource to companies.
-

ADVANCED MANUFACTURING

Platform Chair: Ron Cox

Highlights:

- Discussions are ongoing to determine the best use of the funds
-

BIOECONOMY

Platform Chair: Robert Brown

Highlights:

- In the syngas cleanup effort, updates are being made to existing equipment in order to evaluate a variety of feedstocks. In addition, a new method for gas clean-up is being installed.
 - A microreactor was designed, constructed, and used for CO-water mass transfer measurements and initial experiments show that the CO-water volumetric mass transfer coefficients are repeatable under a variety of conditions.
 - A continuous syngas fermentation system is under development to improve on the previous batch-process, to produce polyhydroxy alkanate (PHA) biopolymers. Battelle infrastructure funds are being used to develop this system.
 - E.Coli were successfully engineered to co-produce acetaldehyde and hydrogen from glucose. Work is continuing to increase and optimize production
 - Six rhodospirillum rubrum genes have been identified that are involved in PHA production. Further study of these genes can lead to enhanced production of PHA from syngas fermentation
 - A new pyrolyzer has been designed and constructed. In addition, an analytical instrumentation laboratory has been set up to analyze the products produced from pyrolysis
 - Infrastructure funds have also been used to renovate research laboratories and provide essential equipment for three faculty in the Department of Chemistry. **This support led to more than \$13,450,000 in grant submissions, with more than \$5,320,000 already awarded**
 - A laser system capable of performing planar imaging of sprays and combusting flows has been purchased – two projects are currently underway
-

BIOSECURITY

Platform Chair: Manjit Misra

Highlights:

- Instrumentation has been purchased and installed for the Antimicrobial and Prebiotic Discovery Initiative
 - SOP's have been developed for two procedures

- Assistant Scientist has been hired
 - Commercial advisors have been selected and bi-monthly meetings are taking place
 - Iowa Livestock Traceability project
 - Key barriers have been identified
 - Software revisions are underway
 - 30 people have been trained to use the software, in collaboration with UNI
 - Training has been approved for 3 continuing education credits
 - The upgrade of a lab to a BL2 was approved by ISU, and equipment has been purchased with a renovation completion set at Fall 2007
 - A field building has been erected for the college of agriculture
-

INFORMATION TECHNOLOGY

Platform Chair: Jim Oliver

Highlights:

- The CyberInnovation Institute has moved into their new location at the ISU Research Park
 - ISU was invited to join the Great Lakes Consortium for Petascale Computation led by the National Center for Supercomputing Applications (NCSA) at the University of Illinois, Urbana-Champaign. This regional consortium is a finalist in the National Science Foundation's "High Performance Computing System Acquisition: Towards a Petascale Computing Environment for Science and Engineering" program, a \$500M project to build the ultimate high-performance computer.
 - April 25-27 the CyberInnovation Institute (CII) hosted the "Emerging Technologies Conference" ETC 2007. This three-day event featured research progress and economic development activities of all CII's research centers and attracted more than 450 attendees.
 - In May the Center for Information Assurance hosted the second annual "Cyber Defense Competition" for regional high school students at the CyberInnovation Institute's new facilities at 2321 North Loop Drive in Ames. This two-day event was attended by more than 50 students and attracted substantial media attention.
 - A high-performance computing system has been purchased for the Windus group. They have applied for nearly \$10.5M in funding (all pending) to utilize the system.
 - A computer cluster with 16 nodes and 32 processors has been purchased for the Wang group. They have secured funding from DARPA for experimentation.
-

ENDOWED CHAIRS PROGRAM

Of the \$2 M allocated for matching funds (\$1public:\$2private) for endowed chairs, \$500,000 in matching funds will be added to \$1M in private gift funds received in April

2007 to create the W. Eugene Lloyd Chair in Toxicology in the College of Veterinary Medicine. The College has not appointed a faculty member to this chair and no expenditures have been made from the endowment.

Numerous proposals for endowed chairs related to the Biorenewables area are pending and matching dollars have been discussed with the donors on a first to be funded will be the first qualified for matching basis.

Commitments on these proposals are expected during the fall to utilize the remaining matching funds.

7. Optional: If desired, please include observations regarding:

- a. Availability of startup and venture capital for technology entrepreneurs
- b. Suggestions for new programs or activities that could further enhance the impact of university technology transfer and service on creation of jobs and wealth in Iowa.

7.A Iowa continues to suffer from a lack of investment capital for start up and rapidly growing technology/innovation based firms.

- The Values Funds to the universities have provided a valuable source of funding for proof of concept/early stage development funding for the innovations that will become the next generation of businesses.
- There has been an increase in the number of Angel/Seed funds throughout the state. Available capital and experience varies widely and there is little coordination between the funds. The seed funds have typically brought more individual investors into play.
- The funding provided by Wellmark through the Pappajohn Center's has been a very valuable tool for early stage investment.
- There are very few true venture capital firms located in the state of Iowa actively investing funds at this point in time.
- Each fund has a particular focus, the investment profile further limiting choices and resulting in very little competition.
- Most venture firms invest with other venture firms, one as lead with the others in secondary positions to spread risk and assure the ability to continue to fund the needs of the company--this is a major problem in Iowa.
- Firms must look outside the state for significant investments of \$5 million plus.
- Really good businesses with really good management teams will attract money; a major problem is the development of an experienced/skilled management team.

7.B.1 Restoration of funds for economic development and technology transfer activities due to budget cuts in the past several years would greatly enhance the University's efforts in this area. The following is a summary of what benefits would occur if funds

were restored in the three units affected by budget cuts. (This information is the same information provided to the Board of Regents' staff in August, 2007.)

- **Small Business Development Centers:** Restoring \$300,000 of state funding would bring the Small Business Development Centers to the 2001 level and would allow us to see more clients, offer additional training and target additional services to high potential clients. Currently a high majority of our centers have very limited or no support staff. This means that we have highly trained professionals answering the phone and entering data instead of providing counseling and training for entrepreneurs. Along with increased client assistance, additional funding would also help us restore the South Central SBDC, headquartered in Creston, to full funding status. In terms of outcomes, we estimate that this additional funding would lead to the creation of over 300 new jobs, leverage 15 million dollars in additional financing and result in sales increases of 50 million dollars for Iowa companies.
- **Iowa State University Research Park:** The restoration of approximately \$230,000 in funding to the Iowa State University Research Park would provide direct benefit to Iowa State University efforts to establish and support new technology ventures. New funds would be utilized to support the costs of providing incubator space and the support services required by new and early stage companies. The additional funds will increase the capacity for business incubation resulting in more new companies created and higher quality support for the young companies.
- **Institute for Physical Research and Technology (IPRT):** In recent years the IPRT economic development programs suffered a loss of over \$2,500,000 in budget cuts. Ironically, these cuts came at a time when the need for IPRT's expertise by Iowa industries was rapidly growing. Although much of the program has survived the cuts, it now serves only a fraction of the Iowa companies it once served and the current personnel are overextended. Each year since the budget cuts, both the technology commercialization unit and the technical assistance unit have had unmet requests for assistance to Iowa companies. The attached chart shows the reductions in overall company assistance over the period of 1993 to 2007.

A unique feature of the economic development program in IPRT is the active participation of scientists from internationally renowned ISU centers such as the Center for Nondestructive Evaluation, the Virtual Reality Applications Center and the Center for Catalysis. Also, these centers have excellent track records of spinning off new Iowa businesses in the areas in which they excel. Unfortunately, budget cuts reduced our ability to inform Iowa manufacturers about our industrial outreach program, which provides firms with the know-how to apply the results of cutting-edge research to their issues of quality control. This loss also meant that students who previously received training in doing the basic engineering work for projects no longer have this important hands-on industrial experience.

The technology commercialization unit has administered cost-sharing, contract research projects and since 1993 has leveraged tax dollars slightly better than 4 to 1. The staff are frustrated — they are working with Iowa's small to medium-

sized manufacturers and identifying research and development needs that can be addressed by university teams of faculty scientists and engineers. These small companies have very limited R&D dollars and facilities, and now, this unit does not have the funds needed to leverage the companies' limited resources. These are projects with obvious economic impact—introduction of new products, addressing manufacturing processes, and improving quality—all areas that impact Iowa's global competitiveness in the manufacturing sector.

The materials assistance unit of the IPRT economic development program provides short-term technical assistance to Iowa manufacturers and is often the first interaction manufacturers have with the University. Restoration of funding would allow for growth of materials assistance, enhancing their delivery of services in three crucial areas. First they would be able to alleviate saturation of their available resources by adding a new staff member, thereby increasing their responsiveness to Iowa manufacturers. Second, by adding a staff member with complementary expertise, they will be able to offer a wider scope of services directly meeting the needs of Iowa manufacturers. Results of recent surveys of Iowa manufacturers by IPRT and CIRAS indicate that materials and quality issues associated with metallurgical processing, material selection, fabrication, and especially, coatings for wear and corrosion protection remain top priorities. If funding becomes available, they will hire staff with coating expertise. Finally they would utilize a portion of this additional funding to reinstate technical assistance projects with the broader University community. Both the traditional IPRT economic development units and the new emerging Centers such as the Center for Building Energy Research are dedicated to enhancing the state's competitiveness. Restoring the budget cuts to IPRT units would have a rapid and quantifiable impact on Iowa's manufacturing sector. An investment now will result in continuing benefits to Iowa's companies, important opportunities to retain our brightest students, and new industries based on discoveries in ISU's world-class Centers.

7.B.2 Provide funds for development of a central database by IDEED of Iowa technology companies, contacts, and areas of technology interest. This database should be web based for updating by the companies and access by the Iowa university technology transfer offices as well as linkages to the universities' technologies available for licensing. This could lead to a broader pool of Iowa companies for the technology transfer offices to contact and potentially license. This could also potentially lead to more funding from Iowa companies to the university researchers.

Research Park

	<u>FY05</u>	<u>FY06</u>	<u>FY07</u>
Number of companies in Research Park	51	48	61
Private companies	41	39	47
University-related	10	9	14
Number of new companies in Research Park	6	6	16
Private companies	6	6	10
University-related	0	0	6
Number of employees in companies in Research Park	619	621	636
Private companies	397	400	390
University-related	222	221	246
Number of startup companies in Research Park	3	5	6

Disclosures, Patents, Licenses, New Starts

	<u>FY05</u>	<u>FY06</u>	<u>FY07</u>	<u>AUTM</u> <u>Ranking*</u>
Number of invention disclosures	142	120	114	21st (tie)
Number of patents filed	54	52	41	47th
Number of patents awarded	15	19	26	53rd
Number of licenses and options executed (in total)**	218	140	113	2nd
Number of licenses and options executed (in Iowa)	98	42	62	
Revenues (in total)	\$4,935,000	\$8,064,000	\$8,127,000	46th
Revenues (in Iowa)	\$534,000	\$669,000	\$672,000	
Number of startup companies formed (in total)***	5	3	2	22nd (tie)
Number of startup companies formed (in Iowa)	2	1	2	

AUTM (Association of University of Technology Managers) is a national association that conducts annual surveys--most recent data published was based on FY05 and included 158 U.S. university participants.

**Over the last three years, licenses for plant varieties have accounted for 81% of total licenses and options. The decline in total numbers for FY06 and FY07 is due to a different method of accounting for plant variety licensing

***Through licensing activities

Research Funding Received

	<u>FY05</u>	<u>FY06</u>	<u>FY07</u>
Research funding	\$179,800,000	\$171,400,000	\$167,100,000
Research funding from industry (in total)	\$16,000,000	\$15,500,000	\$14,200,000
Research funding from Industry (in Iowa)	\$11,200,000	\$10,600,000	\$8,100,000

Iowa Companies and Communities Served by ISU during FY07					
County	City/Town	Name of Company or Community Served	Name of ISU Unit Providing Assistance	Type of Assistance	
Adair	Greenfield	Bull Technologies and Manufacturing	College of Engineering	BAC	
Adair	Greenfield	Grow Iowa Foundation	College of Engineering	BCOM, BAC	
Adair	Greenfield	CAI Students	Crop Advisor Institute	PWD	
Adair	Greenfield	Greenfield	Families Extension	OCOM	
Adair	Orient	City of Orient	Agricultural Education and Studies	FAC	
Adair	Greenfield	Greenfield	Extension CED	TCOM	
Adair	Greenfield	Keller Manufacturing	Extension CED	BAC	
Adair	Orient	Midwest Partnership Corporation	Extension CED	FAC/ BCOM	
Adair		Renew Rural Iowa	Extension CED	FAC	
Adair		Rural Development Resource Center: Grow Iowa Fund; Wallace Fund; Southwest Iowa Coalition	Extension CED	BAC/ TCOM/ FAC/ BCOM	
Adair		Southwest Iowa Coalition	Extension CED	FAC	
Adair	Adair	Adair-Casey Community	ISU Extension	BCOM	
Adair		Adair County RC&D	ISU Extension	BCOM	
Adair	Greenfield	City of Greenfield/Main Street	ISU Extension	BCOM	
Adair	Fontanelle	City of Fontanelle/Enterprise Club	ISU Extension	BCOM	
Adair		Adair County Empowerment	ISU Extension	FAC	
Adair	Greenfield	Nodaway Valley Community Schools	ISU Extension	OCOM	
Adair		Adair County Home Care	ISU Extension	OCOM	
Adair	Adair	Little Bomber Preschool	ISU Extension	PWD	
Adair	Menlo	West Central Community Schools	ISU Extension	PWD	
Adair	Bridgewater	B-F Prekindergarten	ISU Extension	PWD	
Adair	Greenfield	Nodaway Valley Developmental Preschool	ISU Extension	PWD	
Adair	Orient	Shared Visions O-M	ISU Extension	PWD	
Adair	Greenfield	Little Lambs	ISU Extension	PWD	
Adair	Greenfield	Sunshine Day Care Center	ISU Extension	PWD	
Adair	Adair	Owner Revolution Inc	ISUE-CIRAS	TAC	
Adair	Greenfield	Cardinal Glass Industries Inc	ISUE-CIRAS	TAC	
Adair	Greenfield	Cardinal Glass Industries Inc	ISUE-CIRAS	TAC	
Adair	Greenfield	Greenfield	ISU Extension	OCOM	
Adair		Adair County Farm Bureau	Extension CED	FAC/ BCOM	
Adair		Adair County Supervisors	Extension CED	FAC/ BCOM	
Adair		Adair County Tourism	Extension CED	FAC/ BCOM	
Adair		Cardinal IG	Extension CED	FAC/ BCOM	
Adair		City of Greenfield	Extension CED	FAC/ BCOM	
Adair		Greenfield Chamber/Mainstreet & Development	Extension CED	FAC/ BCOM	
Adair		Greenfield Implement Company	Extension CED	FAC/ BCOM	
Adair		Greenfield Municipal Utilities	Extension CED	FAC/ BCOM	
Adair		Multi-State Regional Development	Extension CED	FAC	
Adair		Regional Foods Working Group	Extension CED	BAC	
Adair		Rural Development Resource Center	Extension CED	FAC	
Adair		Rural Development Summit	Extension CED	FAC	
Adair		Wash Haus, LLC	Extension CED	FAC/ BCOM	
Adair	Greenfield	Adair Co. Cattlemen	External Relations	FAC	
Adair		Empowering Adair County Foundation	ISU Extension	FAC	
Adair County	44				44
Adams	Corning	Adams County Great Places	IDRO	BCOM	
Adams	Corning	Adams County Economic Development Corporation	College of Engineering	BCOM	
Adams	Corning	Corning Meat Processing	Meat Science Extension	PWD	
Adams	Corning	Adams County Great Places	IDRO	BCOM	
Adams	Corning	Corning	Extension CED	TCOM	
Adams	Corning	Johnny Carson Birthplace	Extension CED	BAC	
Adams		Adams County	Extension CED	FAC	
Adams		Adams County Farm Bureau	Extension CED	FAC/ BCOM	
Adams		Emerald Hills Dairy Consortium	Extension CED	BAC	
Adams		Grundman Insurance	Extension CED	FAC/ BCOM	
Adams		McMahon Drug Store	Extension CED	FAC/ BCOM	
Adams		Regional Foods Working Group	Extension CED	BAC	
Adams		Renew Rural Iowa	Extension CED	FAC	
Adams	Corning	Adams County - VITA site	Families	OCOM	
Adams	Corning	Ron Corey vineyard & winery	Midwest Grape & Wine Industry Institute	TAC, BAC	
Adams	Corning	Adams County - VITA site	ISU Extension	OCOM	
Adams	Corning	Adams Co. Steer Carcass Futurity	External Relations	FAC	
Adams		Adams Community Chamber of Commerce	Extension CED	FAC/ BCOM	
Adams		Adams Community Economic Development, Corning Chamber/Mainstreet	Extension CED	BCOM	
Adams		Corning Community School District	Extension CED	FAC/ BCOM	
Adams		Corning Nursing & Rehab Center	Extension CED	FAC/ BCOM	
Adams		Midwest Opportunities	Extension CED	FAC/ BCOM	
Adams		Miltner Insurance	Extension CED	FAC/ BCOM	
Adams		Multi-State Regional Development	Extension CED	FAC	
Adams		Okey Vernon First National Bank	Extension CED	FAC/ BCOM	
Adams		Regional Marketing	Extension CED	BCOM	
Adams		Rural Development Resource Center: Grow Iowa Fund; Wallace Fund; Southwest Iowa Coalition	Extension CED	BAC/ TCOM/ FAC/ BCOM	
Adams		Rural Development Summit	Extension CED	FAC	

	Adams		Second Home Subdivision	Extension CED	BAC
	Adams		Southern Iowa Council of Government	Extension CED	BCOM
	Adams		Southwest Iowa Coalition	Extension CED	FAC
Adams County		31			31
	Allamakee	New Albin	Trinity Fabrications	College of Business	FAC
	Allamakee	Postville	Norplex-Micarta	OIPTT	BAC
	Allamakee	Upper Explorerland	Building & Zoning	CRP	TCOM
	Allamakee	Postville	Norplex - Micarta	IPRT Company Assistance-NDE	TAC
	Allamakee	Postville	Agriprocessors	Meat Science Extension	PWD
	Allamakee	Waukon	Distance Education Students = 1	Brenton Ctr for Ag Instruction	PWD
	Allamakee	Waukon	Jet's Meat Processing	Meat Science Extension	PWD
	Allamakee	Waukon	Quillin's Meat Processing Plant	Meat Science Extension	PWD
	Allamakee	Lansing	Nex-Gen Biofuels, Inc.	Extension CED	BAC
	Allamakee	Upper Explorerland	Building & Zoning	Extension CED, CRP Extension	TCOM
	Allamakee	Waukon	NE Iowa Community Development Conference	Extension CED	FAC
	Allamakee		Northeast Iowa Food & Farm Coalition	Allamakee County Extension	BCOM
	Allamakee		Northeast Iowa Food & Fitness Initiative	Allamakee County Extension	BCOM
	Allamakee	Waukon	Allamakee County Economic Development	Allamakee County Extension	BCOM
	Allamakee	Waukon	Waukon Chamber of Commerce	Allamakee County Extension	FAC
	Allamakee	Postville	Postville Chamber of Commerce	Allamakee County Extension	FAC
	Allamakee	Lansing	Lansing Chamber of Commerce	Allamakee County Extension	FAC
	Allamakee	Waukon	Allamakee Substance Abuse Prevention	Allamakee County Extension	OCOM
	Allamakee	Waukon	Allamakee County Auditor	Allamakee County Extension	OCOM
	Allamakee	Waukon	Community Connections	Allamakee County Extension	OCOM
	Allamakee	Waukon	Veterans Memorial Hospital	ISU Extension	OCOM
	Allamakee	Lansing	Kerndt Brothers Savings Bank	ISU Extension	PWD
	Allamakee	Lansing	Lansing Housing Products, Inc.	ISUE-CIRAS	TAC
	Allamakee	New Albin	Trinity Fabricators Inc	ISUE-CIRAS	BAC
	Allamakee	Lansing	Lansing Housing Products, Inc.	ISUE-CIRAS	BAC
	Allamakee	Postville	Norplex Micarta	ISUE-CIRAS	BAC
	Allamakee	New Albin	Trinity Fabricators Inc	ISUE-CIRAS	TAC
	Allamakee	Postville	Norplex Micarta	ISUE-CIRAS	TAC
	Allamakee	Waukon	Allamakee Co.	CTRE/CP Tech	PWD
	Allamakee	Waukon	Iowa DOT	CTRE/CP Tech	PWD
Allamakee County		30			30
	Allamakee		Allamakee County Auditors	Extension CED	OCOM
	Allamakee		NE Iowa Community Development Conference	Extension CED	FAC
	Allamakee		NE Iowa Food & Farm Coalition	CD-DIAL - Sociology Extension	BAC
	Allamakee		Silos & Smokestacks National Heritage Area	Extension CED	OCOM
Allamakee County		4			4
	Appanoose	Centerville	Results Consulting, LLC	OIPTT	BAC
	Appanoose	W. Centerville	GIS Technician	CRP	TCOM
	Appanoose	W. Centerville	The Building Inspectors	CRP	TCOM
	Appanoose		Board of Administrators	CRP	TCOM
	Appanoose	Centerville	Irvin Company	College of Engineering	BAC
	Appanoose	Centerville	Results Consulting, inc.	College of Engineering	FAC
	Appanoose	Centerville	Rattlers	College of Engineering	FAC
	Appanoose	Centerville	Distance Education Students = 1	Brenton Ctr for Ag Instruction	PWD
	Appanoose	Centerville	Indian Hills Community College	Agricultural Education and Studies	OCOM
	Appanoose	Moravia	City of Moravia	Extension CED	BCOM
	Appanoose	Moravia	Moravia	Extension CED	TCOM
	Appanoose	W. Centerville	GIS Technician	Extension CED, CRP Extension	TCOM
	Appanoose	W. Centerville	The Building Inspectors	Extension CED, CRP Extension	TCOM
	Appanoose		Administrator	Extension CED, CRP Extension	TCOM
	Appanoose	Centerville	Mercy Medical Center	ISU Extension	PWD
	Appanoose	Centerville	Appanoose Biofuels, LLC	ISUE-CIRAS	TAC
	Appanoose	Centerville	Media Tech	ISUE-CIRAS	BAC
	Appanoose	Centerville	B and K Machining	ISUE-CIRAS	TAC
	Appanoose	Centerville	Secondary Roads	CTRE/CP Tech	PWD
	Appanoose		Administrator	CRP	TCOM
	Appanoose		Supervisor	CRP	TCOM
	Appanoose		Zoning Administrator	CRP	TCOM
	Appanoose		ADLM Empowerment Board	CD-DIAL - Sociology Extension	OCOM
	Appanoose		Appanoose County Auditors	Extension CED	OCOM

	Appanoose		Board of Administrators	Extension CED, CRP Extension	TCOM
	Appanoose		Supervisor	Extension CED, CRP Extension	TCOM
	Appanoose		Zoning Administrator	Extension CED, CRP Extension	TCOM
Appanoose County		27			27
	Audubon	Audubon	Distance Education Students = 3	Brenton Ctr for Ag Instruction	PWD
	Audubon	Audubon	Audubon Community Schools	Agricultural Education and Studies	OCOM
	Audubon	Manning	Manning Community School	Agricultural Education and Studies	FAC
	Audubon		Regional Foods Working Group	Extension CED	BAC
	Audubon		Rural Development Resource Center: Grow Iowa Fund; Wallace Fund; Southwest Iowa Coalition	Extension CED	BAC/ TCOM/ FAC/ BCOM
	Audubon	Audubon	Audubon	ISU Extension, Audubon County	FAC
	Audubon		Hobby Farms	ISUE-CIRAS	TAC
	Audubon	Audubon	Audubon Co.	CTRE/CP Tech	PWD
	Audubon	Audubon	City of Audubon	CTRE/CP Tech	PWD
	Audubon		Audubon County Auditors	Extension CED	OCOM
	Audubon		Audubon County Economic Development Corporation	Extension CED	FAC/ BCOM
	Audubon		Multi-State Regional Development	Extension CED	FAC
	Audubon		Renew Rural Iowa	Extension CED	FAC
	Audubon		Rural Development Resource Center	Extension CED	FAC
	Audubon		Rural Development Summit	Extension CED	FAC
	Audubon		Southwest Iowa Coalition	Extension CED	FAC
	Audubon	all communities	Volunteer Income Tax Assistance	ISU Extension	OCOM
Audubon County		17			17
	Benton	Vinton	MellO3z	OIPTT	BAC
	Benton	Urbana	Urbana Planning & Zoning Chair	CRP	TCOM
	Benton	Van Horne	Benton Community H.S.	College of Engineering / ABE (PLTW)	OCOM
	Benton	Norway	Distance Education Students = 1	Brenton Ctr for Ag Instruction	PWD
	Benton	Mt. Auburn	Distance Education Students = 5	Brenton Ctr for Ag Instruction	PWD
	Benton	Norway	Frontier Natural Products	Organic Ag Program (K. Delate; Agronomy & Horticulture)	TAC
	Benton	Urbana	Urbana Planning & Zoning Chair	Extension CED, CRP Extension	TCOM
	Benton		25 entrepreneurs	Extension CED	BAC
	Benton		Benton County	Extension CED	PWD
	Benton		Benton County Developing Dynamic Leaders	Extension CED	OCOM
	Benton		NE Iowa Community Development Conference	Extension CED	FAC
	Benton	Vinton	Vinton	Benton County Extension CEED	BCOM
	Benton	Vinton	Vinton Shellsburg Community School District	Benton County Extension CEED	OCOM
	Benton		Shawn Ritter Farm	Extension/Iowa Beef Center	TAC
	Benton	Watkins	Natural Soy Products, LLC	ISUE-CIRAS	TAC
	Benton	Vinton	City of Vinton	CTRE/CP Tech	PWD
	Benton	Vinton	Fischer Law Firm LLP	Industry Relations	TAC
	Benton		Benton - ISU Extension County Office Marketing Surveys	CD-DIAL - Sociology Extension	BAC
	Benton		Benton County	Extension CED	PWD
	Benton		Silos & Smokestacks National Heritage Area	Extension CED	OCOM
	Benton	Vinton	Benton Co.	CTRE/CP Tech	PWD
	Benton	Vinton	Benton Co.	CTRE/CP Tech	PWD
Benton County		22			22
	Black Hawk	Cedar Falls	Telemedicine International	OIPTT	FAC
	Black Hawk	Gilbertville	Gilbertville	Landscape Architecture, IDRO	BCOM
	Black Hawk	Hudson	Commissioner-BOA	CRP	TCOM
	Black Hawk	Hudson	Zoning Administrator	CRP	TCOM
	Black Hawk	Waterloo	Deere and Company	College of Engineering	TAC
	Black Hawk	Waterloo	John Deere	College of Engineering	PWD
	Black Hawk	Waterloo	Engineered Products Company	IPRT Company Assistance- NDE	TAC
	Black Hawk	Waterloo	John Deere - Waterloo Foundry	IPRT Company Assistance- NDE	TAC
	Black Hawk	Waterloo	John Deere Waterloo Works	IPRT Company Assistance- Technology Commercialization	TT
	Black Hawk	Waterloo	Waterloo Police Department	Midwest Forensics Resource Center, IPRT	PWD
	Black Hawk	Cedar Falls	Distance Education Students = 1	Brenton Ctr for Ag Instruction	PWD
	Black Hawk	La Porte City	Distance Education Students = 1	Brenton Ctr for Ag Instruction	PWD

	Black Hawk	Raymond	Distance Education Students = 1	Brenton Ctr for Ag Instruction	PWD
	Black Hawk	Waterloo	Distance Education Students = 3	Brenton Ctr for Ag Instruction	PWD
	Black Hawk	Hudson	Distance Education Students = 4	Brenton Ctr for Ag Instruction	PWD
	Black Hawk	Waterloo	East High School	College of Engineering / ABE (PLTW)	OCOM
	Black Hawk	Waterloo	Tyson Foods	Meat Science Extension	PWD
	Black Hawk	Cedar Falls	Stonebridge Ltd.	ISURF	TT
	Black Hawk	Cedar Falls	University of Northern Iowa Facilities Planning Department	Extension CED	PWD
	Black Hawk	Gilbertville	Gilbertville	Landscape Architecture, IDRO	BCOM
	Black Hawk	Hudson	Commissioner-BOA	Extension CED, CRP Extension	TCOM
	Black Hawk	Hudson	NE Iowa Community Development Conference	Extension CED	FAC
	Black Hawk	Hudson	Zoning Administrator	Extension CED, CRP Extension	TCOM
	Black Hawk	Waterloo	Compassion Iowa - Nonprofit Management Academy	Extension CED	PWD
	Black Hawk	Waterloo	NE Iowa Community Development Conference	Extension CED	FAC
	Black Hawk	Waterloo	Waterloo	Extension CED	OCOM/ PWD
	Black Hawk	Waterloo	Young Parents Together Coalition	Extension CED	FAC
	Black Hawk		Black Hawk County	Extension CED	OCOM/ TCO/ PWD
	Black Hawk	All	Compassion Iowa Management Series	Black Hawk County Extension	BAC
	Black Hawk	Waterloo	Opportunity Works Community Service Network	Black Hawk County Extension	FAC
	Black Hawk	Waterloo	Waterloo Chamber of Commerce	Black Hawk County Extension	FAC
	Black Hawk	Waterloo	Public Safety Grant Committee	Black Hawk County Extension	FAC
	Black Hawk	Cedar Falls	Chamber of Commerce Education Committee	Black Hawk County Extension	FAC
	Black Hawk	Waterloo	Cedar Valley's Promise	Black Hawk County Extension	OCOM
	Black Hawk	Evansdale	City of Evansdale	Black Hawk County Extension	OCOM
	Black Hawk	All	County's School Superintendents	Black Hawk County Extension	OCOM
	Black Hawk	Waterloo	Waterloo Community Schools	Black Hawk County Extension	OCOM
	Black Hawk	Waterloo	Emergency Management Team	Black Hawk County Extension	OCOM
	Black Hawk	Waterloo	El Centro Latinoamericano	Black Hawk County Extension	OCOM
	Black Hawk	Waterloo	Operation Threshold	Black Hawk County Extension	OCOM
	Black Hawk	Waterloo	Renato Gonzalez - University of Colima	Black Hawk County Extension	PWD
	Black Hawk	All	Black Hawk County Soil Survey	Black Hawk County Extension	TAC
	Black Hawk	Waterloo	John Deere Waterloo Works	ANR Extension	PWD
	Black Hawk	Waterloo	Applebee's	ISU Extension	PWD
	Black Hawk	Waterloo	Barnes and Noble	ISU Extension	PWD
	Black Hawk	Evansdale	Flying J	ISU Extension	PWD
	Black Hawk	Waterloo	Bertch Cabinet Manufacturing	ISU Extension	TAC
	Black Hawk	Waterloo	Bertch Cabinet Manufacturing	ISUE-CIRAS	TAC
	Black Hawk	Waterloo	Bertch Cabinet Manufacturing	ISUE-CIRAS	TAC
	Black Hawk	Waterloo	Chromavantage	ISUE-CIRAS	BAC
	Black Hawk	Waterloo	Cedar Industries Inc.	ISUE-CIRAS	BAC
	Black Hawk	Waterloo	O'Neal Steel Inc	ISUE-CIRAS	TAC
	Black Hawk		Event in Black Hawk County	ISUE-CIRAS	TAC
	Black Hawk		Event in Black Hawk County	ISUE-CIRAS	TAC
	Black Hawk		Event in Black Hawk County	ISUE-CIRAS	TAC
	Black Hawk	Cedar Falls	Wood Components and Technologies	ISUE-CIRAS	TAC
	Black Hawk	Cedar Falls	City of Cedar Falls	CTRE/CP Tech	PWD
	Black Hawk	Cedar Falls	Power Pavers, Inc.	CTRE/CP Tech	PWD
	Black Hawk	Cedar Falls	UNI	CTRE/CP Tech	PWD
	Black Hawk	Elk Run Heights	United Concrete Inc.	CTRE/CP Tech	PWD
	Black Hawk	Evansdale	City of Evansdale	CTRE/CP Tech	PWD
	Black Hawk	Waterloo	Ament, Inc.	CTRE/CP Tech	PWD
	Black Hawk	Waterloo	Black Hawk Co.	CTRE/CP Tech	PWD
	Black Hawk	Waterloo	Black Hawk Co. Courthouse	CTRE/CP Tech	PWD
	Black Hawk	Waterloo	Cedar Valley Corp.	CTRE/CP Tech	PWD
	Black Hawk	Waterloo	City of Waterloo	CTRE/CP Tech	PWD
	Black Hawk	Waterloo	Earth Tech	CTRE/CP Tech	PWD
	Black Hawk	Waterloo	Iowa DOT	CTRE/CP Tech	PWD
	Black Hawk	Waterloo	Manatt's	CTRE/CP Tech	PWD
	Black Hawk	Cedar Falls	The Institute for Decision Making - The University of Northern Iowa	Industry Relations	BCOM

	Black Hawk	Waterloo	Deere & Company	Virtual Reality Applications Center, IPRT	BAC, TAC, FAC, PWD
	Black Hawk	Cedar Falls	Nutriant, division of Kerry Foods	FSHN	TAC
	Black Hawk	Waterloo	Waterloo Dietetic Association	FSHN	PWD
	Black Hawk	Waterloo	Hawkeye Communtiy College	Agricultural Education and Studies	OCOM
	Black Hawk	Waterloo	Hawkeye Communtiy College	Agricultural Education and Studies	OCOM
	Black Hawk	Waterloo	Family & Children's Council, Waterloo	Johnson County Extension	PWD
	Black Hawk	Waterloo	Waterloo Dietetic Association	Dietetics Internship faculty 4/	PWD
	Black Hawk		Black Hawk County Auditors	Extension CED	OCOM
	Black Hawk		Black Hawk County Auditors	Extension CED	OCOM
	Black Hawk		Silos & Smokestacks National Heritage Area	Extension CED	OCOM
Black Hawk County		80			80
	Boone	Boone	Vibroacoustics Solutions	OIPTT	BAC
	Boone	Boone	Alliant Energy	College of Engineering	BAC
	Boone	Woodward	Woodward Resource Center	College of Engineering	TAC
	Boone	Boone	Boone High School	College of Engineering / ABE (PLTW)	OCOM
	Boone	Boone	British Petroleum	Ag Engineering/Agronomy Farm, ISU	FAC
	Boone	Boone	Distance Education Students = 5	Brenton Ctr for Ag Instruction	PWD
	Boone	Madrid	Distance Education Students = 6	Brenton Ctr for Ag Instruction	PWD
	Boone	Rural Area	United Community School	An Sci -- Microbiology Program	OCOM
	Boone	Woodward	Woodward Granger Community Schools	Agricultural Education and Studies	OCOM
	Boone	Boone	Boone Community Schools	Agricultural Education and Studies	OCOM
	Boone	Boone	Boone	Extension CED	PWD
	Boone	Boone	Boone Co. Hospital Foundation	Extension CED	PWD
	Boone	Boone	Central District Conference, EFCA	Extension CED	PWD
	Boone	Boone	ISU-CFAH	Extension CED	PWD
	Boone	Boone	Scared Heart School/Church	Extension CED	PWD
	Boone		Boone County Auditors	Extension CED	OCOM
	Boone		Boone County	Boone County Extension	FAC
	Boone		Boone County	Boone County Extension	OCOM
	Boone		Boone County	Boone County Extension	OCOM
	Boone		Boone County	Boone County Extension	OCOM
	Boone		Boone County	Boone County Extension	PWD
	Boone		Boone County	Boone County Extension	PWD
	Boone	Boone	Godfather's Pizza	ISU Extension	PWD
	Boone	Boone	Gates Corp	ISUE-CIRAS	TAC
	Boone	Boone	Boone Co.	CTRE/CP Tech	PWD
	Boone	Boone	PowerFilm	Industry Relations	TAC
	Boone	Boone	Vibroacoustic Solutions	Industry Relations	TAC
	Boone		Boone County	Extension CED	PWD
	Boone		Boone County	Extension CED	OCOM/ PWD
	Boone		Silos & Smokestacks National Heritage Area	Extension CED	OCOM
	Boone		United Community School District	CD-DIAL - Sociology Extension	OCOM
Boone County		31			31
	Bremer	Denver	Denver	Landscape Architecture, IDRO	BCOM
	Bremer	Readlyn	Readlyn	Landscape Architecture, IDRO	BCOM
	Bremer	Waverly	Rada Manufacturing Company	IPRT Company Assistance-Materials	TAC
	Bremer	Waverly	United Equipment Accessories, Inc.	IPRT Company Assistance-NDE	TAC
	Bremer	Denver	Denver High School	College of Engineering / ABE (PLTW)	OCOM
	Bremer	Janesville	Distance Education Students = 1	Brenton Ctr for Ag Instruction	PWD
	Bremer	Sumner	Distance Education Students = 1	Brenton Ctr for Ag Instruction	PWD
	Bremer	Waverly	Distance Education Students = 1	Brenton Ctr for Ag Instruction	PWD
	Bremer	Denver	Distance Education Students = 2	Brenton Ctr for Ag Instruction	PWD
	Bremer	Sumner	Sumner Locker & Catering	Meat Science Extension	PWD
	Bremer	Denver	Denver	Landscape Architecture, IDRO	BCOM
	Bremer	Readlyn	Readlyn	Landscape Architecture, IDRO	BCOM
	Bremer	Waverly	NE Iowa Community Development Conference	Extension CED	FAC
	Bremer		Bremer County Auditors	Extension CED	OCOM
	Bremer	Tripoli	beef farms	Robert Tigner	BAC
	Bremer	Sumner	Community Memorial Hospital	ISU Extension	OCOM
	Bremer	Waverly	The Larrabee Center	ISU Extension	OCOM
	Bremer	Sumner	Hillcrest Home	ISU Extension	OCOM
	Bremer	Sumner	Sumner Community Schools	ISU Extension	OCOM

	Bremer	Waverly	G & R Publishing	ISU Extension	PWD
	Bremer	Denver	Schumacher Elevator	ISU Extension	PWD
	Bremer	Plainfield	Environmental Lubricants Manufacturing, Inc.	ISUE-CIRAS	TAC
	Bremer	Waverly	GMT Corp	ISUE-CIRAS	TAC
	Bremer	Waverly	United Equipment Accessories	ISUE-CIRAS	TAC
	Bremer	Waverly	GMT Corp	ISUE-CIRAS	TAC
	Bremer	Janesville	E.B. Spencer Engineering Co.	CTRE/CP Tech	PWD
	Bremer	LeRoy	Luther's Smokehouse	Meat Science Extension	PWD
	Bremer		Bremer County	Extension CED	OCOM
	Bremer		Silos & Smokestacks National Heritage Area	Extension CED	OCOM
Bremer County		29			29
	Buchanan	Jesup	Jesup	Landscape Architecture, IDRO	BCOM
	Buchanan	Independence	John Deere JDPS EE	College of Engineering	PWD
	Buchanan	Rowley	Mark's Locker	Meat Science Extension	PWD
	Buchanan	Jesup	Jesup	Landscape Architecture, IDRO	BCOM
	Buchanan	Jesup	NE Iowa Community Development Conference	Extension CED	FAC
	Buchanan		Silos & Smokestacks National Heritage Area	Extension CED	OCOM
	Buchanan	Independence	Kegler, Kegler & Arend	ISU Extension	PWD
	Buchanan	Independence	Independence Corn By-Products	ISUE-CIRAS	BAC
	Buchanan	Independence	Geater Machining and Mfg Co	ISUE-CIRAS	TAC
	Buchanan	Fairbank	Buchanan Co.	CTRE/CP Tech	PWD
	Buchanan	Independence	Buchanan County EDC	Industry Relations	BCOM
	Buchanan	Independence	Heartland Acres Agribition Center	Buchanan County Extension	BCOM
	Buchanan	All Communities	Buchanan County Health and Safety Team	Buchanan County Extension	OCOM
	Buchanan	All Communities	Independence Area Food Pantry	Buchanan County Extension	OCOM
	Buchanan	All Communities	Pathways Behavioral Services	Buchanan County Extension	OCOM
	Buchanan	Amish Settlement	Amish School System Hazleton Settlement	Buchanan County Extension	OCOM
Buchanan County		16			16
	Buena Vista	Newell	DFS Animal Nutrition	College of Business	BAC
	Buena Vista	Storm Lake	Storm Lake	Landscape Architecture, IDRO	BCOM
	Buena Vista	Storm Lake	GroWind, Inc.	College of Engineering	BAC
	Buena Vista	Storm Lake	Heritage Bank	College of Engineering	FAC
	Buena Vista	Newell	4-H Booster Club	Allee Research Farm, ISU	OCOM
	Buena Vista	Albert City	Ag Partners	Economics, CCUR & others	FAC
	Buena Vista	Alta	Ag Partners L.L.C.	Agricultural & Biosystem Engineering - STIR	TAC
	Buena Vista	Newell	BV County Regional Hospital	Allee Research Farm, ISU	OCOM
	Buena Vista	Newell	BV Special Swine Project	ISU Extension	OCOM
	Buena Vista	Newell	Corn Grower's Association	Allee Research Farm, ISU	FAC
	Buena Vista	Alta	Distance Education Students = 2	Brenton Ctr for Ag Instruction	PWD
	Buena Vista	Marathon	Distance Education Students = 3	Brenton Ctr for Ag Instruction	PWD
	Buena Vista	Newell	Newell Historic Society	Allee Research Farm, ISU	OCOM, FAC
	Buena Vista	Newell	Newell/Fonda School Dist	Allee Research Farm, ISU	OCOM
	Buena Vista	Rembrandt	Rembrandt Enterprises Inc	Animal Science-Bregendahl	TAC
	Buena Vista	Storm Lake	Sara Lee Foods	Meat Science Extension	PWD
	Buena Vista	Storm Lake	Tyson Foods	Meat Science Extension	PWD
	Buena Vista	Albert City	Ag Partners	Economics, CCUR & others	FAC
	Buena Vista	Alta	Alta	Extension CED	OCOM
	Buena Vista	Alta	Tri-Co Health Network	Extension CED	PWD
	Buena Vista	Rembrandt	Rembrandt	Extension CED	OCOM
	Buena Vista	Sioux Rapids	Sioux Rapids	Extension CED	OCOM
	Buena Vista	Storm Lake	Storm Lake	Landscape Architecture, IDRO	BCOM
	Buena Vista		Livestock producers and regulators	Extension CED	TCOM
	Buena Vista	Storm Lake	Prairie Lakes Area Education Association	4-H Operation: Military Kids	OCOM
	Buena Vista		24 election officials certified	CED	OCOM
	Buena Vista	Storm Lake	Kuehl & Payer Ltd.	CTRE/CP Tech	PWD
	Buena Vista	Albert City	Ag Partners	Economics, CCUR & others	FAC
	Buena Vista		24 election officials certified	Extension CED	OCOM
	Buena Vista		Buena Vista County Auditors	Extension CED	OCOM
Buena Vista County		30			30
	Butler	Aplington	Aplington	Landscape Architecture, IDRO	BCOM
	Butler	Parkersburg	Parkersburg	Landscape Architecture, IDRO	BCOM
	Butler	Shell Rock	Shell Rock	Landscape Architecture, IDRO	BCOM
	Butler	Parkersburg	Distance Education Students = 1	Brenton Ctr for Ag Instruction	PWD

	Butler	Greene	Distance Education Students = 3	Brenton Ctr for Ag Instruction	PWD
	Butler	Aplington	Aplington	Landscape Architecture, IDRO	BCOM
	Butler	Aplington	NE Iowa Community Development Conference	Extension CED	FAC
	Butler	Parkersburg	NE Iowa Community Development Conference	Extension CED	FAC
	Butler	Parkersburg	Parkersburg	Landscape Architecture, IDRO	BCOM
	Butler	Shell Rock	Shell Rock	Landscape Architecture, IDRO	BCOM
	Butler		Silos & Smokestacks National Heritage Area	Extension CED	OCOM
	Butler	Allison	Allison	Butler County Extension	BCOM
	Butler	Allison	community groups on Bioeconomy-2X	Robert Tigner	FAC
	Butler	Dumont	Dumont Telephone	ISU Extension	PWD
	Butler	Allison	Butler - Grundy County REC	Industry Relations	BCOM
	Butler	Butler County	Butler County Resource Development Group	Butler County Extension	FAC
Butler County		16			16
	Butler		Butler County Auditors	Extension CED	OCOM
Butler County		1			1
	Calhoun	Somers	CAI Students	Crop Advisor Institute	PWD
	Calhoun	Pomeroy	Distance Education Students = 4	Brenton Ctr for Ag Instruction	PWD
	Calhoun	Farnhamville	Farnhamville Coop	ABE/IGQI	BAC, TAC
	Calhoun	Lake City	Lake City Locker	Meat Science Extension	PWD
	Calhoun	Farnhamville	Northwest Grape Growers Assn	Midwest Grape & Wine Industry Institute	FAC
	Calhoun	Rockwell City	Twin Lakes Steaks	Webster Co. Extension - CEED	BAC
	Calhoun	Lake City	Lake City Horizons	ISU Extension	OCOM
	Calhoun	Farnhamville	Farmers Cooperative Co	ISUE-CIRAS	TAC
	Calhoun	Rockwell City	Calhoun/Sac Co.	CTRE/CP Tech	PWD
	Calhoun	Farnhamville	Farnhamville Coop	ABE/IGQI	BAC
	Calhoun	Farnhamville	Farnhamville Coop	ABE/IGQI	TAC
	Calhoun	Farnhamville	Business Unit info & planning	Greene County Extension	FAC, BAC
	Calhoun	Various	Wall Street Journal	ABE/IGQI	FAC
	Calhoun	Yetter	Yetter Locker	Meat Science Extension	PWD
	Calhoun		Calhoun County Auditors	Extension CED	OCOM
Calhoun County		15			15
	Carroll	Templeton	Accusteel Inc	College of Business	BAC
	Carroll	Carroll	Goodrich Turbine	College of Business	PWD
	Carroll	Manning	Asst. County Attorney	CRP	TCOM
	Carroll	Manning	City Manager	CRP	TCOM
	Carroll	Ralston	Renewable Energy Group	College of Engineering	FAC
	Carroll	Ralston	West Central	College of Engineering	TAC
	Carroll	Ralston	West Central Cooperative	College of Engineering	TAC
	Carroll	Ralston	West Central Cooperative	Center for Catalysis, IPRT	TT
	Carroll	Manning	Distance Education Students = 1	Brenton Ctr for Ag Instruction	PWD
	Carroll	Carroll	Distance Education Students = 2	Brenton Ctr for Ag Instruction	PWD
	Carroll	Carroll	Farmland Foods	Meat Science Extension	PWD
	Carroll	Carroll	Mike's Meats	Meat Science Extension	PWD
	Carroll	Ralston	Renewable Energy Group	CCUR	FAC
	Carroll	Carroll	St Anthony Regional Hospital	FSHN	PWD
	Carroll	Ralston	West Central Cooperative	CCUR	FAC, TAC, TT
	Carroll	Ralston	Renewable Energy Group	CCUR	FAC
	Carroll	Ralston	West Central Cooperative	CCUR	FAC, TAC, TT
	Carroll	Ralston	West Central Cooperative	ISURF	TT
	Carroll	Carroll	United Way of Carroll	Extension CED	PWD
	Carroll	Manning	Asst. County Attorney	Extension CED, CRP Extension	TCOM
	Carroll	Manning	City Manager	Extension CED, CRP Extension	TCOM
	Carroll		Carroll County	Extension CED	TAC; PWD
	Carroll		Farmers Cooperative	Extension CED	BAC
	Carroll	Wiley	Santa Maria Winery	Midwest Grape & Wine Industry Institute	BAC
	Carroll	Carroll	Child Care Providers	ISU Extension	PWD
	Carroll	Carroll	New Opportunities	ISU Extension	PWD
	Carroll	Ralston	West Central Cooperative	ISUE-CIRAS	FAC
	Carroll	Ralston	West Central Cooperative	ISUE-CIRAS	TAC
	Carroll	Ralston	West Central Cooperative	ISUE-CIRAS	TAC
	Carroll		12 small businesses	CED (Access eCommerce)	BAC
	Carroll	Carroll	ACTS Inc.	ISU Carroll County Extension	BAC
	Carroll	Carroll	Brown & Associates	ISU Carroll County Extension	BAC
	Carroll	Carroll	EnviroWaste Technology Inc.	ISU Carroll County Extension	BAC
	Carroll	Carroll	Jan Abbe Interiors	ISU Carroll County Extension	BAC
	Carroll	Carroll	New Hope Village	ISU Carroll County Extension	BAC

	Carroll	Carroll	New Opportunities	Families Extension	PWD
	Carroll	Carroll	No-Burn of Central Iowa	ISU Carroll County Extension	BAC
	Carroll	Carroll	Old Alley Gallery	ISU Carroll County Extension	BAC
	Carroll	Carroll	Smiley Worms	ISU Carroll County Extension	BAC
	Carroll	Carroll	Snare Shop	ISU Carroll County Extension	BAC
	Carroll	Carroll	Sound Solutions	ISU Carroll County Extension	BAC
	Carroll	Manning	Struve Labs. Inc.	ISU Carroll County Extension	BAC
	Carroll	Carroll	The Flower Garden	ISU Carroll County Extension	BAC
	Carroll	Carroll	Well Done Menus	ISU Carroll County Extension	BAC
	Carroll	Carroll	City of Carroll	CTRE/CP Tech	PWD
	Carroll	Carroll	JEO	CTRE/CP Tech	PWD
	Carroll	Ralston	Renewable Energy Group	OBP	BAC, FAC, TAC
	Carroll	Ralston	Renewable Energy Group	CCUR	FAC
	Carroll	Ralston	West Central Cooperative	CCUR	FAC, TAC, TT
	Carroll	Carroll	St Anthony Regional Hospital	Dietetics Internship faculty 6/	PWD
	Carroll		12 small businesses	Extension CED	BAC
	Carroll		Carroll County Auditors	Extension CED	OCOM
	Carroll		Rural Development Resource Center: Grow Iowa Fund; Wallace Fund; Southwest Iowa Coalition	Extension CED	BAC/ TCOM/ FAC/ BCOM
	Carroll		Rural Development Summit	Extension CED	FAC
Carroll County		54			54
	Cass	Griswold	Board of Supervisors	CRP	TCOM
	Cass	Griswold	Engineer	CRP	TCOM
	Cass	Griswold	Planning & Zoning Board Member	CRP	TCOM
	Cass	Griswold	Planning & Zoning Commission	CRP	TCOM
	Cass	Griswold	Planning Admin. Assistant	CRP	TCOM
	Cass	Atlantic	Global Horizons	College of Engineering	BCOM,BAC
	Cass	Atlantic	Cass/Atlantic Development Corporation	College of Engineering	BCOM
	Cass	Atlantic	Precision Manufacturing	College of Engineering	TAC
	Cass	Marne	Arnie's Artworks	College of Engineering	BAC
	Cass	Atlantic	MAHLE Engine Components USA, Inc.	IPRT Company Assistance-NDE	TAC
	Cass	Anita	Anita Meats	Meat Science Extension	PWD
	Cass	Atlantic	Atlantic Locker	Meat Science Extension	PWD
	Cass	Atlantic	Cass Co. Master Gardeners	Armstrong Research Farm, ISU	TAC
	Cass	Cumberland	Distance Education Students = 1	Brenton Ctr for Ag Instruction	PWD
	Cass	Wiota	Distance Education Students = 2	Brenton Ctr for Ag Instruction	PWD
	Cass	Atlantic	Nex-Gen Biofuels, Inc.	Extension CED	BAC
	Cass	Atlantic	SW Iowa Family Services	CD-DIAL - Sociology Extension	OCOM
	Cass	Griswold	Board of Supervisors	Extension CED, CRP Extension	TCOM
	Cass	Griswold	Community Builders Speculative House	Extension CED	TCOM
	Cass	Griswold	Engineer	Extension CED, CRP Extension	TCOM
	Cass	Griswold	Planning & Zoning Board Member	Extension CED, CRP Extension	TCOM
	Cass	Griswold	Planning & Zoning Commission	Extension CED, CRP Extension	TCOM
	Cass	Griswold	Planning Admin. Assistant	Extension CED, CRP Extension	TCOM
	Cass		Bio-Economy Meeting	Extension CED	FAC
	Cass		Camblin Mechanical, Inc.	Extension CED	FAC/ BCOM
	Cass		Cass County Farm Bureau	Extension CED	FAC/ BCOM
	Cass		Emerald Hills Dairy Consortium	Extension CED	BAC
	Cass		Regional Foods Working Group	Extension CED	BAC
	Cass		Regional Marketing	Extension CED	BCOM
	Cass		Renew Rural Iowa	Extension CED	FAC
	Cass		Rural Development Summit	Extension CED	FAC
	Cass		Southwest Iowa Latino Resource Center	Extension CED	BAC
	Cass	Atlantic	Cass/Atlantic Development Corporation	Cass County Extension	FAC
	Cass	County	P.R.I.D.E. (Cass County Economic Development	Cass County Extension	FAC
	Cass	all communities	Volunteer Income Tax Assistance	ISU Extension	OCOM
	Cass	Atlantic	The Plastic Professionals	ISUE-CIRAS	TAC
	Cass	Atlantic	The Plastic Professionals	ISUE-CIRAS	TAC
	Cass	Lewis	BIOWA Development Association	ISUE-CIRAS	FAC
	Cass	Atlantic	Atlantic Machine and Fabrication	ISUE-CIRAS	BAC
	Cass	Atlantic	Dana Glacier Daido Co	ISUE-CIRAS	TAC
	Cass	Atlantic	Iowa DOT	CTRE/CP Tech	PWD
	Cass	Atlantic	Iowa DOT Materials	CTRE/CP Tech	PWD
	Cass	Atlantic	Snyder & Associates, Inc.	CTRE/CP Tech	PWD
	Cass	Atlantic	Southwest Iowa Concrete Polishing	CTRE/CP Tech	PWD
	Cass	Atlantic	Southwest Iowa Cultivators	NCRCRD	FAC

	Cass	Griswold	Amos Sweet Corn	Armstrong Research Farm, ISU	TAC
	Cass	Lewis	TCSCF Cooperative	Darrell Busby SW IA Beef Specialist	BAC
	Cass	Lewis	Certified Angus Beef & TCSCF Cooperative	Darrell Busby SW IA Beef Specialist	TAC
	Cass		A.M. Cohron & Sons, Inc.	Extension CED	FAC/ BCOM
	Cass		A-Plus Designs	Extension CED	FAC/ BCOM
	Cass		Cass County Auditors	Extension CED	OCOM
	Cass		Cass County Board of Supervisors	Extension CED	FAC/ BCOM
	Cass		Cass-Atlantic Development Corporation	Extension CED	FAC/ BCOM
	Cass		Cass-Atlantic Economic Development; PRIDE (economic development)	Extension CED	BCOM
	Cass		City of Griswold	Extension CED	FAC/ BCOM
	Cass		Multi-State Regional Development	Extension CED	FAC
	Cass		National Center for Appropriate Technology	Extension CED	FAC/ BCOM
	Cass		Rural Development Resource Center	Extension CED	FAC
	Cass		Rural Development Resource Center: Grow Iowa Fund; Wallace Fund; Southwest Iowa Coalition	Extension CED	BAC/ TCOM/ FAC/ BCOM
	Cass		Snyder & Associates, Inc.	Extension CED	FAC/ BCOM
	Cass		Southwest Iowa Coalition	Extension CED	FAC
	Cass		Van Ginkel Law Office	Extension CED	FAC/ BCOM
	Cass		Wallace Foundation for Rural Research & Development	Extension CED	FAC/ BCOM
	Cass		Wells Fargo Bank - Atlantic	Extension CED	FAC/ BCOM
Cass County		64			64
	Cedar	Tipton	Tipton	Landscape Architecture, IDRO	BCOM
	Cedar	Durant	Schumacher Company, LC	IPRT Company Assistance-Materials	TAC
	Cedar	Durant	Durant Locker	Meat Science Extension	PWD
	Cedar	Clarence	IMPA	Meat Science Extension	PWD
	Cedar	Tipton	Tipton Locker	Meat Science Extension	PWD
	Cedar	Tipton	NE Iowa Community Development Conference	Extension CED	FAC
	Cedar	Tipton	Tipton	Landscape Architecture, IDRO	BCOM
	Cedar	Tipton	Tipton Community Visioning	Cedar County Extension	BCOM
	Cedar	Tipton	Cedar County Senior Citizens, Tipton	Johnson County Extension	PWD
	Cedar	Tipton	Prairie Hill	ISU Extension	PWD
	Cedar	Tipton	Dairy Queen	ISU Extension	PWD
	Cedar	Tipton	Cedar Co.	CTRE/CP Tech	PWD
	Cedar	Tipton	Cedar Co. Secondary Roads	CTRE/CP Tech	PWD
	Cedar		Cedar County Auditors	Extension CED	OCOM
	Cedar		Silos & Smokestacks National Heritage Area	Extension CED	OCOM
Cedar County		15			15
	Cerro Gordo	Thornton	Niman Ranch Pork	ISU Extension	OCOM
	Cerro Gordo	Mason City	Metal Craft	College of Engineering	FAC
	Cerro Gordo	Clear Lake	Larson Manufacturing Company	IPRT Company Assistance-Materials	TAC
	Cerro Gordo	Clear Lake	Larson Manufacturing Company	IPRT Company Assistance-NDE	TAC
	Cerro Gordo	Clear Lake	Clear Lake Specialty Products	IPRT Company Assistance-Technology Commercialization	TT
	Cerro Gordo	Mason City	Metalcraft	IPRT Company Assistance-Technology Commercialization	TT
	Cerro Gordo	Mason City	Armour-Eckrich Meats LLC.	Meat Science Extension	PWD
	Cerro Gordo	Mason City	Campbell Industries	CCUR	TAC
	Cerro Gordo	Clear Lake	Distance Education Students = 2	Brenton Ctr for Ag Instruction	PWD
	Cerro Gordo	Mason City	Distance Education Students = 2	Brenton Ctr for Ag Instruction	PWD
	Cerro Gordo	Swaledale	Distance Education Students = 2	Brenton Ctr for Ag Instruction	PWD
	Cerro Gordo	Mason City	Freedom Fuels	Agricultural & Biosystem Engineering - STIR	TAC
	Cerro Gordo	Mason City	Innovative Growers LLC	CCUR	FAC
	Cerro Gordo	Mason City	Mercy Medical Center	FSHN	PWD
	Cerro Gordo	Thornton	Niman Ranch	SEU - CDFIN	TAC
	Cerro Gordo	Mason City	Ralph's Old Fashion Canned Meat	Meat Science Extension	PWD
	Cerro Gordo	Ventura	Ventura Locker	Meat Science Extension	PWD
	Cerro Gordo	Mason City	Northeast Iowa Community College	Agricultural Education and Studies	OCOM
	Cerro Gordo	Mason City	Campbell Industries	CCUR	TAC
	Cerro Gordo	Mason City	Innovative Growers LLC	CCUR	FAC
	Cerro Gordo	Thornton	Niman Ranch	SEU - CDFIN	TAC
	Cerro Gordo	Mason City	NE Iowa Community Development Conference	Extension CED	FAC
	Cerro Gordo		Cerro Gordo County Auditors	Extension CED	OCOM
	Cerro Gordo		Silos & Smokestacks National Heritage Area	Extension CED	OCOM
	Cerro Gordo	Mason City	Mason City Youth Task Force	4-H Youth Development	OCOM
	Cerro Gordo	Mason City	Prairie Adventures Partnership	4-H Youth Development	OCOM
	Cerro Gordo	Rockwell	Rockwell-Swaledale Community School	4-H Youth Development	OCOM

	Cerro Gordo	Clear Lake	National Model T Assoc annual rally	Cerro Gordo County Extension	BAC
	Cerro Gordo	Mason City	Jan Libby Farmers Market NI Assoc	Cerro Gordo County Extension	BAC
	Cerro Gordo	Mason City	North Iowa Coop	Cerro Gordo County Extension	BAC
	Cerro Gordo	Mason City	Chamber of Commerce Ag Committee	Cerro Gordo County Extension	BCOM
	Cerro Gordo	Mason City	Mason City Econ Development	Cerro Gordo County Extension	BCOM
	Cerro Gordo	Mason City	Regional Planning Group North Iowa	Cerro Gordo County Extension	BCOM
	Cerro Gordo	Mason City	Bio Village Group	Cerro Gordo County Extension	BCOM
	Cerro Gordo	Mason City	CARE Advisory Group	Cerro Gordo County Extension	BCOM
	Cerro Gordo	Mason City	Mason City Downtown Association	Cerro Gordo County Extension	BCOM
	Cerro Gordo	Mason City	Chamber of Commerce Ag/City show	Cerro Gordo County Extension	FAC
	Cerro Gordo	Mason City	NI Head Start Annual Mtg Facilitator	Cerro Gordo County Extension	FAC
	Cerro Gordo	Mason City	NIACC	Cerro Gordo County Extension	OCOM
	Cerro Gordo	Mason City	Mason City Econ Develop	Cerro Gordo County Extension	OCOM
	Cerro Gordo	Mason City	NIACC/AEA	Cerro Gordo County Extension	OCOM
	Cerro Gordo	Mason City	United Way	Cerro Gordo County Extension	OCOM
	Cerro Gordo	Mason City	Community Kitchen of North Iowa	Cerro Gordo County Extension	OCOM
	Cerro Gordo	Clear Lake	Central Gardens Association	Cerro Gordo County Extension	OCOM
	Cerro Gordo	Clear Lake	women farm operators and land owners	Robert Tigner	BAC
	Cerro Gordo	Clear Lake	Clear Lake Chamber of Commerce	Midwest Grape & Wine Industry Institute	FAC
	Cerro Gordo	Mason City	Low Income earners and elderly	ISU Extension	OCOM
	Cerro Gordo	Mason City	Early Childhood Center	ISU Extension	OCOM
	Cerro Gordo	Mason City	Transition Advisory Board	ISU Extension	OCOM
	Cerro Gordo	Mason City	Cerro Gordo Public Health	ISU Extension	PWD
	Cerro Gordo	Mason City	Graham Manufacturing Corp	ISUE-CIRAS	TAC
	Cerro Gordo	Mason City	IMI Cornelius Inc	ISUE-CIRAS	TAC
	Cerro Gordo	Mason City	Event in Cerro Gordo County	ISUE-CIRAS	FAC
	Cerro Gordo	Mason City	Metalcraft Inc	ISUE-CIRAS	TAC
	Cerro Gordo	Mason City	Graham Manufacturing Corp	ISUE-CIRAS	TAC
	Cerro Gordo	Mason City	Metalcraft Inc	ISUE-CIRAS	TAC
	Cerro Gordo	Mason City	IMI Cornelius Inc	ISUE-CIRAS	TAC
	Cerro Gordo	Mason City	IMI Cornelius Inc	ISUE-CIRAS	TAC
	Cerro Gordo	Clear Lake	City of Clear Lake	CTRE/CP Tech	PWD
	Cerro Gordo	Clear Lake	Yohn Ready Mix	CTRE/CP Tech	PWD
	Cerro Gordo	Mason City	Cerro Gordo Co.	CTRE/CP Tech	PWD
	Cerro Gordo	Mason City	City of Mason City	CTRE/CP Tech	PWD
	Cerro Gordo	Mason City	Iowa DOT	CTRE/CP Tech	PWD
	Cerro Gordo	Mason City	Iowa DOT District 2	CTRE/CP Tech	PWD
	Cerro Gordo	Mason City	Ryken Engineering	CTRE/CP Tech	PWD
	Cerro Gordo	Mason City	WHKS & Co.	CTRE/CP Tech	PWD
	Cerro Gordo	Mason City	Yaggy Colby Associates	CTRE/CP Tech	PWD
	Cerro Gordo	Mason City	Innovative Growers LLC	CCUR	FAC
	Cerro Gordo	Thornton	Niman Ranch	SEU - CDFIN	TAC
	Cerro Gordo	Mason City	Campbell Industries	CCUR	TAC
	Cerro Gordo	Mason City	Mercy Medical Center	Dietetics Internship faculty 6/	PWD
	Cerro Gordo	Thornton	Niman Ranch	David Stender	BAC
	Cerro Gordo	Clear Lake	Administrator	CRP	TCOM
	Cerro Gordo	Clear Lake	Administrator	Extension CED, CRP Extension	TCOM
	Cerro Gordo	Mason City	Mason City Economic Development Corporation	OIPTT	BCOM
	Cerro Gordo	Mason City	NIACC John Pappajohn Entrepreneurial Center	OIPTT	BCOM
	Cerro Gordo	Mason City	NIACC John Pappajohn Entrepreneurial Center	OIPTT	FAC
Cerro Gordo County		77			77
	Cherokee	Cherokee	Cherokee	Landscape Architecture, IDRO	BCOM
	Cherokee	Cherokee	Advance Foods	Meat Science Extension	PWD
	Cherokee	Cherokee	American Natural Soy/Spectrum Organics	Organic Ag Program (K. Delate; Agronomy & Horticulture)	TAC
	Cherokee	Cherokee	Tyson Prepared Foods	Meat Science Extension	PWD
	Cherokee	Cherokee	Cherokee	Landscape Architecture, IDRO	BCOM
	Cherokee	Cherokee	Valley Vet Center	David Stender	TAC
	Cherokee	Aurelia	Sleezer Fertility Center	David Stender	BAC
	Cherokee	Cherokee	Tyson Retail Deli	ISU Extension	PWD
	Cherokee	Cherokee	Cherokee Co. Public Health	ISU Extension	PWD
	Cherokee	Cherokee	Chronicle Times	ISU Extension	PWD

	Cherokee	Cherokee	Cherokee Public Library	ISU Extension	PWD
	Cherokee	Cherokee	Fareway Food Store	ISU Extension	PWD
	Cherokee	Cherokee	First Cooperative Association	ISU Extension	PWD
	Cherokee	Cherokee	Cherokee Villa	ISU Extension	PWD
	Cherokee	Cherokee	Hy-Vee Food Store	ISU Extension	PWD
	Cherokee	Cherokee	Hy-Vee Warehouse	ISU Extension	PWD
	Cherokee	Cherokee	Lundell Construction Co., Inc	ISU Extension	PWD
	Cherokee	Cherokee	Mental Health Institute	ISU Extension	PWD
	Cherokee	Cherokee	R.J. Thomas Manufacturing	ISU Extension	PWD
	Cherokee	Cherokee	Schoon Construction, Inc	ISU Extension	PWD
	Cherokee	Cherokee	Sioux Valley Memorial Hospital	ISU Extension	PWD
	Cherokee	Cherokee	Plymouth Life	ISU Extension	PWD
	Cherokee	Marcus	Marcus-Meridan-Cleghorn Comm School	ISU Extension	PWD
	Cherokee	Quimby	Simonsen Industries, Inc	ISU Extension	PWD
	Cherokee	Cherokee	Bright Beginnings	ISU Extension	PWD
	Cherokee	Cherokee	Cherokee Regional Medical Center	ISU Extension	PWD
	Cherokee	Marcus	Marcus Bowl	ISU Extension	PWD
	Cherokee	Cherokee	Dairy Queen	ISU Extension	PWD
	Cherokee	Cherokee	Cherokee Bowling Alley	ISU Extension	PWD
	Cherokee	Cherokee	Little Sioux Laser	ISUE-CIRAS	BAC
	Cherokee	Marcus	Sand Seed Service Inc	ISUE-CIRAS	TAC
	Cherokee		24 election officials certified	CED	OCOM
	Cherokee	Cherokee	Bright Beginnings	Family Life Staff	PWD
	Cherokee	Cherokee	Cherokee Bowling Alley	Families Extension	PWD
	Cherokee	Cherokee	Cherokee Regional Medical Center	Families Extension	PWD
	Cherokee	Cherokee	Dairy Queen	Families Extension	PWD
	Cherokee		Emergency Management Agency	Lyon & Osceola Extension	OCOM
	Cherokee	Marcus	Marcus Bowl	Families Extension	PWD
	Cherokee		NW Ia Developers Coalition	Lyon & Osceola Extension	BCOM
	Cherokee		NW Ia Developers Coalition	Lyon & Osceola Extension	FAC
	Cherokee		NW Ia Developers Coalition	Lyon & Osceola Extension	OCOM
	Cherokee	Cherokee	Cherokee Co.	CTRE/CP Tech	PWD
	Cherokee	Cherokee	L and H Engineers	CTRE/CP Tech	PWD
	Cherokee	Cherokee	Cherokee Area Economic Development Corporation	Industry Relations	BCOM
	Cherokee	Cherokee	Cherokee Area Economic Development Corporation	Industry Relations	BCOM
	Cherokee		24 election officials certified	Extension CED	OCOM
	Cherokee		Cherokee County	Extension CED	OCOM
	Cherokee		Cherokee County Auditors	Extension CED	OCOM
Cherokee County	48				48
	Chickasaw	Fredericksburg	Fredericksburg	Landscape Architecture, IDRO	BCOM
	Chickasaw	New Hampton	New Hampton	Landscape Architecture, IDRO	BCOM
	Chickasaw	New Hampton	TriMark Corporation	IPRT Company Assistance-Materials	TAC
	Chickasaw	New Hampton	Sparboe Foods	Meat Science Extension	PWD
	Chickasaw	Fredericksburg	Fredericksburg	Landscape Architecture, IDRO	BCOM
	Chickasaw	New Hampton	New Hampton	Landscape Architecture, IDRO	BCOM
	Chickasaw	county	Chickasaw County Planning Commission	Chickasaw County Extension	BCOM
	Chickasaw	county	All Saints Hwy committee	Chickasaw County Extension	FAC
	Chickasaw	county	Chickasaw County New lowans Committee	Chickasaw County Extension	OCOM
	Chickasaw	New Hampton	dairy farms	Robert Tigner	TAC
	Chickasaw	Fredericksburg	Aveka Manufacturing	ISUE-CIRAS	TAC
	Chickasaw	New Hampton	Chickasaw Co.	CTRE/CP Tech	PWD
	Chickasaw	New Hampton	Iowa DOT	CTRE/CP Tech	PWD
Chickasaw County	13				13
	Chickasaw		Chickasaw County Auditors	Extension CED	OCOM
	Chickasaw		Silos & Smokestacks National Heritage Area	Extension CED	OCOM
Chickasaw County	2				2
	Clarke	Osceola	Clark Comm School	McNay Research Farm, ISU	OCOM
	Clarke	Osceola	Clarke County Development Corporation	OIPTT	BCOM
	Clarke	Osceola	Clarke County Development Corporation	College of Engineering	BCOM
	Clarke	Osceola	Nex-Gen Biofuels, Inc.	Extension CED	BAC
	Clarke		Multi-State Regional Development	Extension CED	FAC
	Clarke		Renew Rural Iowa	Extension CED	FAC
	Clarke		Rural Development Resource Center	Extension CED	FAC
	Clarke		Rural Development Resource Center: Grow Iowa Fund; Wallace Fund; Southwest Iowa Coalition	Extension CED	BAC/ TCOM/ FAC/ BCOM
	Clarke	Osceola	Clarke County - VITA site	Families	OCOM
	Clarke	Osceola	Southern Hills Winery	Midwest Grape & Wine Industry Institute	TAC, BAC
	Clarke	Osceola	Clarke County - VITA site	ISU Extension	OCOM
	Clarke	Murray	Aschan Trucking	ISUE-CIRAS	BAC
	Clarke	Osceola	Clarke County Development Corporation	Industry Relations	BCOM
	Clarke	Osceola	Remington Hybrid Seed Co.	Industry Relations	TAC
	Clarke		Zoning Official	CRP	TCOM

	Clarke		Great Western Bank - Osceola	Extension CED	FAC/ BCOM
	Clarke		Rural Development Summit	Extension CED	FAC
	Clarke		Southwest Iowa Coalition	Extension CED	FAC
	Clarke		Zoning Official	Extension CED, CRP	TCOM
Clarke County		19		Extension	19
	Clay	Spencer	Iowa Aerospace Systems	OIPTT	FAC
	Clay	Spencer	Iowa Aerospace Systems, Inc.	College of Engineering	BAC
	Clay	Spencer	Iowa Lakes Corridor Region	College of Engineering	BCOM
	Clay	Spencer	Northwest Iowa Regional Planning Commission	College of Engineering	BCOM
	Clay	Spencer	CAI Students	Crop Advisor Institute	PWD
	Clay	Spencer	Distance Education Students = 1	Brenton Ctr for Ag Instruction	PWD
	Clay	Peterson	Peterson	Extension CED	OCOM
	Clay	Spencer	NPMA-Council Bluffs	Extension CED	PWD
	Clay	Spencer	Spencer	Extension CED	TCOM
	Clay	Webb	Webb	Extension CED	OCOM
	Clay		48 election officials certified	Extension CED	OCOM
	Clay		Livestock producers and regulators	Extension CED	TCOM
	Clay	Spencer	Spencer Ag Center	David Stender	BAC, TAC
	Clay	Spencer	City of Spencer	ISU Extension	PWD
	Clay	Spencer	Eaton Corporation	ISU Extension	PWD
	Clay	Spencer	KICD/CD 107.7 Radio Station	ISU Extension	PWD
	Clay	Spencer	Spencer Hospital	ISU Extension	PWD
	Clay	Spencer	Spencer YMCA	ISU Extension	PWD
	Clay		Event in Clay County	ISUE-CIRAS	PWD
	Clay	Spencer	Tecton Industries Inc	ISUE-CIRAS	TAC
	Clay		48 election officials certified	CED	OCOM
	Clay	Spencer	Spencer YMCA	Family Life Staff	PWD
	Clay	Spencer	Clay Co.	CTRE/CP Tech	PWD
	Clay	Spencer	Eaton Corporation	College of Business	BAC
	Clay		Clay County Auditors	Extension CED	OCOM
	Clay		Clay County	Extension CED	TCOM
	Clay		County Local Housing Trust Fund	Extension CED	TCOM
Clay County		27			27
	Clayton	Guttenberg	Guttenberg	Landscape Architecture, IDRO	BCOM
	Clayton	Monona	Monona	Landscape Architecture, IDRO	BCOM
	Clayton	Strawberry Point	Strawberry Point	Landscape Architecture, IDRO	BCOM
	Clayton	Upper Explorerland	Building & Zoning	CRP	TCOM
	Clayton	Volga	Volga	Landscape Architecture, IDRO	BCOM
	Clayton	Elkader	E-Ject Systems Engineering	IPRT Company Assistance-Materials	TAC
	Clayton	Elkader	Reference LLC	IPRT Company Assistance-Technology Commercialization	TT
	Clayton	Monona	Distance Education Students = 10	Brenton Ctr for Ag Instruction	PWD
	Clayton	Edgewood	Edgewood Locker	Meat Science Extension	PWD
	Clayton	Guttenberg	Guttenberg	Landscape Architecture, IDRO	BCOM
	Clayton	Guttenberg	NE Iowa Community Development Conference	Extension CED	FAC
	Clayton	Guttenberg	Nex-Gen Biofuels, Inc.	Extension CED	BAC
	Clayton	Marquette	Nex-Gen Biofuels, Inc.	Extension CED	BAC
	Clayton	Monona	Monona	Landscape Architecture, IDRO	BCOM
	Clayton	Monona	NE Iowa Community Development Conference	Extension CED	FAC
	Clayton	Postville	NE Iowa Community Development Conference	Extension CED	FAC
	Clayton	Postville	Nex-Gen Biofuels, Inc.	Extension CED	BAC
	Clayton	Strawberry Point	NE Iowa Community Development Conference	Extension CED	FAC
	Clayton	Strawberry Point	Strawberry Point	Landscape Architecture, IDRO	BCOM
	Clayton	Upper Explorerland	Building & Zoning	Extension CED, CRP Extension	TCOM
	Clayton	Volga	Volga	Landscape Architecture, IDRO	BCOM
	Clayton		NE Iowa Food & Farm Coalition	CD-DIAL - Sociology Extension	BAC
	Clayton		Silos & Smokestacks National Heritage Area	Extension CED	OCOM
	Clayton		Northeast Iowa Food & Farm Coalition	Clayton County Extension	BCOM
	Clayton		Northeast Iowa Food & Fitness Initiative	Clayton County Extension	BCOM
	Clayton	Garnavillo	dairy farms	Robert Tigner	TAC
	Clayton		Event in Clayton County	ISUE-CIRAS	FAC
	Clayton	Elkader	Reference, LLC	ISUE-CIRAS	BAC
	Clayton	Monona	M's Machine and Manufacturing Co	ISUE-CIRAS	TAC
	Clayton	Monona	Monona Wire Corp	ISUE-CIRAS	TAC
	Clayton	Monona	M's Machine and Manufacturing Co	ISUE-CIRAS	TAC
	Clayton	Elkader	Clayton Co.	CTRE/CP Tech	PWD
	Clayton	Elkader	Engineers	CTRE/CP Tech	PWD
	Clayton	Monona	TechSpace	Industry Relations	TAC
	Clayton	Elkader	Reference LLC	Kinesiology/IPRT	TAC

	Clayton	Edgewood	Edgewood	Landscape Architecture, IDRO	BCOM
	Clayton	Buena Vista	Board/Supervisor	CRP	TCOM
	Clayton	Buena Vista	Board/Supervisor	Extension CED, CRP Extension	TCOM
	Clayton	Clayton	Administrator	CRP	TCOM
	Clayton	Elkader	Chairman, Planning & Zoning Committee	CRP	TCOM
	Clayton	Clayton	Administrator	Extension CED, CRP Extension	TCOM
	Clayton	Elkader	Clayton County Secondary Roads	Extension CED	PWD
	Clayton	Elkader	NE Iowa Community Development Conference	Extension CED	FAC
	Clayton		NE Iowa Community Development Conference	Extension CED	FAC
Clayton County		44			44
	Clinton	Clinton	StarrMatica	OIPTT	BAC
	Clinton	Lost Nation	Lost Nation	Landscape Architecture, IDRO	BCOM
	Clinton	Dewitt	Magnaflux	Center for Nondestructive Evaluation, IPRT	TAC
	Clinton	Lost Nation	Lost Nation	Landscape Architecture, IDRO	BCOM
	Clinton		Silos & Smokestacks National Heritage Area	Extension CED	OCOM
	Clinton	Clinton	City of Clinton - Trend Meeting	County Extension	FAC
	Clinton	DeWitt	City of DeWitt - Trend Meeting	County Extension	FAC
	Clinton	Clinton	Horticulture in the Heartland	County Extension	FAC
	Clinton	Clinton	Applebee's	ISU Extension	PWD
	Clinton	Clinton	Aeroflow Coating	ISUE-CIRAS	BAC
	Clinton	De Witt	JRB Co Inc	ISUE-CIRAS	TAC
	Clinton	Clinton	Air Control Inc	ISUE-CIRAS	TAC
	Clinton	Clinton	Bemis Clysar Inc	ISUE-CIRAS	TAC
	Clinton	Clinton	City of Clinton	CTRE/CP Tech	PWD
	Clinton	Clinton	Archer Daniels Midland Company	Industry Relations	TAC
	Clinton	Clinton	Zoning Commission	CRP	TCOM
	Clinton	DeWitt	Planning & Zoning	CRP	TCOM
	Clinton	Clinton	Zoning Commission	Extension CED, CRP Extension	TCOM
	Clinton	DeWitt	DeWitt	Extension CED	TCOM
	Clinton	DeWitt	Planning & Zoning	Extension CED, CRP Extension	TCOM
	Clinton	DeWitt	Farm Credit Services	CEED	BAC
	Clinton	Clinton	Mercy Medical Center	Extension CED	PWD
	Clinton	Clinton	See Life Clearly Foundation	Extension CED	PWD
	Clinton		Clinton County Auditors	Extension CED	OCOM
	Clinton		Extension Council	Extension CED	FAC
Clinton County		25			25
	Crawford	Denison	Agren	College of Business	FAC
	Crawford	Denison	Denison Foods	Meat Science Extension	PWD
	Crawford	Denison	Distance Education Students = 1	Brenton Ctr for Ag Instruction	PWD
	Crawford	Vail	Distance Education Students = 1	Brenton Ctr for Ag Instruction	PWD
	Crawford	Denison	Farmland Foods	Meat Science Extension	PWD
	Crawford	Denison	City of Denison/Denison Housing Authority	Extension CED	BCOM
	Crawford	Denison	Denison	Extension CED	TCOM
	Crawford	Denison	Grow Iowa	Extension CED	BCOM
	Crawford		Crawford County	Extension CED	PWD
	Crawford		Crawford County	Extension CED	PWD
	Crawford	Denison	Tyson Fresh Meats	Darrell Busby SW IA Beef Specialist	BAC
	Crawford	Denison	Amazing Energy	Darrell Busby SW IA Beef Specialist	BAC
	Crawford	Westside	Hugg Manufacturing Inc.	ISUE-CIRAS	TAC
	Crawford	Denison	Bohlmann Inc	ISUE-CIRAS	BAC
	Crawford	Denison	City of Denison/Denison Housing Authority	Communities	BCOM
	Crawford	Denison	Crawford Co.	CTRE/CP Tech	PWD
	Crawford	Charter Oak	Charter Oak/Ute Comm School	Western Research Farm, ISU	OCOM
	Crawford		Rural Development Resource Center	Extension CED	FAC
	Crawford		Rural Development Resource Center: Grow Iowa Fund; Wallace Fund; Southwest Iowa Coalition	Extension CED	BAC/ TCOM/ FAC/ BCOM
	Crawford		Rural Development Summit	Extension CED	FAC
Crawford County		20			20
	Dallas	Perry	Percival Scientific	College of Business	BAC
	Dallas	Waukee	Board of Adjustment Member	CRP	TCOM
	Dallas	Waukee	Hubbell Realty	College of Engineering	PWD
	Dallas	Perry	Wiese Corp.	IPRT Company Assistance-Materials	TAC
	Dallas	Perry	Distance Education Students = 3	Brenton Ctr for Ag Instruction	PWD
	Dallas	Van Meter	Distance Education Students = 4	Brenton Ctr for Ag Instruction	PWD
	Dallas	Adel	Distance Education Students = 5	Brenton Ctr for Ag Instruction	PWD
	Dallas	Dallas Center	Distance Education Students = 7	Brenton Ctr for Ag Instruction	PWD

	Dallas	Dallas Center	Hy-Line International	Animal Science-Dekkers	TAC, PWD
	Dallas	Dallas Center	Hy-Line International	Animal Science-Lamont	TAC
	Dallas	Perry	Mark Seed	Organic Ag Program (K. Delate; Agronomy & Horticulture)	TAC
	Dallas	Waukee	Prairieview H.S.	College of Engineering / ABE (PLTW)	OCOM
	Dallas	Waukee	Waukee High School	College of Engineering / ABE (PLTW)	OCOM
	Dallas	Perry	Mark Seed Co.	ISURF	TT
	Dallas	Adel	Main Street/Adel Partners Chamber	Extension CED	FAC
	Dallas	Adel	Dallas County Road Department Engineer's Office	Extension CED	PWD
	Dallas	DeSoto	City of DeSoto	Extension CED	TCOM
	Dallas	Granger	GRANGER	Extension CED	TCOM
	Dallas	Granger	Granger Economic Development Assoc.	Extension CED	FAC
	Dallas	Granger	Granger	Extension CED	FAC
	Dallas	Van Meter	Peace Corps	Extension CED	PWD
	Dallas	Waukee	Board of Adjustment Member	Extension CED, CRP Extension	TCOM
	Dallas	Woodward	Woodward	Extension CED, Landscape Architecture Extension	OCOM, PWD
	Dallas	Perry	Perry	ISU Extension	OCOM
	Dallas	Adel	Hanny's of Adel	ISU Extension	PWD
	Dallas	Waukee	Legacy Point	ISU Extension	PWD
	Dallas	Woodward	Woodward Resource Center	ISU Extension	PWD
	Dallas	Adel	Iowa Spring Manufacturing Inc	ISUE-CIRAS	TAC
	Dallas	Perry	Wiese Industries Inc	ISUE-CIRAS	TAC
	Dallas	Perry	Wiese Industries Inc	ISUE-CIRAS	TAC
	Dallas	Waukee	ecfirst.com	ISUE-CIRAS	BAC
	Dallas	Adel	Iowa Spring Manufacturing Inc	ISUE-CIRAS	TAC
	Dallas	Dallas Center	Dallas Co.	CTRE/CP Tech	PWD
	Dallas	Waukee	City of Waukee	CTRE/CP Tech	PWD
	Dallas	Waukee	Dallas Co. Engineer	CTRE/CP Tech	PWD
	Dallas	Perry	Iowa Foot Clinic	Kinesiology/IPRT	TAC
	Dallas	Adel	Wells Fargo	College of Engineering	PWD
	Dallas		Dallas County	Extension CED	TCOM
	Dallas		Dallas County Auditors	Extension CED	OCOM
	Dallas		Rural Development Resource Center	Extension CED	FAC
	Dallas		Rural Development Summit	Extension CED	FAC
	Dallas	Granger	City of Granger	Communities	BCOM
	Dallas		Dallas County	County/Ag	BAC
	Dallas	Adel	Bioenegy Downlink-ISU	AG	FAC
Dallas County		44			44
	Davis	Bloomfield	Distance Education Students = 5	Brenton Ctr for Ag Instruction	PWD
	Davis	Bloomfield	Hastings Meat Processing	Meat Science Extension	PWD
	Davis	Bloomfield	Midwest Forestry and Bioproducts	NREM	TAC
	Davis		ADLM Empowerment Board	CD-DIAL - Sociology Extension	OCOM
	Davis	Bloomfield	Industry Specialists, Inc.	ISUE-CIRAS	BAC
	Davis	Bloomfield	City of Bloomfield	CTRE/CP Tech	PWD
	Davis		Davis County Auditors	Extension CED	OCOM
	Davis		Davis County tourism	Extension CED	FAC
Davis County		8			8
	Decatur	Lamoni	Lamoni	Landscape Architecture, IDRO	BCOM/ OCOM
	Decatur	Lamoni	Industrial Hardfacing	IPRT Company Assistance-Technology Commercialization	TT
	Decatur	Van Wert	Distance Education Students = 1	Brenton Ctr for Ag Instruction	PWD
	Decatur	Lamoni	Lamoni	Landscape Architecture, IDRO	BCOM/ OCOM
	Decatur	Lamoni	Lead 2 Day, Lamoni	Johnson County Extension	PWD
	Decatur		Decatur Co. Development Corp.-entrepreneurial committee	Decatur County ISU Extension	BAC
	Decatur		Co. Development, A-Z, Saxton,Inc.,Boyd Const.	Procurement Outreach through CIRAS	BAC
	Decatur	Lamoni	Beautification Committee-Living Roadways/visioning	Decatur County ISU Extension/	FAC
	Decatur	Leon	Little River Watershed Source Protection Plan (in cooperation with watershed sponsors, County Conservation, NRCS, DNR, Rural Water, etc.)	Decatur County ISU Extension	FAC
	Decatur		Co. Development, A-Z, Saxton,Inc.,Boyd Const.	Procurement Outreach through CIRAS	FAC
	Decatur	Leon	Little River Watershed Source Protection Plan	Decatur County ISU Extension	TCOM
	Decatur	Lamoni	A-Z Manufacturing and Sales Co	ISUE-CIRAS	BAC
	Decatur	Davis City	Decatur Co.	CTRE/CP Tech	PWD
	Decatur	Leon	Leon - Decatur Co. Econ Develop Corp	Industry Relations	BCOM
	Decatur		Decatur County Auditors	Extension CED	OCOM
	Decatur		Great Western Bank - Leon	Extension CED	FAC/ BCOM

	Decatur		Multi-State Regional Development	Extension CED	FAC
	Decatur		Renew Rural Iowa	Extension CED	FAC
	Decatur		Rural Development Resource Center	Extension CED	FAC
	Decatur		Rural Development Resource Center: Grow Iowa Fund; Wallace Fund; Southwest Iowa Coalition	Extension CED	BAC/ TCOM/ FAC/ BCOM
	Decatur		Rural Development Summit	Extension CED	FAC
	Decatur		Southwest Iowa Coalition	Extension CED	FAC
Decatur County		22			22
	Delaware	Colesburg	Colesburg	Landscape Architecture, IDRO	BCOM
	Delaware	Hopkinton	Hopkinton	Landscape Architecture, IDRO	BCOM
	Delaware	Manchester	Area teachers	Families Extension	PWD
	Delaware	Edgewood	Distance Education Students = 1	Brenton Ctr for Ag Instruction	PWD
	Delaware	Hopkinton	Distance Education Students = 1	Brenton Ctr for Ag Instruction	PWD
	Delaware	Ryan	Distance Education Students = 1	Brenton Ctr for Ag Instruction	PWD
	Delaware	Colesburg	Colesburg	Landscape Architecture, IDRO	BCOM
	Delaware	Dyersville	Nex-Gen Biofuels, Inc.	Extension CED	BAC
	Delaware	Hopkinton	Hopkinton	Landscape Architecture, IDRO	BCOM
	Delaware	Manchester	NE Iowa Community Development Conference	Extension CED	FAC
	Delaware	Manchester	Manchester; Delaware County; Dyersville	Delaware County CEED	BCOM
	Delaware	Manchester	Manchester Enterprise Zone Commission	Delaware County CEED	FAC
	Delaware	Edgewood	Edgewood Economic Development	ISU Extension	FAC
	Delaware	Earlville	Distinctive Wood Works Inc	ISUE-CIRAS	BAC
	Delaware	Delhi	Bradco McMillen and The Major	ISUE-CIRAS	TAC
	Delaware	Manchester	Gibbs Engineering	CTRE/CP Tech	PWD
	Delaware	Manchester	TeKippe Engineering	CTRE/CP Tech	PWD
	Delaware	Manchester	Area teachers	ISU Extension	PWD
	Delaware	Edgewood	Edgewood	Landscape Architecture, IDRO	BCOM
	Delaware	Manchester	crop farms	Robert Tigner	BAC
	Delaware	Edgewood	Healthy Edge Meats (startup)	Delaware County CEED	BAC - startup
	Delaware		Silos & Smokestacks National Heritage Area	Extension CED	OCOM
Delaware County		22			22
	Des Moines	Burlington	Southeastern Community College	College of Engineering	BCOM
	Des Moines	Burlington	Great River Region	College of Engineering	BCOM
	Des Moines	Burlington	General Electric	College of Engineering	PWD
	Des Moines	Burlington	Winegard	College of Engineering	PWD
	Des Moines	Burlington	Cetek	College of Engineering	PWD
	Des Moines	Burlington	Case New Holland	IPRT Company Assistance-NDE	TAC
	Des Moines	Burlington	Distance Education Students = 2	Brenton Ctr for Ag Instruction	PWD
	Des Moines	Mediapolis	Distance Education Students = 3	Brenton Ctr for Ag Instruction	PWD
	Des Moines	Middletown	Distance Education Students = 3	Brenton Ctr for Ag Instruction	PWD
	Des Moines	Burlington	Southeast Iowa Regional Coalition for Lifestyle Enhancement	Families Extension	PWD
	Des Moines	Burlington	Burlington	Extension CED	TCOM
	Des Moines		Des Moines County Auditors	Extension CED	OCOM
	Des Moines	Burlington	Des Moines County Inventors and Entrepreneurs Club - business start-up training and networking	Des Moines County Extension	BAC
	Des Moines	Burlington	Iowa Workforce Development - Computer skills training	Des Moines County Extension	PWD
	Des Moines	Burlington	Southeast Iowa Community Action	ISU Extension	PWD
	Des Moines	Burlington	Flint Cliffs Manufacturing	ISUE-CIRAS	BAC
	Des Moines	West Burlington	T and T Technologies, Inc.	ISUE-CIRAS	BAC
	Des Moines	Burlington	R L Douglas Contracting	ISUE-CIRAS	BAC
	Des Moines	Burlington	Flint Cliffs Manufacturing	ISUE-CIRAS	BAC
	Des Moines	Burlington	Winegard Co	ISUE-CIRAS	TAC
	Des Moines		Event in Des Moines County	ISUE-CIRAS	TAC
	Des Moines	Burlington	Vista Bakery Inc	ISUE-CIRAS	TAC
	Des Moines	West Burlington	Borghini USA Inc.	ISUE-CIRAS	TAC
	Des Moines	Burlington	City of Burlington	CTRE/CP Tech	PWD
	Des Moines	West Burlington	Ideal Ready Mix	CTRE/CP Tech	PWD
	Des Moines	Burlington	Burlington/West Burlington Chamber of Commerce and Grow Greater Burlington	Industry Relations	BCOM
	Des Moines	Burlington	Southeast Iowa Regional Coalition for Lifestyle Enhancement	ISU Extension	PWD
	Des Moines	Mediapolis	Deputy City Clerk	Extension CED, CRP Extension	TCOM
	Des Moines	Mediapolis	Mediapolis High School	Extension Director	OCOM
	Des Moines	West Burlington	Pies on Parade	Meat Science Extension	PWD
	Des Moines		County Local Housing Trust Fund	Extension CED	TCOM
	Des Moines	West Burlington	Mississippi Valley Human Resource Committee	ISU Extension	PWD
	Des Moines	Burlington	Alcohol and Drug Dependency Center	ISU Extension	PWD
	Des Moines	Burlington	Alcohol and Drug Dependency Center	ISU Extension	PWD
	Des Moines	Burlington	Alcohol and Drug Dependency Center	ISU Extension	PWD
Des Moines County		35			35

	DesMoines	Mediapolis	Deputy City Clerk	CRP	TCOM
DesMoines County	1				1
	Dickinson	Wahpeton	Planning & Zoning Commission	CRP	TCOM
	Dickinson	Wahpeton	Planning & Zoning Commission	Extension CED, CRP Extension	TCOM
	Dickinson	Spirit Lake	AreoPowder Coating	College of Business	FAC
	Dickinson	Arnolds Park	Arnolds Park	Landscape Architecture, IDRO	BCOM; TCOM
	Dickinson	Lake Park	Hardin Coffee Shop	IDRO	TCOM
	Dickinson	Milford	MIDAS Council of Government	CRP	TCOM
	Dickinson	West Okoboji	West Okoboji	Landscape Architecture, IDRO	BCOM
	Dickinson	Spirit Lake	Okoboji Entrepreneurial Institute	College of Engineering	FAC
	Dickinson	Arnolds Park	Arnolds Park	Landscape Architecture, IDRO	BCOM; TCOM
	Dickinson	Lake Park	Hardin Coffee Shop	IDRO	TCOM
	Dickinson	Milford	MIDAS Council of Government	Extension CED, CRP Extension	TCOM
	Dickinson	West Okoboji	West Okoboji	Landscape Architecture, IDRO	BCOM
	Dickinson		Livestock producers and regulators	Extension CED	TCOM
	Dickinson	Milford	Stylecraft	ISU Extension	PWD
	Dickinson	Spirit Lake	Brown Medical Industry	ISU Extension	PWD
	Dickinson	Spirit Lake	Polaris	ISU Extension	PWD
	Dickinson	Spirit Lake	Pure Fishing/Outdoor Technology Group	ISU Extension	PWD
	Dickinson	Spirit Lake	Dickinson Co. Employees	ISU Extension	PWD
	Dickinson	Spirit Lake	Joyful Journeys Daycare	ISU Extension	PWD
	Dickinson	Milford	Kidsville Day Care Inc	ISU Extension	PWD
	Dickinson	Spirit Lake	Lakes Regional Healthcare	ISU Extension	PWD
	Dickinson	Lake Park	Northern Iowa Die Casting Inc	ISUE-CIRAS	TAC
	Dickinson	Spirit Lake	Joyful Journeys Daycare	Family Life Staff	PWD
	Dickinson	Milford	Kidsville Day Care Inc	Family Life Staff	PWD
	Dickinson	Okoboji	Dickinson Co.	CTRE/CP Tech	PWD
	Dickinson	Okoboji	Dickinson Co.	CTRE/CP Tech	PWD
	Dickinson		Dickinson County	Extension CED	TCOM/ PWD
Dickinson County	27				27
	Dubuque	Dubuque	Upper Mississippi Grape Growers Assn	Midwest Grape & Wine Industry Institute	FAC
	Dubuque	Dyersville	Distinctive Woodworks	College of Business	BAC
	Dubuque	Asbury	Senior Planner	CRP	TCOM
	Dubuque	Asbury	Asbury	Landscape Architecture, IDRO	BCOM
	Dubuque	Balltown	Balltown	Landscape Architecture, IDRO	BCOM
	Dubuque	Cascade	Zoning office	CRP	TCOM
	Dubuque	Dubuque	Administrator	CRP	TCOM
	Dubuque	Dubuque	Bi-State Regional Commission	CRP	TCOM
	Dubuque	Dubuque	Planning & Zoning Comm. Member	CRP	TCOM
	Dubuque	Dubuque	Zoning Administrator	CRP	TCOM
	Dubuque	Jackson	Board of Adjustment	CRP	TCOM
	Dubuque	Jackson	Zoning Commissioner	CRP	TCOM
	Dubuque	Johnson	Planning & Zoning Comm. Member	CRP	TCOM
	Dubuque	Dubuque	John Deere	College of Engineering	PWD
	Dubuque	Dubuque	Weitz Sign	IPRT Company Assistance- NDE	TAC
	Dubuque	Farley	CAI Students	Crop Advisor Institute	PWD
	Dubuque	Dubuque	Distance Education Students = 3	Brenton Ctr for Ag Instruction	PWD
	Dubuque	Dubuque	Hauns Specialty Meats	Meat Science Extension	PWD
	Dubuque	Dubuque	Hy-Vee	Meat Science Extension	PWD
	Dubuque	Asbury	Asbury	Landscape Architecture, IDRO	BCOM
	Dubuque	Asbury	Senior Planner	Extension CED, CRP Extension	TCOM
	Dubuque	Balltown	Balltown	Landscape Architecture, IDRO	BCOM
	Dubuque	Cascade	Zoning office	Extension CED, CRP Extension	TCOM
	Dubuque	Dubuque	Administrator	Extension CED, CRP Extension	TCOM
	Dubuque	Dubuque	Bi-State Regional Commission	Extension CED, CRP Extension	TCOM
	Dubuque	Dubuque	Dubuque	Extension CED	TCOM
	Dubuque	Dubuque	East Central Intergovernmental Association	Extension CED	PWD
	Dubuque	Dubuque	NE Iowa Community Development Conference	Extension CED	FAC
	Dubuque	Dubuque	Planning & Zoning Comm. Member	Extension CED, CRP Extension	TCOM
	Dubuque	Dubuque	Zoning Administrator	Extension CED, CRP Extension	TCOM
	Dubuque	Elkader	Chairman, Planning & Zoning Committee	Extension CED, CRP Extension	TCOM
	Dubuque	Jackson	Board of Adjustment	Extension CED, CRP Extension	TCOM

	Dubuque	Jackson	Zoning Commissioner	Extension CED, CRP Extension	TCOM
	Dubuque		Silos & Smokestacks National Heritage Area	Extension CED	OCOM
	Dubuque	Peosta	crop farms	Robert Tigner	BAC
	Dubuque	Dubuque	Operation New View	ISU Extension	OCOM
	Dubuque		Event in Dubuque County	ISUE-CIRAS	FAC
	Dubuque		Event in Dubuque County	ISUE-CIRAS	FAC
	Dubuque	Dubuque	Bradley Iron Works Inc	ISUE-CIRAS	TAC
	Dubuque	Peosta	Premier Tooling Inc	ISUE-CIRAS	TAC
	Dubuque	Peosta	Captive Plastics Inc	ISUE-CIRAS	TAC
	Dubuque	New Vienna	Taylor Construction	ISUE-CIRAS	BAC
	Dubuque	Dubuque	Country Charm Carpet Cleaning and Upholstery	ISUE-CIRAS	BAC
	Dubuque	Dubuque	Frazier Construction Administration, Inc.	ISUE-CIRAS	BAC
	Dubuque	Dyersville	Haasco Ltd.	ISUE-CIRAS	BAC
	Dubuque	Dyersville	Custom Fabrication Machine and Design, Inc.	ISUE-CIRAS	BAC
	Dubuque	Farley	EIMCO Inc	ISUE-CIRAS	BAC
	Dubuque	Dubuque	Higley Industries Inc	ISUE-CIRAS	BAC
	Dubuque	Dubuque	Dubuque Sash and Door Mfg	ISUE-CIRAS	BAC
	Dubuque		Event in Dubuque County	ISUE-CIRAS	TAC
	Dubuque	Dubuque	Morrison Brothers Co (24th and Elm)	ISUE-CIRAS	TAC
	Dubuque	Dubuque	Morrison Brothers Co (24th and Elm)	ISUE-CIRAS	TAC
	Dubuque	Peosta	Trappist Caskets	ISUE-CIRAS	TAC
	Dubuque	Dubuque	Dubuque Sash and Door Mfg	ISUE-CIRAS	TAC
	Dubuque	Dubuque	John Deere - Dubuque Works	ISUE-CIRAS	TAC
	Dubuque	Dubuque	Barnstead International	ISUE-CIRAS	TAC
	Dubuque	Farley	EIMCO Inc	ISUE-CIRAS	TAC
	Dubuque	Dubuque	Dubuque Screw Products Inc	ISUE-CIRAS	TAC
	Dubuque	Dyersville	Lumber Specialties Ltd	ISUE-CIRAS	TAC
	Dubuque		Event in Dubuque County	ISUE-CIRAS	TAC
	Dubuque		Event in Dubuque County	ISUE-CIRAS	TAC
	Dubuque	Dubuque	City of Dubuque	CTRE/CP Tech	PWD
	Dubuque	Dubuque	IIV Engineers & Surveyors PC	CTRE/CP Tech	PWD
	Dubuque	Dyersville	Bard Concrete	CTRE/CP Tech	PWD
	Dubuque	Cascade	Cascade	Landscape Architecture, IDRO	BCOM
	Dubuque		Dubuque County Auditors	Extension CED	OCOM
Dubuque County		66			66
	Emmet	Esterville	Dakota Pack	Meat Science Extension	PWD
	Emmet		Emmet County	Extension CED	PWD
	Emmet	Esterville	Esterville-Lincoln Centrat	ISU Extension	PWD
	Emmet	Esterville	Satern Custom Machining Inc.	ISUE-CIRAS	FAC
	Emmet	Esterville	Satern Custom Machining Inc.	ISUE-CIRAS	BAC
	Emmet	Esterville	Esterville-Lincoln Centrat	Family Life Staff	PWD
	Emmet	Esterville	Jacobson-Westergard & Associates, Inc.	CTRE/CP Tech	PWD
	Emmet		Emmet County Auditors	Extension CED	OCOM
Emmet County		8			8
	Emmett	Armstrong	Distance Education Students = 1	Brenton Ctr for Ag Instruction	PWD
	Emmett	Wallingford	Distance Education Students = 1	Brenton Ctr for Ag Instruction	PWD
Emmett County		2			2
	Fayette	Fayette	Zoning	CRP	TCOM
	Fayette	Oelwein	Planning Commission	CRP	TCOM
	Fayette	Upper Explorerland	Building & Zoning	CRP	TCOM
	Fayette	West Union	West Union	Landscape Architecture, IDRO	BCOM
	Fayette	West Union	Fayette County Economic Development	College of Engineering	BCOM
	Fayette	Oelwein	Distance Education Students = 1	Brenton Ctr for Ag Instruction	PWD
	Fayette	Randalia	Distance Education Students = 2	Brenton Ctr for Ag Instruction	PWD
	Fayette	Oelwein	Oelwein Comm. Schools	College of Engineering / ABE (PLTW)	OCOM
	Fayette	Arlington	PSEOA Distance Education Students = 1	Brenton Ctr for Ag Instruction	PWD
	Fayette	Wadena	Tony's Wadena Locker	Meat Science Extension	PWD
	Fayette	Fayette	Pattison Brothers	ISURF	TT
	Fayette	Fayette	Pattison Brothers	ISURF	TT
	Fayette	Fayette	Pattison Brothers	ISURF	TT
	Fayette	Fayette	Pattison Brothers	ISURF	TT
	Fayette	Fayette	Pattison Brothers	ISURF	TT
	Fayette	Fayette	NE Iowa Community Development Conference	Extension CED	FAC
	Fayette	Fayette	Zoning	Extension CED, CRP Extension	TCOM
	Fayette	Oelwein	NE Iowa Community Development Conference	Extension CED	FAC
	Fayette	Oelwein	Planning Commission	Extension CED, CRP Extension	TCOM
	Fayette	Upper Explorerland	Building & Zoning	Extension CED, CRP Extension	TCOM
	Fayette	West Union	NE Iowa Community Development Conference	Extension CED	FAC
	Fayette	West Union	West Union	Landscape Architecture, IDRO	BCOM
	Fayette		County Local Housing Trust Fund	Extension CED	TCOM

	Fayette		NE Iowa Food & Farm Coalition	CD-DIAL - Sociology Extension	BAC
	Fayette		Silos & Smokestacks National Heritage Area	Extension CED	OCOM
	Fayette		Northeast Iowa Food & Farm Coalition	Fayette County Extension	BCOM
	Fayette		Northeast Iowa Food & Fitness Initiative	Fayette County Extension	BCOM
	Fayette	West Union	Stoney Brook Village	ISU Extension	PWD
	Fayette	West Union	Imperial Roof Systems Co.	ISUE-CIRAS	BAC
	Fayette	Clermont	Fayette Co.	CTRE/CP Tech	PWD
	Fayette		Fayette County	Extension CED	TCOM
Fayette County		32			32
	Floyd	Charles City	Charles City	Landscape Architecture, IDRO	BCOM
	Floyd	Floyd	Floyd	Landscape Architecture, IDRO	BCOM
	Floyd	Floyd	Building Official	CRP	TCOM
	Floyd	Marble Rock	Marble Rock	Landscape Architecture, IDRO	BCOM
	Floyd	Charles City	Farm Bureau	College of Engineering	BCOM
	Floyd	Charles City	Diversified Fastening Systems	IPRT Company Assistance-Materials	TAC
	Floyd	Charles City	Cambrex	Agricultural & Biosystem Engineering - STIR	TAC
	Floyd	Rudd	Distance Education Students = 1	Brenton Ctr for Ag Instruction	PWD
	Floyd	Charles City	Distance Education Students = 3	Brenton Ctr for Ag Instruction	PWD
	Floyd	Floyd	Distance Education Students = 4	Brenton Ctr for Ag Instruction	PWD
	Floyd	Charles city	Floyd County Soil/Water Conservation District	Northeast Research Farm, ISU	FAC
	Floyd	Charles City	Charles City	Landscape Architecture, IDRO	BCOM
	Floyd	Charles City	NE Iowa Community Development Conference	Extension CED	FAC
	Floyd	Floyd	Floyd	Landscape Architecture, IDRO	BCOM
	Floyd	Floyd	Building Official	Extension CED, CRP Extension	TCOM
	Floyd	Marble Rock	Marble Rock	Landscape Architecture, IDRO	BCOM
	Floyd	Nora Springs	NE Iowa Community Development Conference	Extension CED	FAC
	Floyd	Charles City	Filipino Community	ISU Extension	OCOM
	Floyd	Charles City	Diversified Fastening Systems	ISUE-CIRAS	TAC
	Floyd	Charles City	Diversified Fastening Systems	ISUE-CIRAS	TAC
	Floyd	Charles City	Winnebago Industries Inc - Charles City	ISUE-CIRAS	TAC
	Floyd	Charles City	Winnebago Industries Inc - Charles City	ISUE-CIRAS	TAC
	Floyd	Charles City	Winnebago Industries Inc - Charles City	ISUE-CIRAS	TAC
	Floyd	Charles City	Winnebago Industries Inc - Charles City	ISUE-CIRAS	TAC
	Floyd	Charles City	Winnebago Industries Inc - Charles City	ISUE-CIRAS	TAC
	Floyd	Charles City	Winnebago Industries Inc - Charles City	ISUE-CIRAS	TAC
	Floyd	Charles City	Allied Construction	CTRE/CP Tech	PWD
	Floyd	Charles City	City of Charles City	CTRE/CP Tech	PWD
	Floyd	Charles City	Iowa DOT	CTRE/CP Tech	PWD
	Floyd		Floyd County Auditors	Extension CED	OCOM
	Floyd		Silos & Smokestacks National Heritage Area	Extension CED	OCOM
Floyd County		30			30
	Franklin	Hampton	unknown	CRP	TCOM
	Franklin	Hampton	Hampton Hydraulics	IPRT Company Assistance-Materials	TAC
	Franklin	Hampton	Seabee Corporation	IPRT Company Assistance-NDE	TAC
	Franklin	Hampton	Distance Education Students = 1	Brenton Ctr for Ag Instruction	PWD
	Franklin	Alexander	Latham Seed Co	ISURF	TT
	Franklin	Alexander	Latham Seed Co	ISURF	TT
	Franklin	Alexander	Latham Seed Co	ISURF	TT
	Franklin	Hampton	Franklin Co Public Health	Extension CED	PWD
	Franklin	Hampton	unknown	Extension CED, CRP Extension	TCOM
	Franklin	Hampton	Hampton-Dumont Community School	4-H Youth Development	OCOM
	Franklin	Hampton	Franklin Wellness Center	4-H Youth Development	OCOM
	Franklin	Latimer	CAL Community School	4-H Youth Development	OCOM
	Franklin	Latimer	Cub Cadet Childhood Center	4-H Youth Development	OCOM
	Franklin	Hampton	Hampton 2017	Franklin County Extension	BCOM
	Franklin	Hampton	Harriman Nielsen Historic Farm	Franklin County Extension	BCOM
	Franklin	Sheffield	Sukup Manufacturing Co	ISUE-CIRAS	TAC
	Franklin	Hampton	Hampton-Hydraulics LLC	ISUE-CIRAS	TAC
	Franklin	Hampton	Franklin Co.	CTRE/CP Tech	PWD
	Franklin		Silos & Smokestacks National Heritage Area	Extension CED	OCOM
Franklin County		19			19
	Fremont	Hamburg	Green Valley Realty	College of Engineering	BAC
	Fremont	Sidney	Fremont Economic Development Council	College of Engineering	BCOM, BAC
	Fremont	Sidney	Sidney Manufacturing	College of Engineering	TAC
	Fremont	Sidney	Sidney Manufacturing	IPRT Company Assistance-Materials	TAC

	Fremont	Sidney	Distance Education Students = 2	Brenton Ctr for Ag Instruction	PWD
	Fremont		Bateman's Services	Extension CED	FAC/ BCOM
	Fremont		Rural Development Summit	Extension CED	FAC
	Fremont		Southwest Iowa Coalition	Extension CED	FAC
	Fremont	Shenandoah	Great Plains Renewable Energy	Darrell Busby SW IA Beef Specialist	BAC
	Fremont	Sidney	Western IA Grape Growers Assn	Midwest Grape & Wine Industry Institute	FAC
	Fremont	all communities	Volunteer Income Tax Assistance	ISU Extension	OCOM
	Fremont		Emerald Hills Dairy Consortium	Extension CED	BAC
	Fremont		Fremont County Economic Development Corp.	Extension CED	BCOM
	Fremont		Great Western Bank - Hamburg	Extension CED	FAC/ BCOM
	Fremont		Great Western Bank - Sidney	Extension CED	FAC/ BCOM
	Fremont		Multi-State Regional Development	Extension CED	FAC
	Fremont		Nishna Productions	Extension CED	TAC
	Fremont		Regional Marketing	Extension CED	BCOM
	Fremont		Renew Rural Iowa	Extension CED	FAC
	Fremont		Rural Development Resource Center	Extension CED	FAC
	Fremont		Rural Development Resource Center: Grow Iowa Fund; Wallace Fund; Southwest Iowa Coalition	Extension CED	BAC/ TCOM/ FAC/ BCOM
	Fremont		Southwest Iowa Latino Resource Center	Extension CED	BAC
Fremont County		22			22
	Greene	Jefferson	MicroSoy	OIPTT	BAC
	Greene	Jefferson	City Administrator	CRP	TCOM
	Greene	Jefferson	Greene County Development Corp.	CRP	BCOM
	Greene	Jefferson	American Athletic, Inc.	IPRT Company Assistance-Materials	TAC
	Greene	Jefferson	Distance Education Students = 1	Brenton Ctr for Ag Instruction	PWD
	Greene	Jefferson	Micro Soy	CCUR	FAC, TAC
	Greene	Jefferson	Microsoy Corp	Meat Science Extension	PWD
	Greene	Jefferson	Micro Soy	CCUR	FAC
	Greene	Jefferson	City Administrator	Extension CED, CRP Extension	TCOM
	Greene	Jefferson	Greene County Development Corp.	Extension CED, CRP Extension	BCOM
	Greene		Rural Development Resource Center: Grow Iowa Fund; Wallace Fund; Southwest Iowa Coalition	Extension CED	BAC/ TCOM/ FAC/ BCOM
	Greene	Jefferson	DRS Manufacturing	Midwest Grape & Wine Industry Institute	BAC
	Greene	Jefferson	Child Care Providers	ISU Extension	PWD
	Greene	Jefferson	American Athletic Inc	ISUE-CIRAS	TAC
	Greene	Scranton	Scranton Manufacturing Co Inc	ISUE-CIRAS	TAC
	Greene	Scranton	Scranton Manufacturing Co Inc	ISUE-CIRAS	TAC
	Greene	Scranton	Scranton Manufacturing Co Inc	ISUE-CIRAS	TAC
	Greene	Scranton	Scranton Manufacturing Co Inc	ISUE-CIRAS	TAC
	Greene	Scranton	Scranton Manufacturing Co Inc	ISUE-CIRAS	TAC
	Greene	Jefferson	Iowa DOT	CTRE/CP Tech	PWD
	Greene	Jefferson	Micro Soy	CCUR	FAC
	Greene	Jefferson	American Athletics, Inc.	Kinesiology	TAC
	Greene	Jefferson	Distillers Grain Beef Meeting	Greene County Extension	FAC
	Greene		Greene County Auditors	Extension CED	OCOM
	Greene		Midwest Partnership Corporation	Extension CED	FAC/ BCOM
	Greene		Rural Development Summit	Extension CED	FAC
	Greene	Jefferson	City of Jefferson	Greene County Extension	TCOM, BAC, BCOM, FAC
	Greene	Jefferson	Greene Bean Project	Greene County Extension	BAC
	Greene	County	Greene County Community Foundation	Greene County Extension	FAC, BCOM,
	Greene	County	Housing Committee of GCDC	Greene County Extension	FAC, TCOM,
	Greene	County	Community Resource Committee	Greene County Extension	OCOM, FAC
	Greene	Jefferson	Jefferson Telephone Company	Greene County Extension	FAC, BAC
	Greene	County	Greene County Development Corporation	Greene County Extension	FAC
	Greene	County	Bio-Energy meetings & Bio-Fuels Study	Greene County Extension	FAC, BCOM
	Greene	County	Food Systems Mapping & Discussions	Greene County Extension	FAC
	Greene	County	Business Connections/Synchronist	Greene County Extension	FAC, BCOM
	Greene	Jefferson	Corn-Based Ethanol hosting	Greene County Extension	FAC
	Greene	Jefferson	Marketing Committee	Greene County Extension	OCOM, FAC
	Greene	County	Cattlemen conflict resolution	Greene County Extension	FAC
	Greene	Jefferson	Land Value presentation for Peoples	Greene County Extension	BCOM
	Greene	Jefferson	Park & Recreation Satisfaction analysis	Greene County Extension	BAC, FAC
Greene County		41			41
	Grundy	Beaman	Beaman	Landscape Architecture, IDRO	BCOM
	Grundy	Reinbeck	Tama County Township Trustees & Clerks	IDRO	TCOM
	Grundy	Wellsburg	Wellsburg	Landscape Architecture, IDRO	BCOM
	Grundy	Reinbeck	Distance Education Students = 3	Brenton Ctr for Ag Instruction	PWD
	Grundy	Grundy Center	Grundy National Bank	Economics & CCUR	FAC
	Grundy	Wellsburg	Triple T Country Meats	Meat Science Extension	PWD
	Grundy	Grundy Center	Grundy National Bank	Economics & CCUR	FAC
	Grundy	Beaman	Beaman	Landscape Architecture, IDRO	BCOM

	Grundy	Reinbeck	Tama County Township Trustees & Clerks	Extension CED, IDRO	TCOM
	Grundy	Wellsburg	Wellsburg	Landscape Architecture, IDRO	BCOM
	Grundy		Grundy County Auditors	Extension CED	OCOM
	Grundy		Grundy County	Extension CED	OCOM
	Grundy		Silos & Smokestacks National Heritage Area	Extension CED	OCOM
	Grundy	Grundy Center	Grundy County Development Alliance	Grundy County Extension	FAC
	Grundy	Conrad	Green Products Co	ISUE-CIRAS	TAC
	Grundy	Reinbeck	Peterson Contractors, Inc.	CTRE/CP Tech	PWD
	Grundy	Grundy Center	Grundy National Bank	Economics & CCUR	FAC
Grundy County		17			17
	Guthrie	Stuart	Midwest Partnership Corporation	College of Engineering	BCOM, BAC
	Guthrie	Guthrie Center	Distance Education Students = 1	Brenton Ctr for Ag Instruction	PWD
	Guthrie	Stuart	Nex-Gen Biofuels, Inc.	Extension CED	BAC
	Guthrie		Bio-Economy Meeting	Extension CED	FAC
	Guthrie		Extension Council	Extension CED	OCOM
	Guthrie		Multi-State Regional Development	Extension CED	FAC
	Guthrie		Panora COOP Telephone and Cablevision	Extension CED	FAC/ BCOM
	Guthrie		Regional Foods Working Group	Extension CED	BAC
	Guthrie		Renew Rural Iowa	Extension CED	FAC
	Guthrie		Rural Development Summit	Extension CED	FAC
	Guthrie	Panora	Lake Lumber Company	ISUE-CIRAS	TAC
	Guthrie	Panora	Lake Panorama	CTRE/CP Tech	PWD
	Guthrie		Guthrie County Auditors	Extension CED	OCOM
	Guthrie		Midwest Partnership Corporation	Extension CED	FAC/ BCOM
	Guthrie		Rural Development Resource Center	Extension CED	FAC
	Guthrie		Rural Development Resource Center: Grow Iowa Fund; Wallace Fund; Southwest Iowa Coalition	Extension CED	BAC/ TCOM/ FAC/ BCOM
	Guthrie		Southwest Iowa Coalition	Extension CED	FAC
Guthrie County		17			17
	Hamilton	Stratford	Board of Adjustment	CRP	TCOM
	Hamilton	Webster City	Electrolux	College of Engineering	PWD
	Hamilton	Webster City	Electrolux Home Products	IPRT Company Assistance-Materials	TAC
	Hamilton	Webster City	Electrolux Home Products	IPRT Company Assistance-NDE	TAC
	Hamilton	Blairsburg	Chamness Technology	IPRT Company Assistance-Technology Commercialization	TT
	Hamilton	Ellsworth	Safe Soy, LLC	IPRT Company Assistance-Technology Commercialization	TT
	Hamilton	Webster City	Area teachers	Families Extension	PWD
	Hamilton	Kamrar	Distance Education Students = 1	Brenton Ctr for Ag Instruction	PWD
	Hamilton	Stratford	Distance Education Students = 2	Brenton Ctr for Ag Instruction	PWD
	Hamilton	Webster City	Distance Education Students = 4	Brenton Ctr for Ag Instruction	PWD
	Hamilton	Ellsworth	SafeSoy LLC	CCUR	TAC, TT
	Hamilton	Ellsworth	SafeSoy, LLC	ABE/IGQI	TAC
	Hamilton	Stanhope	Stanhope Locker	Meat Science Extension	PWD
	Hamilton	Jewell	W&G Marketing	Meat Science Extension	PWD
	Hamilton	Webster City	Webster City High School	College of Engineering / ABE (PLTW)	OCOM
	Hamilton	Webster City	Webster City Community School	Agricultural Education and Studies	FAC
	Hamilton	Ellsworth	SafeSoy LLC	CCUR	TAC, TT
	Hamilton	Jewell	Lions Club of Iowa International Youth Camp	Extension CED	PWD
	Hamilton	Stratford	Board of Adjustment	Extension CED, CRP Extension	TCOM
	Hamilton	Webster City	Webster City Area Development	Extension CED	PWD
	Hamilton	Webster City	Hamilton County Conservation	Extension CED	PWD
	Hamilton		10 small businesses	Extension CED	BAC
	Hamilton		Hamilton County Auditors	Extension CED	OCOM
	Hamilton		Hamilton County SEED	CD-DIAL - Sociology Extension	OCOM
	Hamilton		Silos & Smokestacks National Heritage Area	Extension CED	OCOM
	Hamilton	County	Hamilton Co. Community Foundation	Greene County Extension	FAC
	Hamilton	Webster City	Citizens of Webster City	Hamilton County Extension	OCOM
	Hamilton	Webster City	Citizens of Hamilton County	Hamilton County Extension	FAC
	Hamilton	Webster City	Enhance Hamilton County Foundation	Hamilton County Extension	BAC/FAC
	Hamilton	Webster City	Dept of Public Health	ISU Extension	PWD
	Hamilton	Webster City	Hamilton Hospital	ISU Extension	PWD
	Hamilton	Webster City	Lighten Up Iowa - Chamber, Many businesses	ISU Extension	PWD
	Hamilton	Webster City	Mary Ann's Specialty Foods Inc	ISUE-CIRAS	TAC
	Hamilton	Webster City	Arrow Acme Inc	ISUE-CIRAS	TAC
	Hamilton	Webster City	Mary Ann's Specialty Foods Inc	ISUE-CIRAS	PWD
	Hamilton	Webster City	Beam Industries	ISUE-CIRAS	TAC
	Hamilton	Webster City	Arrow Acme Inc	ISUE-CIRAS	TAC

	Hamilton		10 small businesses	CED (Access eCommerce)	BAC
	Hamilton	Webster City	BASF Admixtures, Inc.	CTRE/CP Tech	PWD
	Hamilton	Webster City	Hamilton Co.	CTRE/CP Tech	PWD
	Hamilton	Webster City	Hamilton Co. Secondary Roads	CTRE/CP Tech	PWD
	Hamilton	Webster City	Webster City Area Development	Industry Relations	BCOM
	Hamilton	Webster City	City of Webster City	Industry Relations	BCOM
	Hamilton	Ellsworth	SafeSoy Technologies	Industry Relations	TAC
	Hamilton	Ellsworth	SafeSoy, LLC	ABE/IGQI	TAC
	Hamilton	Ellsworth	SafeSoy LLC	CCUR	TAC, TT
	Hamilton	Webster City	Area teachers	ISU Extension	PWD
	Hamilton	Marion	Linn Mar High School	CEED	OCOM
	Hamilton		Hamilton County	Extension CED	OCOM/ TAC
	Hamilton	Webster City	general public - low income population	ISU Extension	OCOM
Hamilton County		50			50
	Hancock	Garner	Director of Membership Services	CRP	TCOM
	Hancock	Garner	Suntron of Iowa	IPRT Company Assistance-NDE	TAC
	Hancock	Corwith	Corwith Locker	Meat Science Extension	PWD
	Hancock	Corwith	Distance Education Students = 1	Brenton Ctr for Ag Instruction	PWD
	Hancock	Garner	Doc's Country Locker	Meat Science Extension	PWD
	Hancock	Garner	Director of Membership Services	Extension CED, CRP Extension	TCOM
	Hancock	Garner	NE Iowa Community Development Conference	Extension CED	FAC
	Hancock		Hancock County Auditors	Extension CED	OCOM
	Hancock		NE Iowa Community Development Conference	Extension CED	FAC
	Hancock	Garner	Garner-Hayfield Community School	4-H Youth Development	OCOM
	Hancock	Garner	Garner Asset Project (GAP)	4-H Youth Development	OCOM
	Hancock	Garner	Midwest Dairyand Livestock Inc	Thoreson, Dale Fld Spec ANR	BCOM
	Hancock	Britt	Original Saw Co	ISUE-CIRAS	TAC
	Hancock	Kanawha	Kiefer Built Inc	ISUE-CIRAS	TAC
	Hancock	Garner	Suntron Iowa Corp	ISUE-CIRAS	BAC
	Hancock	Britt	CPW, LLC	ISUE-CIRAS	BAC
	Hancock	Garner	Stellar Industries Inc	ISUE-CIRAS	BAC
	Hancock	Britt	Iowa DOT	CTRE/CP Tech	PWD
	Hancock	Britt	Iowa DOT, Britt RCE Office	CTRE/CP Tech	PWD
	Hancock	Garner	City of Garner	CTRE/CP Tech	PWD
Hancock County		20			20
	Hardin	Eldora	United Suppliers Inc	College of Business	PWD
	Hardin	Ackley	Ackley	Landscape Architecture, IDRO	BCOM
	Hardin	Eldora	Intern	CRP	TCOM
	Hardin	Eldora	Eldora	Landscape Architecture, IDRO	BCOM
	Hardin	Steamboat Rock	Steamboat Rock	Landscape Architecture, IDRO	BCOM
	Hardin	Alden	Distance Education Students = 1	Brenton Ctr for Ag Instruction	PWD
	Hardin	Iowa Falls	Distance Education Students = 2	Brenton Ctr for Ag Instruction	PWD
	Hardin	Radcliffe	Distance Education Students = 3	Brenton Ctr for Ag Instruction	PWD
	Hardin	Iowa Falls	Hawkeye Renewables	CCUR	FAC
	Hardin	Iowa Falls	Iowa Select Farms	Animal Science and VDPAM	TAC, FAC
	Hardin	Union	ST Meats	Meat Science Extension	PWD
	Hardin	Ackley	Tripple T Specialty Meats	Meat Science Extension	PWD
	Hardin	Iowa Falls	Hawkeye Renewables	CCUR	FAC
	Hardin	Ackley	Ackley	Landscape Architecture, IDRO	BCOM
	Hardin	Ackley	The Presbyterian Village	Extension CED	PWD
	Hardin	Eldora	Eldora	Landscape Architecture, IDRO	BCOM
	Hardin	Eldora	Intern	Extension CED, CRP Extension	TCOM
	Hardin	Steamboat Rock	Steamboat Rock	Landscape Architecture, IDRO	BCOM
	Hardin		Hardin County Auditors	Extension CED	OCOM
	Hardin		Hardin County	Extension CED	TCOM
	Hardin		Silos & Smokestacks National Heritage Area	Extension CED	OCOM
	Hardin	Eldora	Eldora Area Business Development Group	Hardin County Extension	BCOM
	Hardin	Eldora	Hardin County Agricultural Society	Hardin County Extension	OCOM
	Hardin	Iowa Falls	Iowa Falls Parks & Recreation Board	Hardin County Extension	OCOM
	Hardin	Iowa Falls	Child Care Providers	ISU Extension	PWD
	Hardin	Iowa Falls	Times-Citizen Communications	ISUE-CIRAS	TAC
	Hardin	Eldora	United Suppliers Inc	ISUE-CIRAS	TAC
	Hardin	Ackley	Triple T Specialty Meats, Inc	ISUE-CIRAS	BAC
	Hardin	Hubbard	D and B Agro-Systems Ltd.	ISUE-CIRAS	BAC
	Hardin	Iowa Falls	Hawkeye Renewables	OBP	BAC, FAC, TAC
	Hardin	Iowa Falls	Hawkeye Renewables	OBP	BAC, FAC, TAC
	Hardin	Iowa Falls	Hawkeye Renewables	OBP	BAC, FAC, TAC
	Hardin	Iowa Falls	Iowa Falls Area Development Corporation	Industry Relations	BCOM

	Hardin	Iowa Falls	Hawkeye Renewables	OBP	BAC, FAC, TAC
	Hardin	Iowa Falls	Hawkeye Renewables	OBP	BAC, FAC, TAC
	Hardin	Iowa Falls	Hawkeye Renewables	OBP	BAC, FAC, TAC
	Hardin	Iowa Falls	Hawkeye Renewables	CCUR	FAC
	Hardin	Iowa Falls	Ellsworth Community College	Agricultural Education and Studies	OCOM
	Hardin	Iowa Falls	Ellsworth Community College	Agricultural Education and Studies	OCOM
	Hardin	Iowa Falls	Ellsworth College Trustees	Hardin County Extension	OCOM
	Hardin	Iowa Falls	Iowa Falls Chamber/Main Street	Hardin County Extension	FAC
	Hardin	Iowa Falls	Leadership Iowa Falls Experience	Hardin County Extension	FAC
	Hardin	Eldora	City of Eldora	ISU Extension	BCOM
Hardin County		43			43
	Harrison	Woodbine	Greenfield Horizons	ISU Extension	OCOM
	Harrison	Logan	Harrison County Development Corporation	College of Engineering	FAC
	Harrison	Logan	Nex-Gen Biofuels, Inc.	Extension CED	BAC
	Harrison	Woodbine	NPMA-Council Bluffs	Extension CED	PWD
	Harrison		Renew Rural Iowa	Extension CED	FAC
	Harrison	Logan	Day 6 By	CIRAS and Harrison Co Extension	BAC
				Harrison Co. Extension and Commercial Horticulture Field Specialist	
	Harrison	Magnolia	Sawmill Hollow, Inc.		BAC
	Harrison	Mo. Valley	TJ's Future Lawns	Harrison Co. Extension	BAC
	Harrison	Woodbine	E4 Sons	Harrison Co. Extension	BAC
	Harrison	Logan	HCDC	Harrison Co. Extension	BCOM
				Harrison Co. Extension and Communities and Business Field Specialist	
	Harrison	Woodbine	Woodbine Retail Trade		BCOM
	Harrison	Mondamin	HCDC (Mondamin Railhead, LLC)	Harrison Co. Extension	FAC
				CIRAS and Harrison Co Extension	
	Harrison	Logan	Day 6 By		TAC
				Harrison Co. Extension and Commercial Horticulture Field Specialist	
	Harrison	Magnolia	Sawmill Hollow, Inc.		TAC
	Harrison	Woodbine	Woodbine Horizons	ISU Extension	OCOM
	Harrison	all communities	Volunteer Income Tax Assistance	ISU Extension	OCOM
	Harrison		Multi-State Regional Development	Extension CED	FAC
	Harrison		Rural Development Resource Center	Extension CED	FAC
	Harrison		Rural Development Resource Center: Grow Iowa Fund; Wallace Fund; Southwest Iowa Coalition	Extension CED	BAC/ TCOM/ FAC/ BCOM
	Harrison		Rural Development Summit	Extension CED	FAC
	Harrison		Southwest Iowa Coalition	Extension CED	FAC
Harrison County		21			21
	Henry	Mount Pleasant	LINCS Committee	IDRO, Landscape Architecture Landscape , CRP	BCOM
	Henry	Mt. Pleasant	Mt. Pleasant Chamber of Commerce	College of Engineering	BCOM
				Brenton Ctr for Ag Instruction	
	Henry	Winfield	Distance Education Students = 1		PWD
	Henry	Mt. Pleasant	West Liberty Foods	Meat Science Extension	PWD
	Henry	Mount Pleasant	LINCS Committee	IDRO, Landscape Architecture Extension Landscape Extension , CRP Extension	BCOM
				Extension CED	
	Henry	Mt. Pleasant	Mt. Pleasant	Extension CED	OCOM
	Henry	Mount Pleasant	ANNA's Pantry	CEED	BAC
				Community Viz/Communities Extension	
	Henry	Mount Pleasant	Mount Pleasant LINCS		BAC
	Henry	Mount Pleasant	Farmer's Market Growers	CEED	BCOM
	Henry	Mount Pleasant	Chamber of Commerce/Entrepreneurship	CEED	BCOM
	Henry	Mount Pleasant	New Iowans Workforce Development	CEED	BCOM
				ISU Meats-Cordray/SE Extension	
	Henry	Mount Pleasant	Mt. Pleasant Foods		PWD
				Anita Hampton-Local Childcare	
	Henry	Mount Pleasant	Grasshopper Green		PWD
				Anita Hampton-Local Childcare	
	Henry	Winfield	Warmth and Wonders		PWD
				Anita Hampton-Local Childcare	
	Henry	New London	Glow and Grow		PWD
				Anita Hampton-Local Childcare	
	Henry	Mount Pleasant	Owl's Nest		PWD
	Henry	Mount Pleasant	Heatilator	ISUE-CIRAS	TAC
	Henry	Mount Pleasant	Heatilator	ISUE-CIRAS	TAC
	Henry	Mt Pleasant	Fellowship Cup Corp.	Extension CED	PWD
	Henry	Mt. Pleasant	Community Youth Coalition	Extension CED	OCOM
	Henry		County Local Housing Trust Fund	Extension CED	TCOM
	Henry		Henry County	Extension CED	TCOM
	Henry		Henry County tourism	Extension CED	FAC
	Henry	Mt. Pleasant	The Nest	ISU Extension	PWD
Henry County		24			24

	Howard	Elma	Elma	Landscape Architecture, IDRO	BCOM
	Howard	Lime Springs	Lime Springs	Landscape Architecture, IDRO	BCOM
	Howard	Upper Explorerland	Building & Zoning	CRP	TCOM
	Howard	Cresco	Cresco Food Technologies	Meat Science Extension	PWD
	Howard	Elma	Elma Locker & Grocery Inc	Meat Science Extension	PWD
	Howard	Lime Springs	Lime Springs Locker	Meat Science Extension	PWD
	Howard	Protivin	Polashek's Locker	Meat Science Extension	PWD
	Howard	Riceville	Riceville Locker	Meat Science Extension	PWD
	Howard	Cresco	NE Iowa Community Development Conference	Extension CED	FAC
	Howard	Elma	Elma	Landscape Architecture, IDRO	BCOM
	Howard	Lime Springs	Lime Springs	Landscape Architecture, IDRO	BCOM
	Howard	Upper Explorerland	Building & Zoning	Extension CED, CRP Extension	TCOM
	Howard		Howard County Auditors	Extension CED	OCOM
	Howard		Silos & Smokestacks National Heritage Area	Extension CED	OCOM
	Howard		Northeast Iowa Food & Farm Coalition	Howard County Extension	BCOM
	Howard		Northeast Iowa Food & Fitness Initiative	Howard County Extension	BCOM
	Howard	Elma	Elma HORIZONS	Howard County Extension	BCOM
	Howard	Cresco	Cresco Chamber Board	Howard County Extension	FAC
	Howard	Cresco	Community Service Committee	Howard County Extension	FAC
	Howard	Elma	Cedar Valley Produce Auction	ISU Extension & Howard Co. Extension	PWD
	Howard	Cresco	Regional Health Services	ISU Extension	OCOM
	Howard	Cresco	Donaldson Company	ISU Extension	PWD
	Howard	Protivin	Art's Milling	ISU Extension	PWD
	Howard	Elma	Peoples Savings Bank	ISU Extension	PWD
Howard County		24			24
	Howard		NE Iowa Community Development Conference	Extension CED	FAC
	Howard		NE Iowa Food & Farm Coalition	CD-DIAL - Sociology Extension	BAC
Howard County		2			2
	Humboldt	Humboldt	Humboldt County Development Association	OIPTT	BCOM
	Humboldt	Humboldt	Hadar Mfg. Inc.	College of Engineering Center for Nondestructive Evaluation, IPRT	TAC
	Humboldt	Humboldt	Dodgen Industries		TAC
	Humboldt	Dakota City	NE Iowa Community Development Conference	Extension CED	FAC
	Humboldt		NE Iowa Community Development Conference	Extension CED	FAC
	Humboldt	Humboldt	Humboldt County Community Foundation	Humboldt County ISU Extension	FAC
	Humboldt	Humboldt	Mid Iowa Development Conference Committee	Humboldt County ISU Extension	FAC
	Humboldt	Humboldt	Humboldt County Barn Quilts Project	Humboldt County ISU Extension	OCOM
	Humboldt	Humboldt	Humboldt Sheltered Workshop Staff	ISU Extension	PWD
	Humboldt	Humboldt	Greenbelt Power Cooperative	ISU Extension	PWD
	Humboldt	Humboldt	County maintenance and Road Crews	ISU Extension	PWD
	Humboldt	Humboldt	Hog Slot, Inc	ISU Extension	PWD
	Humboldt	Humboldt	Businesses owned/operated by women	ISU Extension	PWD
	Humboldt	Humboldt	Lighten Up Iowa-Humboldt Memorial Hospital	ISU Extension	PWD
	Humboldt	Humboldt	Dodgen Industries Inc	ISUE-CIRAS	TAC
	Humboldt	Gilmore City	Calcium Products Inc	ISUE-CIRAS	TAC
	Humboldt	Humboldt	Dodgen Industries Inc	ISUE-CIRAS	BAC
	Humboldt	Humboldt	Hy-Capacity Engineering and Mfg	ISUE-CIRAS	TAC
	Humboldt	Humboldt	Hy-Capacity Engineering and Mfg	ISUE-CIRAS	TAC
	Humboldt	Humboldt	Hy-Capacity Engineering and Mfg	ISUE-CIRAS	TAC
	Humboldt	Humboldt	Hy-Capacity Engineering and Mfg	ISUE-CIRAS	TAC
	Humboldt	Humboldt	Yacht Club Trailers	ISUE-CIRAS	TAC
	Humboldt	Humboldt	Hy-Capacity Engineering and Mfg	ISUE-CIRAS	TAC
	Humboldt	Humboldt	City of Humboldt	CTRE/CP Tech	PWD
	Humboldt	Humboldt	Humboldt Co. Engineering Office	CTRE/CP Tech	PWD
	Humboldt	Humboldt	Humboldt County Auditors	Extension CED	OCOM
	Humboldt	Humboldt	Humboldt County E-911	Extension CED	PWD
Humboldt County		27			27
	Humboldt	Gowrie	Garden of Dreams Winery	Armstrong Research Farm, ISU	TAC
Humboldt County		1			1
	Ida	Holstein	Pork Peer Group	David Stender	FAC
	Ida	Galva	Galva	Landscape Architecture, IDRO	BCOM
	Ida	Holstein	V-T Industries, Inc.	IPRT Company Assistance-Materials	TAC
	Ida	Holstein	Distance Education Students = 3	Brenton Ctr for Ag Instruction	PWD
	Ida	Holstein	Food Locker Service, Inc.	Meat Science Extension	PWD
	Ida	Holstein	Tiefenthaler Quality Meats	Meat Science Extension	PWD
	Ida	Galva	Galva	Landscape Architecture, IDRO	BCOM
	Ida		Ida County	Extension CED	OCOM
	Ida	Ida Grove	Battle Creek Ida Grove Comm. School Dist	ISU Extension	PWD
	Ida	Holstein	Maple River Energy LLC	ISUE-CIRAS	TAC

	Ida		24 election officials certified	CED	OCOM
	Ida	Ida Grove	Battle Creek Ida Grove Comm. School Dist	Families Extension	PWD
	Ida		Ida County ED Forum	Communities	FAC
	Ida	Ida Grove	GOMACO Corp.	CTRE/CP Tech	PWD
	Ida	Ida Grove	Ida Co.	CTRE/CP Tech	PWD
	Ida	Galva	Quad County Corn Processors	Industry Relations	TAC
	Ida	Galva	Quad County Corn Processors	Industry Relations	TAC
	Ida		24 election officials certified	Extension CED	OCOM
	Ida		Ida County Auditors	Extension CED	OCOM
	Ida		Ida County Community Betterment Foundation	CD-DIAL - Sociology Extension	OCOM
	Ida		Ida County ED Forum	Extension CED	FAC
Ida County		21			21
	Iowa	Amana	Tripletail Ventures, Inc.	OIPTT	BAC
	Iowa	Amana	Tripletail Ventures, Inc.	OIPTT	FAC
	Iowa	Victor	TL Fabrications	College of Business	FAC
	Iowa	Williamsburg	City Clerk/Treasurer	CRP	TCOM
	Iowa	Conroy	Distance Education Students = 1	Brenton Ctr for Ag Instruction	PWD
	Iowa	North English	Modern Coop Tel	NCRCRD	OCOM
	Iowa	Williamsburg	Roehrkasse Meat Co	Meat Science Extension	PWD
	Iowa	Williamsburg	City Clerk/Treasurer	Extension CED, CRP Extension	TCOM
	Iowa		Iowa County Auditors	Extension CED	OCOM
	Iowa	Homestead	The Old Creamery Theatre Co., Homestead	Johnson County Extension	PWD
	Iowa	Williamsburg	Iowa Valley RC&D, Williamsburg	Johnson County Extension	PWD
	Iowa		John Schulte Farm	Extension/Iowa Beef Center	TAC
	Iowa		Iowa Valley RC&D	Extension/Iowa Beef Center	BAC
	Iowa		Price Creek Watershed Project	Extension/Iowa Beef Center	OCOM
	Iowa	Marengo	Fireside Winery	Midwest Grape & Wine Industry Institute	TAC, BAC
	Iowa	South Amana	Iowa Co.	CTRE/CP Tech	PWD
	Iowa	South Amana	Wendler Engineering & Construction	CTRE/CP Tech	PWD
	Iowa		Iowa County tourism	Extension CED	FAC
	Iowa		Silos & Smokestacks National Heritage Area	Extension CED	OCOM
Iowa County		19			19
	Jackson	Preston	Iowa Grape Vines Juice Facility	Midwest Grape & Wine Industry Institute	BAC
	Jackson	Bellevue	Iowa Healthy Edge Meats	OIPTT	BAC
	Jackson	Maquoketa	Precision Pulley & Idler	IPRT Company Assistance-NDE	TAC
	Jackson	Monmouth	Distance Education Students = 2	Brenton Ctr for Ag Instruction	PWD
	Jackson	Miles	Scouties Pizza	Meat Science Extension	PWD
	Jackson	Preston	Preston Community Schools	Agricultural Education and Studies	OCOM
	Jackson		Silos & Smokestacks National Heritage Area	Extension CED	OCOM
	Jackson	Maquoketa	Jackson County	ISUE Jackson County	FAC
	Jackson	Maquoketa	Jackson County Emergency Management	ISUE Jackson County	OCOM
	Jackson	Maquoketa	City of Maquoketa	ISUE Jackson County	OCOM
	Jackson	Preston	Preston Community Schools	ISUE Jackson County	OCOM
	Jackson	Maquoketa	Maquoketa Community School District	ISUE Jackson County	OCOM
	Jackson	Maquoketa	KMAQ Radio Station	ISU Extension	PWD
	Jackson		Event in Jackson County	ISUE-CIRAS	FAC
	Jackson	Bellevue	City of Bellevue	CTRE/CP Tech	PWD
	Jackson	Bellevue	City of Bellevue	CTRE/CP Tech	PWD
Jackson County		16			16
	Jasper	Monroe	City Administrator	CRP	TCOM
	Jasper	Sully	Co-Line Welding, Inc.	IPRT Company Assistance-NDE	TAC
	Jasper	Reasnor	Distance Education Students = 1	Brenton Ctr for Ag Instruction	PWD
	Jasper	Sully	Distance Education Students = 2	Brenton Ctr for Ag Instruction	PWD
	Jasper	Newton	Distance Education Students = 4	Brenton Ctr for Ag Instruction	PWD
	Jasper	Reasnor	PSEOA Distance Education Students = 1	Brenton Ctr for Ag Instruction	PWD
	Jasper	Monroe	City Administrator	Extension CED, CRP Extension	TCOM
	Jasper	Newton	Central Iowa Payroll	Extension CED	PWD
	Jasper	Newton	former Maytag employees	Extension CED	BCOM
	Jasper	Newton	NE Iowa Community Development Conference	Extension CED	FAC
	Jasper	Newton	Newton	Extension CED	TCOM/ TAC
	Jasper	Newton	Newton Community Ed. Foundation	Extension CED	PWD
	Jasper		Jasper County	Extension CED	TCOM
	Jasper	Newton	Maytag Engineers	Jasper County Office	BAC
	Jasper	Newton	Newton Development Corporation	Jasper County Office	FAC
	Jasper	Newton	Newton Chamber of Commerce	Jasper County Office	FAC
	Jasper	Newton	Newton Transformation Council	Jasper County Office	FAC
	Jasper	Newton	Entrepreneurial Cluster Group	Jasper County Office	BAC

	Jasper	Newton	McDonalds of Newton	ISU Extension	PWD
	Jasper		Event in Jasper County	ISUE-CIRAS	BAC
	Jasper	Prairie City	Moore Machining and Mfg	ISUE-CIRAS	BAC
	Jasper	Sully	Co-Line Welding Inc	ISUE-CIRAS	TAC
	Jasper	Newton	Jasper Co.	CTRE/CP Tech	PWD
	Jasper	Newton	Johnstone & Assoc.	CTRE/CP Tech	PWD
	Jasper	Newton	Jasper County Supervisor	Industry Relations	BCOM
	Jasper	Newton	Newton Transfortation Council	College of Engineering	BCOM
	Jasper	Newton	Whirlpool Corporation	College of Engineering	TAC
	Jasper	Newton	Springboard Engineering	College of Engineering	TAC
	Jasper	Newton	JEDCO	College of Engineering	BCOM
	Jasper	Newton	City of Newton	College of Engineering	BCOM
	Jasper	Newton	Maytag	College of Engineering	PWD
	Jasper	Newton	Federal Home Loan Bank Des Moines	College of Engineering	PWD
	Jasper		25 entrepreneurs	Extension CED	BAC
	Jasper		Silos & Smokestacks National Heritage Area	Extension CED	OCOM
Jasper County		34			34
	Jefferson	Fairfield	Joel Health Industries Inc	OIPTT	BAC
	Jefferson	Fairfield	Freedom 360	OIPTT	BAC
	Jefferson	Fairfield	City Council	CRP	TCOM
	Jefferson	Packwood	CAI Students	Crop Advisor Institute	PWD
	Jefferson	Libertyville	Distance Education Students = 1	Brenton Ctr for Ag Instruction	PWD
	Jefferson	Lockridge	Distance Education Students = 1	Brenton Ctr for Ag Instruction	PWD
	Jefferson	Fairfield	Distance Education Students = 3	Brenton Ctr for Ag Instruction	PWD
	Jefferson	Packwood	Packwood Locker	Meat Science Extension	PWD
	Jefferson	Fairfield	PSEOA Distance Education Students = 5	Brenton Ctr for Ag Instruction	PWD
	Jefferson	Pekin	Pekin Community School	Agricultural Education and Studies	FAC
	Jefferson	Fairfield	4-H Youth	Extension CED	OCOM
	Jefferson	Fairfield	City Council	Extension CED, CRP Extension	TCOM
	Jefferson	Batavia	City of Batavia	Jefferson County Extension	OCOM
	Jefferson	Packwood	City of Packwood	Jefferson County Extension	OCOM
	Jefferson	Fairfield	City of Fairfield	Jefferson County Extension	OCOM
	Jefferson	Fairfield	Jefferson County Trails Council	Jefferson County Extension	OCOM
	Jefferson	Fairfield	Name	ISU Extension	TAC
	Jefferson	Fairfield	Harper Brush Works	ISUE-CIRAS	TAC
	Jefferson	Fairfield	Harper Brush Works	ISUE-CIRAS	BAC
	Jefferson	Fairfield	French-Reneker Associates, Inc.	CTRE/CP Tech	PWD
	Jefferson	Fairfield	Iowa DOT	CTRE/CP Tech	PWD
	Jefferson		Jefferson County tourism	Extension CED	FAC
Jefferson County		22			22
	Johnson	Coralville	Integrated DNA Technologies, Inc.	OIPTT	BAC
	Johnson	Iowa City	University of Iowa SBDC	OIPTT	BCOM
	Johnson	Iowa City	West Wind Educational Policy	OIPTT	FAC
	Johnson	Iowa City	Ramaanchar Technologies, Inc.	OIPTT	BAC
	Johnson	Iowa City	Bio::Neos	OIPTT	BAC
	Johnson	Iowa City	Cyber-Anatomy	OIPTT	BAC
	Johnson	Iowa City	University of Iowa Technology Innovation Center	OIPTT	FAC
	Johnson	Coralville	Innovative Software Engineering	OIPTT	FAC
	Johnson	Iowa City	The Thomas Group	OIPTT	FAC
	Johnson	Iowa City	InnoMatix, LLC	OIPTT	FAC
	Johnson	Iowa City	Componica	OIPTT	FAC
	Johnson	Iowa City	ASL Analytical	OIPTT	FAC
	Johnson	Iowa City	National Genecular Institute	OIPTT	FAC
	Johnson	Coralville	Integrated DNA Technologies, Inc.	OIPTT	FAC
	Johnson	Lone Tree	Lone Tree	Landscape Architecture, IDRO	BCOM
	Johnson	Iowa City	ACT	College of Engineering	BAC
	Johnson	Iowa City	Pfizer	College of Engineering	FAC
	Johnson	Coralville	Global Reach Internet Productions	College of Engineering	PWD
	Johnson	North Liberty	Primus Telecommunications	College of Engineering	PWD
	Johnson	Iowa City	Oral B Laboratories	IPRT Company Assistance-Materials	TAC
	Johnson	Iowa City	Asoyia	CCUR and FSHN	FAC
	Johnson	Tiffin	Clear Creek Amana High School	College of Engineering / ABE (PLTW)	OCOM
	Johnson	Coralville	Distance Education Students = 4	Brenton Ctr for Ag Instruction	PWD
	Johnson	Iowa City	Distance Education Students = 4	Brenton Ctr for Ag Instruction	PWD
	Johnson	North Liberty	Distance Education Students = 4	Brenton Ctr for Ag Instruction	PWD
	Johnson	Iowa City	West High School	College of Engineering / ABE (PLTW)	OCOM
	Johnson	Iowa City	Asoyia	CCUR	FAC

	Johnson	Iowa City	Shelter House Community Shelter and Transition Services, IC	Johnson County Extension	PWD
	Johnson	Iowa City	University of Iowa Foundation, IC	Johnson County Extension	PWD
	Johnson	Iowa City	ACT	Johnson County Extension	PWD
	Johnson	Coralville	Barnes and Noble Cafe Manager	ISU Extension	PWD
	Johnson	Tiffin	Flying F Biofuels	ISUE-CIRAS	FAC
	Johnson	Iowa City	Keil's Maintenance, Inc.	ISUE-CIRAS	BAC
	Johnson	Iowa City	Moore Wallace Inc - Iowa City	ISUE-CIRAS	TAC
	Johnson	Iowa City	Moore Wallace Inc - Iowa City	ISUE-CIRAS	TAC
	Johnson	North Liberty	Centro Inc	ISUE-CIRAS	TAC
	Johnson	Coralville	City of Coralville	CTRE/CP Tech	PWD
	Johnson	Coralville	Hawkeye Ready Mix, Inc.	CTRE/CP Tech	PWD
	Johnson	Coralville	Shoemaker & Haaland	CTRE/CP Tech	PWD
	Johnson	Iowa City	City of Iowa City	CTRE/CP Tech	PWD
	Johnson	Iowa City	City of Marion	CTRE/CP Tech	PWD
	Johnson	Iowa City	Continental Cement	CTRE/CP Tech	PWD
	Johnson	Iowa City	Harris Company	CTRE/CP Tech	PWD
	Johnson	Iowa City	Iowa Concrete Paving	CTRE/CP Tech	PWD
	Johnson	Iowa City	Iowa DOT	CTRE/CP Tech	PWD
	Johnson	Iowa City	Johnson Co.	CTRE/CP Tech	PWD
	Johnson	Iowa City	Johnson Co. Secodary Roads	CTRE/CP Tech	PWD
	Johnson	Iowa City	MMS Consultants	CTRE/CP Tech	PWD
	Johnson	Iowa City	Shive-Hattery	CTRE/CP Tech	PWD
	Johnson	Iowa City	Streb Construction Co., Inc.	CTRE/CP Tech	PWD
	Johnson	Iowa City	University of Iowa	CTRE/CP Tech	PWD
	Johnson	North Liberty	City of North Liberty	CTRE/CP Tech	PWD
	Johnson	Iowa City	University of Iowa	Industry Relations	BCOM
	Johnson	Iowa City	Cellular Engineering Technologies	Industry Relations	TAC
	Johnson	Iowa City	Asoyia	CCUR	FAC
	Johnson			Linn and Johnson Co. Extension	OCOM
	Johnson	Iowa City	University of Iowa, various faculty	OIPTT	BAC
	Johnson		Kent Park Masterplan	Landscape Architecture	BCOM
	Johnson		Johnson County Conservation Board	Landscape Architecture IDRO	TCOM
	Johnson		County Local Housing Trust Fund	Extension CED	TCOM
	Johnson		Johnson County	Extension CED	TCOM
	Johnson		Johnson County Conservation Board	Landscape Architecture Extension, IDRO	TCOM
	Johnson		Kent Park Masterplan	Extension CED, Landscape Architecture Extension	BCOM
	Johnson		Silos & Smokestacks National Heritage Area	Extension CED	OCOM
	Johnson	Iowa City	New Pioneer	ISU Extension	PWD
	Johnson	Iowa City	Mercy Hospital	ISU Extension	PWD
	Johnson	Coralville	Hardee's	ISU Extension	PWD
	Johnson	Iowa City	Sanctuary	ISU Extension	PWD
	Johnson	Coralville	Pancho's Mexican Grill	ISU Extension	PWD
	Johnson	Coralville	New Age Restaurant	ISU Extension	PWD
	Johnson	Coralville	Applebee's	ISU Extension	PWD
Johnson County		148			148
	Jones	Anamosa	Planning & Zoning Commission	CRP	TCOM
	Jones	Anamosa	Planning & Zoning Commission	Extension CED, CRP Extension	TCOM
	Jones	Cascade	Cascade	Landscape Architecture, IDRO	BCOM
	Jones	Anamosa	Anamosa	Landscape Architecture, IDRO	BCOM
	Jones	Monticello	Monticello	Landscape Architecture, IDRO	BCOM
	Jones	Olin	Olin	Landscape Architecture, IDRO	BCOM
	Jones	Scotch Grove	CAI Students	Crop Advisor Institute	PWD
	Jones	Center Junction	Lindley Locker	Meat Science Extension	PWD
	Jones	Anamosa	Anamosa	Landscape Architecture, IDRO	BCOM
	Jones	Anamosa	NE Iowa Community Development Conference	Extension CED	FAC
	Jones	Monticello	Monticello	Landscape Architecture, IDRO	BCOM
	Jones	Olin	Olin	Landscape Architecture, IDRO	BCOM
	Jones	Monticello	Great Jones County Fair	CEED, OA, CYC, FS	BAC
	Jones	Anamosa	Jones County Farm Bureau	CEED, OA, CYC, FS	BAC
	Jones	Monticello	Tri County Bank & Trust	CEED	BAC
	Jones	Monticello	Monticello Express	CEED, OA, CYC, FS	BAC
	Jones	Anamosa	Anamosa Eureka Journal	CEED, OA, CYC, FS	BAC
	Jones	Wyoming	Midland Times	CEED, OA, CYC, FS	BAC
	Jones	Olin	River Valley Cooperative	CEED, CYC	BAC
	Jones	Monticello	Jones County Economic Development	CEED	BCOM
	Jones	Anamosa	Jones County Endowment Fund	CEED	BCOM
	Jones	Monticello	Jones County Cattleman Board	CEED	BCOM
	Jones	Olin	City of Olin	CEED, FS	BCOM
	Jones	Wyoming	City of Wyoming	CEED, FS	BCOM
	Jones	Oxford Junction	City of Oxford Junction	CEED, FS	BCOM

	Jones	Anamosa	City of Anamosa	CEED, FS	BCOM
	Jones	Anamosa	Jones County Empowerment Board	CEED, FS	FAC
	Jones	Anamosa	County Child Care Resource Coalition	CEED, FS	FAC
	Jones	Anamosa	Jones County Leadership Program	CEED	FAC
	Jones	Anamosa	Jones County Career Expo	CEED, FS	FAC
	Jones	Anamosa	Jones County Board of Supervisors	CEED, FS	OCOM
	Jones	Anamosa	County Resource Coalition	CEED, FS	OCOM
	Jones	Anamosa	Jones County Emergency Management	CEED, FS	OCOM
	Jones	Monticello	Monticello High School	CEED	OCOM
	Jones	Olin	Olin High School	CEED	OCOM
	Jones		Miles Loy/ Triangle Agri Service	Extension/Iowa Beef Center	PWD
	Jones	Olin	Olin	ISU Extension	OCOM
	Jones	Oxford Junction	Oxford Junction	ISU Extension	OCOM
	Jones	Wyoming	Wyoming	ISU Extension	OCOM
	Jones	Anamosa	Wapsi Valley Archaeology, Inc.	ISUE-CIRAS	BAC
	Jones	Anamosa	City of Anamosa	CTRE/CP Tech	PWD
	Jones	Anamosa	Jones Co.	CTRE/CP Tech	PWD
	Jones	Anamosa	Jones Co.	CTRE/CP Tech	PWD
	Jones	Anamosa	Jones Co. Engineer	CTRE/CP Tech	PWD
	Jones	Monticello	City of Monticello	CTRE/CP Tech	PWD
	Jones		Planning & Zoning Comm. Chair	CRP	TCOM
	Jones		NE Iowa Community Development Conference	Extension CED	FAC
	Jones		Planning & Zoning Comm. Chair	Extension CED, CRP Extension	TCOM
	Jones		Silos & Smokestacks National Heritage Area	Extension CED	OCOM
Jones County		49			49
	Keokuk	Delta	Distance Education Students = 2	Brenton Ctr for Ag Instruction	PWD
	Keokuk	Sigourney	Keokuk County Task Force	Extension CED	OCOM
	Keokuk	Sigourney	Sigourney	Extension CED	PWD
	Keokuk	Hedrick	City Hall	Extension Office	BCOM
	Keokuk	Ollie	City Hall	Extension Office	BCOM
	Keokuk	Sigourney	City Hall	Extension Office	BCOM
	Keokuk	Richland	City Hall	Extension Office	BCOM
	Keokuk	Keokuk County	Keokuk County DOT	Extension Office	FAC
	Keokuk	Keokuk County	Farm Bureau	Extension Office	FAC
	Keokuk	Keota	Vittetoe Manf	Extension Office	FAC
	Keokuk	Keota	Rayman Manf	Extension Office	FAC
	Keokuk	Keokuk County	Health Dept	Extension Office	OCOM
	Keokuk	Keokuk County	Keokuk County Health Center	Extension Office	OCOM
	Keokuk	Sigourney	Sigourney Schools	Extension Office	OCOM
	Keokuk	Keokuk	Tri-State Coalition Against Domestic & Sexual Abuse, Keokuk	Johnson County Extension	PWD
	Keokuk	Keswick	Crop Production Services	Extension Office	PWD
	Keokuk	North English	Crop Production Services	Extension Office	PWD
	Keokuk	Webster	New Alliance FS	Extension Office	PWD
	Keokuk	Hedrick	New Alliance FS	Extension Office	PWD
	Keokuk	Keota	Vision Ag	Extension Office	PWD
	Keokuk	Richland	Vision Ag	Extension Office	PWD
	Keokuk	Sigourney	Vision Ag	Extension Office	PWD
	Keokuk	Hedrick	Golden Furrow	Extension Office	PWD
	Keokuk	Harper	Gretters Elevator	Extension Office	PWD
	Keokuk	Signourney	Keokuk County Hwy Dept.	CTRE/CP Tech	PWD
	Keokuk	Sigourney	Keokuk Co.	CTRE/CP Tech	PWD
Keokuk County		26			26
	Kossuth	Algona	Algona	Landscape Architecture, IDRO	BCOM/ OCOM
	Kossuth	Bancroft	Bancroft	Landscape Architecture, IDRO	BCOM
	Kossuth	Titonka	Titonka	Landscape Architecture, IDRO	BCOM
	Kossuth	Algona	Kossuth/Palo Alto County Economic Development Corporation	College of Engineering	BCOM
	Kossuth	Fenton	Murphy Brown LLC	College of Engineering	PWD
	Kossuth	West Bend	BioMassters Energy, Inc.	IPRT Company Assistance- Materials	TAC
	Kossuth	West Bend	BioMassters Energy, Inc.	IPRT Company Assistance- Technology Commercialization	TT
	Kossuth	Algona	CAI Students	Crop Advisor Institute	PWD
	Kossuth	Algona	Distance Education Students = 2	Brenton Ctr for Ag Instruction	PWD
	Kossuth	Bancroft	Welp Hatchery	Animal Science-Bregendahl	TAC
	Kossuth	Lakota	Shirley Loucks	ISURF	TT
	Kossuth	Lakota	Shirley Loucks	ISURF	TT
	Kossuth	Algona	Algona	Landscape Architecture, IDRO	BCOM/ OCOM
	Kossuth	Bancroft	Bancroft	Landscape Architecture, IDRO	BCOM
	Kossuth	Titonka	Titonka	Landscape Architecture, IDRO	BCOM
	Kossuth		Kossuth County Auditors	Extension CED	OCOM

	Kossuth	Algona	Hydrogen Engine Center	ISUE-CIRAS	TAC
	Kossuth	Bancroft	Aluma Ltd	ISUE-CIRAS	TAC
	Kossuth	Algona	Kuehl & Payer Ltd.	CTRE/CP Tech	PWD
	Kossuth	Lakota	Midwest Grain Processors	Industry Relations	TAC
	Kossuth		Kossuth County Auditors	Extension CED	OCOM
Kossuth County	21				21
	Lee	Franklin	Franklin	Landscape Architecture, IDRO	BCOM
	Lee	West Point	West Point	Landscape Architecture, IDRO	BCOM
	Lee	Montrose	Lee County Economic Development	College of Engineering	BCOM
	Lee	Fort Madison	Pinnacle Foods - Armour	Meat Science Extension	PWD
	Lee	Keokuk	Roquette	CCUR	FAC
	Lee	Keokuk	Roquette	CCUR	FAC
	Lee	West Point	M.S. Technologies, LLC	ISURF	TT
	Lee	Franklin	Franklin	Landscape Architecture, IDRO	BCOM
	Lee	West Point	West Point	Landscape Architecture, IDRO	BCOM
	Lee	Keokuk	Tri-City Energy	Lee County Extension	BAC
	Lee	Keokuk	Keokuk Chamber of Commerce	Lee County Extension	BAC
	Lee	Fort Madison	Fort Madison Chamber of Commerce	Lee County Extension	BAC
	Lee	Keokuk	Keokuk Area Convention and Tourism Bureau	Lee County Extension	BAC
	Lee	Lee County	Lee County Fairboard	Lee County Extension	BAC
	Lee	Fort Madison	Train Town Fort Madison	Lee County Extension	BAC
	Lee	Montrose	Iowa Corrections	Lee County Extension	BAC
	Lee	Fort Madison	Iowa Prison Industries	Lee County Extension	BAC
	Lee	Montrose	The Welding Shop	Lee County Extension	BAC
	Lee	Lee County	Agri-Need (three locations)	Lee County Extension	BAC
	Lee	Houghton	Chem-Gro	Lee County Extension	BAC
	Lee	Donnellson	Donnellson Elevator	Lee County Extension	BAC
	Lee	Lee County	Kathy's Pumpkin Patch Ag Tourism	Lee County Extension	BAC
	Lee	Lee. Co	Lee County Economic Development	Lee County Extension	BCOM
	Lee	Franklin	City of Franklin	Lee County Extension	BCOM
	Lee	West Point	City of West Point	Lee County Extension	BCOM
	Lee	Montrose	City of Montrose	Lee County Extension	BCOM
	Lee	Keokuk	City of Keokuk	Lee County Extension	BCOM
	Lee	Keokuk	City of Fort Madison	Lee County Extension	BCOM
	Lee	Keokuk	Keokuk Chamber of Commerce	Lee County Extension	BCOM
	Lee	Keokuk	Keokuk Main Street Program	Lee County Extension	BCOM
	Lee	Lee. Co	Lee County Emergency Management	Lee County Extension	BCOM
	Lee	Fort Madison	Fort Madison Chamber of Commerce	Lee County Extension	BCOM
	Lee	Keokuk	Keokuk Area Convention and Tourism Bureau	Lee County Extension	BCOM
	Lee	Lee. Co	Lee County Conservation	Lee County Extension	BCOM
	Lee	Keokuk	Alliant Energy	Lee County Extension	BCOM
	Lee	Tri-County	Iowa DNR Forestry	Lee County Extension	BCOM
	Lee	Fort Madison	Train Town Fort Madison	Lee County Extension	BCOM
	Lee	Fort Madison	Fort Madison Parks and Recreation	Lee County Extension	BCOM
	Lee	Montrose	The Welding Shop	Lee County Extension	BCOM
	Lee	Lee County	Lee County Board of Supervisors	Lee County Extension	BCOM
	Lee	Keokuk	Keokuk Rotary	Lee County Extension	BCOM
	Lee	Keokuk	Lions Club	Lee County Extension	BCOM
	Lee	Keokuk	Keokuk Housing Authority	Lee County Extension	BCOM
	Lee	Tri-State Area	KOKX Broadcasting Company	Lee County Extension	BCOM
	Lee	Fort Madison	Fort Madison Daily Democrat	Lee County Extension	BCOM
	Lee	Lee. Co	Lee County Economic Development	Lee County Extension	FAC
	Lee	Keokuk	Keokuk Chamber of Commerce	Lee County Extension	FAC
	Lee	Lee. Co	Lee County Emergency Management	Lee County Extension	FAC
	Lee	Fort Madison	Fort Madison Chamber of Commerce	Lee County Extension	FAC
	Lee	Keokuk	Keokuk Area Convention and Tourism Bureau	Lee County Extension	FAC
	Lee	Lee. Co	Lee County Conservation	Lee County Extension	FAC
	Lee	Keokuk	Alliant Energy	Lee County Extension	FAC
	Lee	Tri-County	Iowa DNR Forestry	Lee County Extension	FAC
	Lee	Lee County	Lee County Fairboard	Lee County Extension	FAC
	Lee	Fort Madison	Train Town Fort Madison	Lee County Extension	FAC
	Lee	Montrose	Iowa Corrections	Lee County Extension	FAC
	Lee	Fort Madison	Iowa Prison Industries	Lee County Extension	FAC
	Lee	Lee County	Lee County Board of Supervisors	Lee County Extension	FAC
	Lee	Tri-County	Southeastern Community College	Lee County Extension	FAC
	Lee	Lee County	Agri-Need (three locations)	Lee County Extension	FAC
	Lee	Houghton	Chem-Gro	Lee County Extension	FAC
	Lee	Donnellson	Donnellson Elevator	Lee County Extension	FAC
	Lee	Donnellson	Crop Quest	Lee County Extension	FAC
	Lee	Lee County	Lee County Farm Bureau	Lee County Extension	FAC
	Lee	Keokuk	Keokuk Housing Authority	Lee County Extension	FAC
	Lee	Lee County	Monsanto Corporation	Lee County Extension	FAC
	Lee	Keokuk	Keokuk Daily Gate City	Lee County Extension	FAC
	Lee	Fort Madison	Matt's Bedding Plants	Lee County Extension	FAC
	Lee	Lee County	Lee County Health Department	Lee County Extension	FAC
	Lee	Fort Madison	Fort Madison Hospital	Lee County Extension	FAC
	Lee	Keokuk	Keokuk Hospital	Lee County Extension	FAC
	Lee	Fort Madison	YMCA	Lee County Extension	FAC
	Lee	Lee County	Natural Resource and Conservation Service	Lee County Extension	FAC
	Lee	Lee County	Farm Service Agency	Lee County Extension	FAC

Lee	Lee County	Kathy's Pumpkin Patch Ag Tourism	Lee County Extension	FAC
Lee	Lee County	Agriculture Commodity Groups	Lee County Extension	FAC
Lee	Lee County	Iowa Woodland owners	Lee County Extension	FAC
Lee	Lee County	Integrated Energy Investment Company	Lee County Extension	FAC
Lee	Lee County	Farmers Markets Groups	Lee County Extension	FAC
Lee	Keokuk	Roquette America Inc.	Lee County Extension	FAC
Lee	Fort Madison	Fort Madison Public School District	Lee County Extension	OCOM
Lee	Lee. Co	Lee County Emergency Management	Lee County Extension	OCOM
Lee	Tri-County	Southeastern Community College	Lee County Extension	OCOM
Lee	Lee County	Lee County Farm Bureau	Lee County Extension	OCOM
Lee	Keokuk	Keokuk Rotary	Lee County Extension	OCOM
Lee	Keokuk	Lions Club	Lee County Extension	OCOM
Lee	Keokuk	Keokuk Housing Authority	Lee County Extension	OCOM
Lee	Tri-State Area	KOKX Broadcasting Company	Lee County Extension	OCOM
Lee	Fort Madison	Fort Madison Daily Democrat	Lee County Extension	OCOM
Lee	Keokuk	Keokuk Daily Gate City	Lee County Extension	OCOM
Lee	Lee County	Lee County Health Department	Lee County Extension	OCOM
Lee	Fort Madison	Fort Madison Hospital	Lee County Extension	OCOM
Lee	Keokuk	Keokuk Hospital	Lee County Extension	OCOM
Lee	Fort Madison	YMCA	Lee County Extension	OCOM
Lee	Montrose	Lee County Economic Development Group, Montrose	Johnson County Extension	PWD
Lee	Lee County	Iowa Department of Agriculture Land Stewardship	Lee County Extension	PWD
Lee	Lee. Co	Lee County Conservation	Lee County Extension	TAC
Lee	Keokuk	Alliant Energy	Lee County Extension	TAC
Lee	Tri-County	Iowa DNR Forestry	Lee County Extension	TAC
Lee	Lee County	Lee County Fairboard	Lee County Extension	TAC
Lee	Fort Madison	Train Town Fort Madison	Lee County Extension	TAC
Lee	Montrose	Iowa Corrections	Lee County Extension	TAC
Lee	Fort Madison	Iowa Prison Industries	Lee County Extension	TAC
Lee	Keokuk	Keokuk Public Works	Lee County Extension	TAC
Lee	Lee County	Agri-Need (three locations)	Lee County Extension	TAC
Lee	Houghton	Chem-Gro	Lee County Extension	TAC
Lee	Donnellson	Donnellson Elevator	Lee County Extension	TAC
Lee	Donnellson	Crop Quest	Lee County Extension	TAC
Lee	Lee County	Monsanto Corporation	Lee County Extension	TAC
Lee	Tri-State Area	KOKX Broadcasting Company	Lee County Extension	TAC
Lee	Fort Madison	Fort Madison Daily Democrat	Lee County Extension	TAC
Lee	Keokuk	Keokuk Daily Gate City	Lee County Extension	TAC
Lee	Fort Madison	Matt's Bedding Plants	Lee County Extension	TAC
Lee	Lee County	Natural Resource and Conservation Service	Lee County Extension	TAC
Lee	Lee County	Farm Service Agency	Lee County Extension	TAC
Lee	Lee County	Kathy's Pumpkin Patch Ag Tourism	Lee County Extension	TAC
Lee	Lee County	Agriculture Commodity Groups	Lee County Extension	TAC
Lee	Lee County	Iowa Woodland owners	Lee County Extension	TAC
Lee	Lee County	Iowa Department of Agriculture Land Stewardship	Lee County Extension	TAC
Lee	Lee County	Hertz Farm Management	Lee County Extension	TAC
Lee	Lee County	Integrated Energy Investment Company	Lee County Extension	TAC
Lee	Lee County	Rathbun Rural Water Association	Lee County Extension	TAC
Lee	Franklin	City of Franklin	Lee County Extension	TCOM
Lee	West Point	City of West Point	Lee County Extension	TCOM
Lee	Montrose	City of Montrose	Lee County Extension	TCOM
Lee	Keokuk	City of Keokuk	Lee County Extension	TCOM
Lee	Keokuk	City of Fort Madison	Lee County Extension	TCOM
Lee	Keokuk	Keokuk Chamber of Commerce	Lee County Extension	TCOM
Lee	Keokuk	Keokuk Main Street Program	Lee County Extension	TCOM
Lee	Fort Madison	Fort Madison Chamber of Commerce	Lee County Extension	TCOM
Lee	Lee. Co	Lee County Conservation	Lee County Extension	TCOM
Lee	Keokuk	Alliant Energy	Lee County Extension	TCOM
Lee	Tri-County	Iowa DNR Forestry	Lee County Extension	TCOM
Lee	Fort Madison	Fort Madison Parks and Recreation	Lee County Extension	TCOM
Lee	Keokuk	Keokuk Public Works	Lee County Extension	TCOM
Lee	Lee County	Lee County Board of Supervisors	Lee County Extension	TCOM
Lee	Keokuk	Habitat For Humanity	Lee County Extension	TCOM
Lee	Fort Madison	Habitat For Humanity	Lee County Extension	TCOM
Lee	Donnellson	Iowa Department of Transportation	Lee County Extension	TCOM
Lee	Keokuk	Keokuk Daily Gate City	Lee County Extension	TCOM
Lee	Donnellson	Iowa Department of Transportation	Lee County Extension	TT
Lee	Tri-State Area	KOKX Broadcasting Company	Lee County Extension	TT
Lee	Fort Madison	Fort Madison Daily Democrat	Lee County Extension	TT
Lee	Donnellson	Sonnellson Heath Center	ISU Extension	PWD
Lee	Houghton	Hawkeye Steel Products Inc	ISUE-CIRAS	TAC
Lee	Keokuk	Tri-City Energy, LLC	ISUE-CIRAS	BAC
Lee	Keokuk	Seither and Cherry	ISUE-CIRAS	BAC
Lee	Fort Madison	Dial Corp	ISUE-CIRAS	TAC
Lee	Keokuk	Roquette	CCUR	FAC
Lee	Keokuk	A and E Waste Management	Lee County Extension	BAC
Lee	Fort Madison	Hoeing's Landscape	Lee County Extension	BAC
Lee	West Point	Merschaman Seeds	Lee County Extension	BAC
Lee	Keokuk	Keokuk Public School System	Lee County Extension	FAC
Lee	Donnellson	Central Lee Community School System	Lee County Extension	FAC
Lee	Keokuk	YMCA	Lee County Extension	FAC
Lee	West Point	Merschaman Seeds	Lee County Extension	FAC
Lee	Keokuk	Keokuk Public School System	Lee County Extension	OCOM

	Lee	Donnellson	Central Lee Community School System	Lee County Extension	OCOM
	Lee	Keokuk	YMCA	Lee County Extension	OCOM
	Lee	Keokuk	A and E Waste Management	Lee County Extension	TAC
	Lee	West Point	Merschaman Seeds	Lee County Extension	TAC
	Lee	Fort Madison	Hoeing's Landscape	Lee County Extension	TAC
Lee County		162			162
	Linn	Cedar Rapids	County Planning & Zoning	CRP	TCOM
	Linn	Cedar Rapids	County Planning & Zoning	Extension CED, CRP Extension	TCOM
	Linn	Mount Vernon	Hills Bank	Economics & CCUR	BAC
	Linn	Mount Vernon	Iowa Producers - Cooperative Formation	Economics & CCUR	BAC
	Linn	Mount Vernon	Hills Bank	Economics & CCUR	BAC
	Linn	Mount Vernon	Iowa Producers - Cooperative Formation	Economics & CCUR	BAC
	Linn	Mount Vernon	Hills Bank	Economics & CCUR	BAC
	Linn	Mount Vernon	Iowa Producers - Cooperative Formation	Economics & CCUR	BAC
	Linn	Center Point	Council Member	CRP	TCOM
	Linn	Linn	Economic Development Coordinator	CRP	TCOM
	Linn	Center Point	Council Member	Extension CED, CRP Extension	TCOM
	Linn	Linn	Economic Development Coordinator	Extension CED, CRP Extension	TCOM
	Linn	Ely	New Leaf Interactive Media	OIPTT	BAC
	Linn	Cedar Rapids	Entrepreneurial Development Center, Inc.	OIPTT	FAC
	Linn	Cedar Rapids	Kirkwood Community College	OIPTT	BCOM
	Linn	Cedar Rapids	Express Auto Delivery	OIPTT	BAC
	Linn	Marion	Genovatech	OIPTT	BAC
	Linn	Marion	SwitchQuick	OIPTT	BAC
	Linn	Cedar Rapids	Bankers Trust	OIPTT	FAC
	Linn	Cedar Rapids	Banklowa	OIPTT	FAC
	Linn	Marion	Softronics	College of Business	FAC
	Linn	Alburnett	Alburnett	Landscape Architecture, IDRO	BCOM
	Linn	Cedar Rapids	ECICOG	CRP	BCOM
	Linn	Fairfax	City Clerk	CRP	TCOM
	Linn	Fairfax	Planning & Zoning Chairman	CRP	TCOM
	Linn	Fairfax	Fairfax	Landscape Architecture, IDRO	BCOM
	Linn	Hiawatha	Administrator	CRP	TCOM
	Linn	Hiawatha	Community Development Director	CRP	TCOM
	Linn	Hiawatha	Hiawatha	Landscape Architecture, IDRO; CED	BCOM/ TCOM
	Linn	Lisbon	Lisbon	Landscape Architecture, IDRO	BCOM
	Linn	Palo	Palo	Landscape Architecture, IDRO	BCOM
	Linn	Springville	Springville	Landscape Architecture, IDRO	BCOM
	Linn	Cedar Rapids	Rockwell Collins	College of Engineering	FAC
	Linn	Cedar Rapids	Cedar Ridge Vineyards	College of Engineering	BAC
	Linn	Cedar Rapids	Entrepreneurial Development Center	College of Engineering	FAC
	Linn	Hiawatha	First Voice	College of Engineering	TAC
	Linn	Robins	Freedom 360 Modular Homes	College of Engineering	FAC
	Linn	Cedar Rapids	Alliant Energy	College of Engineering	TAC
	Linn	Cedar Rapids	Rockwell Collins	College of Engineering	TAC
	Linn	Cedar Rapids	Basler Design Group	College of Engineering	PWD
	Linn	Cedar Rapids	IMAGEFUSION	College of Engineering	PWD
	Linn	Cedar Rapids	Square D	College of Engineering	PWD
	Linn	Cedar Rapids	Intermec Technologies	College of Engineering	PWD
	Linn	Cedar Rapids	Rockwell Collins	College of Engineering	PWD
	Linn	Iowa City	BIOWA	Center for Catalysis, IPRT	TAC, TT
	Linn	Iowa City	Midwest Forestry and Biofuels	Center for Catalysis, IPRT	TAC
	Linn	Cedar Rapids	Rockwell Collins	Center for Nondestructive Evaluation, IPRT	TAC
	Linn	Cedar Rapids	Iowa Fluid Power, Inc.	IPRT Company Assistance- Materials	TAC
	Linn	Marion	Marion Mixers	IPRT Company Assistance- Materials	TAC
	Linn	Cedar Rapids	Rockwell Collins, Inc.	IPRT Company Assistance- Materials	TAC
	Linn	Cedar Rapids	Diamond V Mills, Inc.	IPRT Company Assistance- Technology Commercialization	TT
	Linn	Cedar Rapids	General Mills, Inc.	IPRT Company Assistance- Technology Commercialization	TT
	Linn	Cedar Rapids	Rockwell Collins, Inc.	IPRT Company Assistance- Technology Commercialization	TT
	Linn	Cedar Rapids	Cedar Rapids Police Department	Midwest Forensics Resource Center, IPRT	TCOM
	Linn	Cedar Rapids	Rockwell Collins	Virtual Reality Applications Center, IPRT	TAC, PWD
	Linn	Cedar Rapids	City Meat Market Inc.	Meat Science Extension	PWD
	Linn	Cedar Rapids	Diamond V	CCUR	FAC

	Linn	Cedar Rapids	Distance Education Students = 2	Brenton Ctr for Ag Instruction	PWD
	Linn	Ely	Distance Education Students = 2	Brenton Ctr for Ag Instruction	PWD
	Linn	Hiawatha	Distance Education Students = 2	Brenton Ctr for Ag Instruction	PWD
	Linn	Mt. Vernon	Distance Education Students = 2	Brenton Ctr for Ag Instruction	PWD
	Linn	Marion	Distance Education Students = 4	Brenton Ctr for Ag Instruction	PWD
	Linn	Cedar Rapids	Genencor (Danisco US Inc., Genencor Division)	CCUR	FAC, TAC
	Linn	Marion	Legacy Automotive & Industrial Products	Joseph Chen - ABE and CIRAS	TAC
	Linn	Marion	Linn-Mar High School	College of Engineering / ABE (PLTW)	OCOM
	Linn	Cedar Rapids	Midamar Corporation	Meat Science Extension	PWD
	Linn	Cedar Rapids	Kirkwood Community College	Agricultural Education and Studies	OCOM
	Linn	Cedar Rapids	Kirkwood Community College	Agricultural Education and Studies	OCOM
	Linn	Cedar Rapids	Linn-Marr Community Schools	Agricultural Education and Studies	OCOM
	Linn	Cedar Rapids	Diamond V	CCUR	FAC
	Linn	Cedar Rapids	Genencor (Danisco US Inc., Genencor Division)	CCUR	FAC, TAC
	Linn	Cedar Rapids	Diamond V. Mills, Inc.	ISURF	TT
	Linn	Alburnett	Alburnett	Landscape Architecture, IDRO	BCOM
	Linn	Cedar Rapids	Cedar Rapids	Extension CED	TCOM/ OCOM/ PWD
	Linn	Cedar Rapids	Dr. Trigger Enterprises Inc.	Extension CED	PWD
	Linn	Cedar Rapids	ECICOG	Extension CED, CRP Extension	BCOM
	Linn	Cedar Rapids	NE Iowa Community Development Conference	Extension CED	FAC
	Linn	Centerville	Appanoose County Assessor's Office	Extension CED	PWD
	Linn	Fairfax	City Clerk	Extension CED, CRP Extension	TCOM
	Linn	Fairfax	Fairfax	Landscape Architecture, IDRO	BCOM
	Linn	Fairfax	Planning & Zoning Chairman	Extension CED, CRP Extension	TCOM
	Linn	Hiawatha	Administrator	Extension CED, CRP Extension	TCOM
	Linn	Hiawatha	City of Hiawatha	Extension CED	BCOM
	Linn	Hiawatha	Community Development Director	Extension CED, CRP Extension	TCOM
	Linn	Hiawatha	Hiawatha	Landscape Architecture, IDRO; Extension CED	BCOM/ TCOM
	Linn	Lisbon	Lisbon	Landscape Architecture, IDRO	BCOM
	Linn	Marion	NE Iowa Community Development Conference	Extension CED	FAC
	Linn	Palo	Palo	Landscape Architecture, IDRO	BCOM
	Linn	Springville	Springville	Landscape Architecture, IDRO	BCOM
	Linn		Linn County - 15 in 5 Early Childhood effort	Linn County Extension	OCOM
	Linn		Linn County - Parent Education Consortium at worksites	Linn County Extension	OCOM
	Linn	Marion	Linn County Extension, Marion	Johnson County Extension	PWD
	Linn	Cedar Rapids	Young Parents Network, Cedar Rapids	Johnson County Extension	PWD
	Linn	Cedar Rapids	The History Center, CR	Johnson County Extension	PWD
	Linn	Hiawatha	American Red Cross, Hiawatha	Johnson County Extension	PWD
	Linn	Cedar Rapids	American Red Cross-Grant Wood Chapter, CR	Johnson County Extension	PWD
	Linn	Marion	Caleb Ministries, Marion	Johnson County Extension	PWD
	Linn	Cedar Rapids	Faith in Action, CR	Johnson County Extension	PWD
	Linn	Cedar Rapids	Arc of East Central Iowa, CR	Johnson County Extension	PWD
	Linn	Cedar Rapids	CCIA/Youth Leadership Program, CR	Johnson County Extension	PWD
	Linn	Marion	First United Methodist Church, Marion	Johnson County Extension	PWD
	Linn	Cedar Rapids	Faith in Action, CR	Johnson County Extension	PWD
	Linn	Cedar Rapids	Neighborhood Revitalization Service, CR	Johnson County Extension	PWD
	Linn	Marion	Caring Corner Christian Daycare, Marion	Johnson County Extension	PWD
	Linn	Cedar Rapids	House of Hope, CR	Johnson County Extension	PWD
	Linn	Cedar Rapids	Cedar Rapids Community School District, CR	Johnson County Extension	PWD
	Linn	Hiawatha	HACAP, Hiawatha	Johnson County Extension	PWD
	Linn	Cedar Rapids	Willis Dady Emergency Shelter, CR	Johnson County Extension	PWD
	Linn	Cedar Rapids	The Meth-Wick Community Inc., CR	Johnson County Extension	PWD
	Linn	Cedar Rapids	African American Historical Museum and Cultural Center of Iowa, CR	Johnson County Extension	PWD
	Linn	Marion	Community Health Free Clinic, Marion	Johnson County Extension	PWD
	Linn	Cedar Rapids	Coe College, CR	Johnson County Extension	PWD
	Linn	Marion	Iowa District East-Lutheran Church Mo. Synod, Marion	Johnson County Extension	PWD
	Linn		Linn and surrounding counties - nonprofit workshops	Linn County Extension	PWD

	Linn	Cedar Rapids	Midwest Dairy Assoc - Iowa Dairy Nut. Ad. Comm	ISU Extension	BCOM
	Linn	Marion	Summit Pointe	ISU Extension	PWD
	Linn	Cedar Rapids	Applebee's	ISU Extension	PWD
	Linn	Marion	Spybar on 10th	ISU Extension	PWD
	Linn	Cedar Rapids	Beckett's	ISU Extension	PWD
	Linn	Cedar Rapids	ADM	ISU Extension	PWD
	Linn	Marion	Culver's	ISU Extension	PWD
	Linn	Cedar Rapids	Garnet Place	ISU Extension	PWD
	Linn	Center Point	Pizza Place	ISU Extension	PWD
	Linn	Cedar Rapids	Kingston Hill	ISU Extension	PWD
	Linn	Cedar Rapids	Chili's	ISU Extension	PWD
	Linn	Cedar Rapids	Hydraulic Specialty Company	ISUE-CIRAS	TAC
	Linn	Mount Vernon	B4 Brands	ISUE-CIRAS	TAC
	Linn	Cedar Rapids	EcoLips Inc.	ISUE-CIRAS	TAC
	Linn	Center Point	Computer Software Development, Inc.	ISUE-CIRAS	BAC
	Linn	Cedar Rapids	Morning Star Studio LLC	ISUE-CIRAS	BAC
	Linn	Cedar Rapids	Ram Technology, LLC	ISUE-CIRAS	BAC
	Linn	Mount Vernon	Hands On Screenprint and Embroidery	ISUE-CIRAS	BAC
	Linn	Central City	Central City Manufacturing Inc.	ISUE-CIRAS	BAC
	Linn	Cedar Rapids	Hunter's Specialties Inc	ISUE-CIRAS	TAC
	Linn	Cedar Rapids	Engineered Seal Products Inc	ISUE-CIRAS	TAC
	Linn	Cedar Rapids	Goodwill Industries of SE Iowa	ISUE-CIRAS	TAC
	Linn	Cedar Rapids	Midwest Metal Products Co Inc	ISUE-CIRAS	TAC
	Linn	Cedar Rapids	Goodwill Industries of SE Iowa	ISUE-CIRAS	TAC
	Linn	Cedar Rapids	Ament, Inc.	CTRE/CP Tech	PWD
	Linn	Cedar Rapids	City of Cedar Rapids	CTRE/CP Tech	PWD
	Linn	Cedar Rapids	Construction Materials	CTRE/CP Tech	PWD
	Linn	Cedar Rapids	Conveyor Eng. & Mfg.	CTRE/CP Tech	PWD
	Linn	Cedar Rapids	Engineering Alliance Inc.	CTRE/CP Tech	PWD
	Linn	Cedar Rapids	Iowa DOT	CTRE/CP Tech	PWD
	Linn	Cedar Rapids	Shive-Hattery	CTRE/CP Tech	PWD
	Linn	Cedar Rapids	Snyder & Associates, Inc.	CTRE/CP Tech	PWD
	Linn	Cedar Rapids	Terracon Consultants, Inc	CTRE/CP Tech	PWD
	Linn	Central City	City of Central City	CTRE/CP Tech	PWD
	Linn	Ely	Martin Marietta Materials	CTRE/CP Tech	PWD
	Linn	Hiawatha	Hawkeye Ready Mix, Inc.	CTRE/CP Tech	PWD
	Linn	Marion	City of Marion	CTRE/CP Tech	PWD
	Linn	Marion	Linn Co.	CTRE/CP Tech	PWD
	Linn	Mount Vernon	City of Mount Vernon	CTRE/CP Tech	PWD
	Linn	Cedar Rapids	General Mills	OBP	BAC, FAC, TAC
	Linn	Cedar Rapids	Alliant Energy	Industry Relations	BCOM
	Linn	Cedar Rapids	Mello3z, LLC	Industry Relations	TAC
	Linn	Cedar Rapids	General Mills	OBP	BAC, FAC, TAC
	Linn	Cedar Rapids	Diamond V	CCUR	FAC
	Linn	Cedar Rapids	Genencor (Danisco US Inc., Genencor Division)	CCUR	FAC, TAC
	Linn		County Local Housing Trust Fund	Extension CED	TCOM
	Linn		County Local Housing Trust Fund	Extension CED	TCOM
	Linn		Lee County tourism	Extension CED	FAC
	Linn		Linn County Auditors	Extension CED	OCOM
	Linn		Linn County	Extension CED	OCOM
	Linn		Silos & Smokestacks National Heritage Area	Extension CED	OCOM
	Linn			Linn and Johnson Co.	
	Linn		Cedar Rapids/Iowa City Corridor - STEM program	Extension	OCOM
Linn County		166			166
	Louisa	Columbus Junction	Columbus Junction	Landscape Architecture, IDRO	BCOM
	Louisa	Columbus Junction	High School	CRP	BCOM
	Louisa	Grandview	Grandview	Landscape Architecture, IDRO	BCOM
	Louisa	Wapello	Wapello	Landscape Architecture, IDRO	BCOM
	Louisa	Columbus Junction	Tyson Foods	Meat Science Extension	PWD
	Louisa	Columbus Jct	Translators and Interpreters	Extension CED	PWD
	Louisa	Columbus Junction	Columbus Junction	Landscape Architecture, IDRO	BCOM
	Louisa	Columbus Junction	Columbus Junction	Extension CED	OCOM
	Louisa	Columbus Junction	High School	Extension CED, CRP	BCOM
	Louisa	Grandview	Grandview	Extension	
	Louisa	Grandview	Grandview	Landscape Architecture, IDRO	BCOM
	Louisa	Wapello	Wapello	Landscape Architecture, IDRO	BCOM
	Louisa	Morning Sun	Cloverdale Farms	Extension & School of Ag Professor	BAC
	Louisa	Morning Sun	Lindholm Law	Extension & School of Engineering	BAC
	Louisa	Morning Sun	Louisa Communications	Extension Director/CIRAS	BAC
	Louisa	Louisa County	Soil & Water Conservation District	Ag & Finance Field Specialists	BAC
	Louisa	Letts	Schlutz Enterprises	Ag Field Specialist	BAC
	Louisa	Morning Sun	Business Alliance	Extension Director	BCOM
	Louisa	Wapello	Louisa Development Group	School of Ag	BCOM
	Louisa	Columbus Junction	Community Club	Extension Director	BCOM

	Louisa	Morning Sun	Community Betterment	Extension Director & Specialist on Housing Trusts	BCOM
	Louisa	Morning Sun	Indian Hills Golf & Country Club	Extension Director	BCOM
	Louisa	Wapello	Louisa Development Group (Sr. Employment)	Extension Director	BCOM
	Louisa	Columbus Junction	Tri Rivers Foundation - Columbus Junction	Extension Field Specialist - Facilitation	FAC
	Louisa	Morning Sun	Louisa Development Group	Extension Director	FAC
	Louisa	Grandview	Louisa Development Group	Extension Director	FAC
	Louisa	Columbus Junction	Louisa Development Group	Extension Director	FAC
	Louisa	Columbus City	Louisa Development Group	Extension Director	FAC
	Louisa	Letts	Louisa Development Group	Extension Director	FAC
	Louisa	Oakville	Louisa Development Group	Extension Director	FAC
	Louisa	Fredonia	Louisa Development Group	Extension Director	FAC
	Louisa	Wapello	ADDS (Alcohol & Drug Dependency Services)	Extension Director	FAC
	Louisa	Louisa County	AEA 16	Extension Director	FAC
	Louisa	Louisa County	InterAgency Group	Extension Director	OCOM
	Louisa	Letts	L&M School	Extension Director	OCOM
	Louisa	Columbus Junction	People's Bank	Extension Director	OCOM
	Louisa	Morning Sun	Ultimate Fitness	Extension Director	OCOM
	Louisa	Wapello	Louisa County Courthouse Employees	Extension Director	OCOM
	Louisa	Louisa County	Louisa County Conservation Board	Extension Director	OCOM
	Louisa	Wapello	Southeastern Community College Planning Group	Extension Director	OCOM
	Louisa	Wapello	Grimm Brothers Plastics Corp	ISUE-CIRAS	TAC
	Louisa	Wapello	Louisa Co.	CTRE/CP Tech	PWD
	Louisa	Columbus Junction	Southeast Iowa Community Action	ISU Extension	PWD
	Louisa	Morning Sun	Morning Sun Care Center	ISU Extension	PWD
Louisa County		43			43
	Lucas	Chariton	Johnson Manufacturing Company	IPRT Company Assistance-NDE	TAC
	Lucas	Chariton	Chariton Comm School	McNay Research Farm, ISU	OCOM
	Lucas	Chariton	Dow Chemical	McNay Research Farm, ISU	FAC
	Lucas	Chariton	Nex-Gen Biofuels, Inc.	Extension CED	BAC
	Lucas	Chariton	Chariton - Horizons Project	Families	OCOM
	Lucas	Chariton	Chariton - Horizons Project	ISU Extension	OCOM
	Lucas	Chariton	City of Chariton	CTRE/CP Tech	PWD
	Lucas	Chariton	Iowa DOT	CTRE/CP Tech	PWD
	Lucas	Chariton	Lucas Co.	CTRE/CP Tech	PWD
	Lucas	Chariton	Iowa Telecom	Industry Relations	BCOM
	Lucas	Chariton	Kent Farm Mangement & Real Estate	Agricultural Education and Studies	FAC
	Lucas		ADLM Empowerment Board	CD-DIAL - Sociology Extension	OCOM
	Lucas		Lucas - ISU Extension County Office Marketing Surveys	CD-DIAL - Sociology Extension	BAC
Lucas County		13			13
	Lyon	Rock Rapids	Distance Education Students = 3	Brenton Ctr for Ag Instruction	PWD
	Lyon		Lyon County Auditors	Extension CED	OCOM
	Lyon	Rock Rapids	Kids Club Daycare	ISU Extension	PWD
	Lyon	George	Sudenga Industries Inc	ISUE-CIRAS	TAC
	Lyon	Rock Rapids	Legends Manufacturing Inc.	ISUE-CIRAS	BAC
	Lyon		23 election officials certified	CED	OCOM
	Lyon		Emergency Management Agency	Lyon & Osceola Extension	OCOM
	Lyon	Rock Rapids	Kids Club Daycare	Family Life Staff	PWD
	Lyon		NW Ia Developers Coalition	Lyon & Osceola Extension	BCOM
	Lyon		NW Ia Developers Coalition	Lyon & Osceola Extension	FAC
	Lyon		NW Ia Developers Coalition	Lyon & Osceola Extension	OCOM
	Lyon		Public Health	Lyon Extension	OCOM
	Lyon	Rock Rapids	Lyon Co.	CTRE/CP Tech	PWD
	Lyon	Rock Rapids	Lyon Co. Econ Development	Industry Relations	BCOM
	Lyon		23 election officials certified	Extension CED	OCOM
	Lyon	George	Community of George	ISU Extension	PWD
	Lyon	Rock Rapids	Alpha Omega Publishing	ISU Extension	PWD
	Lyon	Rock Rapids	Rosewood Heights	ISU Extension	PWD
	Lyon	Rock Rapids	Sanford Health Wellness Center	ISU Extension	PWD
Lyon County		19			19
	Madison	St Charles	Distance education student - BRT 501	OBP/ABE (Raman)	PWD
	Madison	Earlham	Distance Education Students = 2	Brenton Ctr for Ag Instruction	PWD
	Madison	Winterset	Distance Education Students = 4	Brenton Ctr for Ag Instruction	PWD
	Madison	Earlham	LPB	Meat Science Extension	PWD
	Madison	Winterset	Winterset Community School	Agricultural Education and Studies	FAC
	Madison	Winterset	Winterset	Extension CED	PWD
	Madison		County Trustees	Extension CED	TCOM
	Madison		Rural Development Resource Center	Extension CED	FAC
	Madison	Winterset	Madison County SAFE Coalition	Madison County Extension	OCOM

	Madison	Winterset	Madison County Chamber of Commerce	Madison County Extension	BCOM
	Madison	Winterset	Township Trustees/County Supervisors	County Office/Communities Field Specialist	OCOM
	Madison	Winterset	Farm Fresh/Buy Local	County Office	BAC
	Madison	Winterset	Country Haven	ISU Extension	PWD
	Madison	Winterset	Woodmarc Corp	ISUE-CIRAS	TAC
	Madison	St. Charles	Two Saints Winery	Midwest Grape & Wine Industry Institute	BAC
	Madison		Madison County	Extension CED	TCOM
	Madison		Rural Development Resource Center: Grow Iowa Fund; Wallace Fund; Southwest Iowa Coalition	Extension CED	BAC/ TCOM/ FAC/ BCOM
	Madison		Rural Development Summit	Extension CED	FAC
Madison County		18			18
	Mahaska	Oskaloosa	MidAmerican Energy Company	College of Engineering	PWD
	Mahaska	Oskaloosa	Clow Valve Company	IPRT Company Assistance-Materials	TAC
	Mahaska	Eddyville	Ajinomoto	IPRT Company Assistance-Technology Commercialization	TT
	Mahaska	Eddyville	Ajinomoto USA	Agriculture Experiment Station	TAC
	Mahaska	Oskaloosa	Distance Education Students = 1	Brenton Ctr for Ag Instruction	PWD
	Mahaska	Leighton	Leighton Processd Meats, Inc.	Meat Science Extension	PWD
	Mahaska	New Sharon	LaRue Farm	ISURF	TT
	Mahaska	Oskaloosa	FTE Genetics	ISURF	TT
	Mahaska	Oskaloosa	Crisis Intervention Services, Oskaloosa	Johnson County Extension	PWD
	Mahaska		Mark Moore Farm	Extension/Iowa Beef Center	TAC
	Mahaska	Oskaloosa	Stam Greenhouse	ISU Extension	PWD
	Mahaska	Oskaloosa	Great Expectations	ISU Extension	PWD
	Mahaska	Oskaloosa	Spaghetti's	ISU Extension	PWD
	Mahaska	New Sharon	DeJong Manufacturing Inc	ISUE-CIRAS	FAC
	Mahaska	Oskaloosa	City of Oskaloosa	CTRE/CP Tech	PWD
	Mahaska	Oskaloosa	Garden & Associates, Ltd.	CTRE/CP Tech	PWD
	Mahaska	Oskaloosa	Mahaska Co.	CTRE/CP Tech	PWD
	Mahaska	Oskaloosa	Mahaska County Secondary Roads	CTRE/CP Tech	PWD
	Mahaska	Oskaloosa	Mahaska County Agricultural and Rural Development	Industry Relations	BCOM
	Mahaska	Oskaloosa	Moon Valley Vineyards	Midwest Grape & Wine Industry Institute	BAC
	Mahaska	Leighton	Tassel Ridge Winery	Midwest Grape & Wine Industry Institute	PWD
	Mahaska	Beacon	Verschuure Vineyards	Midwest Grape & Wine Industry Institute	TAC
	Mahaska		Mahaska County tourism	Extension CED	FAC
	Mahaska		United Way of Mahaska County	CD-DIAL - Sociology Extension	OCOM
Mahaska County		24			24
	Marion	Pella	Fleenor Manufacturing	OIPTT	FAC
	Marion	Pella	Pella Corporation	College of Business	FAC
	Marion	Pella	Board of Adjustment	CRP	TCOM
	Marion	Pella	Zoning Administrator	CRP	TCOM
	Marion	Knoxville	Lee McClune, Sorganol Start-up	Center for Physical and Computational Mathematics, IPRT	TAC
	Marion	Pella	Pella Corporation	IPRT Company Assistance-Materials	TAC
	Marion	Pella	Vermeer Manufacturing Company	IPRT Company Assistance-Materials	TAC
	Marion	Pella	Pella Corporation	IPRT Company Assistance-Technology Commercialization	TT
	Marion	Pella	Central College	Families Extension	OCOM
	Marion	Columbia	Distance Education Students = 1	Brenton Ctr for Ag Instruction	PWD
	Marion	Pleasantville	Distance Education Students = 1	Brenton Ctr for Ag Instruction	PWD
	Marion	Pella	Distance Education Students = 11	Brenton Ctr for Ag Instruction	PWD
	Marion	Knoxville	Distance Education Students = 6	Brenton Ctr for Ag Instruction	PWD
	Marion	Pella	In't Veld's Meat Market	Meat Science Extension	PWD
	Marion	Melcher	Northcote Meats	Meat Science Extension	PWD
	Marion	Melcher	Northwood Foods	Meat Science Extension	PWD
	Marion	Pella	Pella	ABE	TAC
	Marion	Pella	Pella Corp.	CCUR	FAC, TAC
	Marion	Melcher-Dallas	PSEOA Distance Education Students = 1	Brenton Ctr for Ag Instruction	PWD
	Marion	Knoxville	PSEOA Distance Education Students = 3	Brenton Ctr for Ag Instruction	PWD

	Marion	Pella	PSEOA Distance Education Students = 7	Brenton Ctr for Ag Instruction	PWD
	Marion	Pella	Ulrich Meat Market	Meat Science Extension	PWD
	Marion	Pella	Vermeer	ABE	TAC
	Marion	Pella	Vermeer	CCUR	FAC
	Marion	Pella	Pella Corp.	CCUR	FAC, TAC
	Marion	Pella	Vermeer	CCUR	FAC
	Marion	Knoxville	Knoxville	Extension CED	OCOM
	Marion	Pella	Board of Adjustment	Extension CED, CRP Extension	TCOM
	Marion	Pella	Pella	Extension CED	TCOM
	Marion	Pella	Zoning Administrator	Extension CED, CRP Extension	TCOM
	Marion	Knoxville	Turning Point, Knoxville	Johnson County Extension	PWD
	Marion	Knoxville	Vineyard at Red Rock	Midwest Grape & Wine Industry Institute	TAC
	Marion	Pella	Knoxville, Pella - "Fast Trac" program	Marion County Extension	FAC
	Marion	Knoxville	Knoxville, surrounding area - VA Task Force	Marion County Extension	BCOM
	Marion	Knoxville	Marion County - Bioeconomy	Marion County Extension	FAC
	Marion	Knoxville	Enviro Board Corporation	Marion County Extension	BAC
	Marion	Swan	Donna Hansel (Individual Owner)	ISU Extension	PWD
	Marion	Knoxville	VA Central Iowa - Knoxville	ISU Extension	PWD
	Marion	Pella	Ewing Land Development and Services	ISUE-CIRAS	FAC
	Marion	Knoxville	Five Star Industries Inc	ISUE-CIRAS	TAC
	Marion	Pella	Pella Machine Inc	ISUE-CIRAS	BAC
	Marion	Pella	Pella Supply and Metal Fabrication	ISUE-CIRAS	BAC
	Marion	Pella	Pella Art and Graphics	ISUE-CIRAS	BAC
	Marion	Pella	Vermeer Manufacturing Co Inc	ISUE-CIRAS	TAC
	Marion	Knoxville	City of Knoxville	CTRE/CP Tech	PWD
	Marion	Knoxville	Marion Co.	CTRE/CP Tech	PWD
	Marion	Knoxville	Marion County Secondary Roads	CTRE/CP Tech	PWD
	Marion	Pella	LDJ Manufacturing	Industry Relations	TAC
	Marion	Pella	Vermeer Manufacturing	Industry Relations	TAC
	Marion	Pella	Vermeer	OBP	BAC, FAC, TAC
	Marion	Pella	Vermeer	OBP	BAC, FAC, TAC
	Marion	Pella	Vermeer	CCUR	FAC
	Marion	Pella	Pella Corp.	CCUR	FAC, TAC
	Marion	Pella	Central College	ISU Extension	OCOM
	Marion		Marion County Auditors	Extension CED	OCOM
	Marion		Marion County	Extension CED	PWD; TCOM
	Marion		Marion County tourism	Extension CED	FAC
Marion County		57			57
	Marshall	State Center	Eden Natural	OIPTT	BAC
	Marshall	Marshalltown	Fisher Controls	College of Business	FAC
	Marshall	Marshalltown	Lennox Industries	College of Engineering	PWD
	Marshall	Marshalltown	Fisher Controls	College of Engineering	PWD
	Marshall	Marshalltown	Emerson Process Management	College of Engineering	PWD
	Marshall	Marshalltown	TIG Distributing	IPRT Company Assistance-Materials	TAC
	Marshall	Marshalltown	Mechdyne	Virtual Reality Applications Center, IPRT	FAC, TAC
	Marshall	Rhodes	Distance Education Students = 1	Brenton Ctr for Ag Instruction	PWD
	Marshall	State Center	Distance Education Students = 1	Brenton Ctr for Ag Instruction	PWD
	Marshall	Marshalltown	Distance Education Students = 3	Brenton Ctr for Ag Instruction	PWD
	Marshall	Marshalltown	JBS Swift and Company	SEU - CDFIN	TAC
	Marshall	Marshalltown	Marshalltown Community College	EEOB - Debinski	OCOM
	Marshall	Marshalltown	PSEOA Distance Education Students = 1	Brenton Ctr for Ag Instruction	PWD
	Marshall	Melbourne	Sedlacek Wholesal Meat Co	Meat Science Extension	PWD
	Marshall	State Center	State Center Locker, Inc.	Meat Science Extension	PWD
	Marshall	State Center	Eden Natural Pork	Agricultural Education and Studies	FAC
	Marshall	Marshalltown	JBS Swift and Company	SEU - CDFIN	TAC
	Marshall	Marshalltown	Juvenile Court Services	Extension CED	PWD
	Marshall		Marshall County Auditors	Extension CED	OCOM
	Marshall	Marshalltown	Chamber of Commerce, Ag Task Force	ISU Extension, Marshall	OCOM
	Marshall	Marshalltown	Chamber of Commerce, Intergovernmental Group	ISU Extension, Marshall	OCOM
	Marshall	Marshalltown	Community Service Network Consortium	ISU Extension, Marshall	OCOM
	Marshall	Marshalltown	City of Marshalltown, Parks and Recreation	ISU Extension, Marshall	OCOM
	Marshall	Marshalltown	Child Care Providers, Independent Businesses	ISU Extension, Marshall	PWD
	Marshall	Marshalltown	Marshall County, elections/auditors office	ISU Extension, Marshall	BCOM
	Marshall	Marshalltown	EMBARC, entrepreneurial consortium	ISU Extension, Marshall	BAC
	Marshall	Marshalltown	Fisher Controls	ISU Extension	PWD
	Marshall	Marshalltown	Lighten Up Iowa-Public Health, Many businesses, Hy-Vee	ISU Extension	PWD
	Marshall	Marshalltown	Child Care Providers	ISU Extension	PWD
	Marshall	Marshalltown	Applebee's of Marshalltown	ISU Extension	PWD
	Marshall	Marshalltown	Bonanza	ISU Extension	PWD
	Marshall	Marshalltown	Hardee's	ISU Extension	PWD
	Marshall	Marshalltown	TIG Distributing	ISUE-CIRAS	TAC
	Marshall	Marshalltown	Lennox Manufacturing	ISUE-CIRAS	TAC

	Marshall	Marshalltown	Lennox Manufacturing	ISUE-CIRAS	TAC
	Marshall	Marshalltown	Bruin Manufacturing Co	ISUE-CIRAS	TAC
	Marshall	Marshalltown	Clapsaddle-Garber Associates, Inc.	CTRE/CP Tech	PWD
	Marshall	Marshalltown	Public Works Department	CTRE/CP Tech	PWD
	Marshall	Marshalltown	Consumers Energy	Industry Relations	BCOM
	Marshall	Marshalltown	JBS Swift and Company	SEU - CDFIN	TAC
	Marshall	Gillman	Tama County Township Trustees & Clerks	IDRO	TCOM
	Marshall	Gillman	Tama County Township Trustees & Clerks	Extension CED, IDRO	TCOM
	Marshall		25 entrepreneurs	Extension CED	BAC
	Marshall		Silos & Smokestacks National Heritage Area	Extension CED	OCOM
	Marshall	County	Youth and Shelter Services- Advisory Com	4-H Youth Development	OCOM
	Marshall	County	Marshall County Coalition for Youth	4-H Youth Development	OCOM
Marshall County		46			46
	Mills	Silver City	Silver City	Landscape Architecture, IDRO	BCOM
	Mills	Glenwood	Glenwood/Mills County Economic Development	College of Engineering	BCOM
	Mills	Glenwood	Brand Hydraulics	College of Engineering	PWD
	Mills	Pacific Junction	Feed Energy Company	Agricultural & Biosystem Engineering - STIR	TAC
	Mills	Hastings	Hastings Foods	Meat Science Extension	PWD
	Mills	Glenwood	Glenwood Community Schools	Agricultural Education and Studies	OCOM
	Mills	Malvern	Malvern	Botanical Center	PWD
	Mills	Silver City	Silver City	Landscape Architecture, IDRO	BCOM
	Mills		Glenwood State Bank	Extension CED	FAC/ BCOM
	Mills		Mills County Farm Bureau	Extension CED	FAC/ BCOM
	Mills		Multi-State Regional Development	Extension CED	FAC
	Mills		Rural Development Resource Center	Extension CED	FAC
	Mills		Southwest Iowa Latino Resource Center	Extension CED	BAC
	Mills	Glenwood	Mills County Community Coalition	Sherry Ford/ Mills Co. Ext.	FAC
	Mills	Glenwood	Glenwood/ Mills County Econ. Dev. Bd.	Sherry Ford/ Mills Co. Ext.	FAC
	Mills	all communities	Volunteer Income Tax Assistance	ISU Extension	OCOM
	Mills		City of Malvern	Extension CED	FAC/ BCOM
	Mills		Glenwood/Mills Co Chamber of Com and Economic Dev Found	Extension CED	FAC/ BCOM
	Mills		Mills County Auditors	Extension CED	OCOM
	Mills		Mills County Board of Supervisors	Extension CED	FAC/ BCOM
	Mills		Nex-Gen Biofuels, Inc.	Extension CED	BAC
	Mills		Renew Rural Iowa	Extension CED	FAC
	Mills		Rural Development Resource Center: Grow Iowa Fund; Wallace Fund; Southwest Iowa Coalition	Extension CED	BAC/ TCOM/ FAC/ BCOM
	Mills		Rural Development Summit	Extension CED	FAC
	Mills		Southwest Iowa Coalition	Extension CED	FAC
Mills County		25			25
	Mitchell	Staceyville	Park Masterplan	Landscape Architecture	BCOM
	Mitchell	Stacyville	Mitchell County Conservation Board	Landscape Architecture IDRO	TCOM
	Mitchell	Osage	Distance Education Students = 2	Brenton Ctr for Ag Instruction	PWD
	Mitchell	Riceville	Northern Iowa Grain Processors	CCUR	TAC
	Mitchell	Osage	Osage High School	College of Engineering / ABE (PLTW)	OCOM
	Mitchell	Osage	S&S Locker	Meat Science Extension	PWD
	Mitchell	Riceville	Ricevill Community Schools	Agricultural Education and Studies	OCOM
	Mitchell	Riceville	Northern Iowa Grain Processors	CCUR	TAC
	Mitchell	Staceyville	Park Masterplan	Extension CED, Landscape Architecture Extension	BCOM
	Mitchell	Staceyville	Staceyville	Extension CED	TCOM
	Mitchell	Stacyville	Mitchell County Conservation Board	Landscape Architecture Extension, IDRO	TCOM
	Mitchell		Silos & Smokestacks National Heritage Area	Extension CED	OCOM
	Mitchell	Riceville	Northern Iowa Grain Processors , LLC (N.I.G.P.)	ISUE-CIRAS	TAC
	Mitchell	Riceville	Northern Iowa Grain Processors	CCUR	TAC
Mitchell County		14			14
	Monona	Onawa	Board of Administrators	CRP	TCOM
	Monona	Onawa	Monona County Economic Development	College of Engineering	FAC
	Monona	Mapleton	Mapleton	Meat Science Extension	PWD
	Monona	Mapleton	Monona Co 4-H and FFA	Western Research Farm, ISU	OCOM
	Monona	Ute	Monona Co. Pork Producers	Western Research Farm, ISU	PWD
	Monona	Castana	MVAO Comm School	Western Research Farm, ISU	OCOM
	Monona	Mapleton	MVAO Comm School	Western Research Farm, ISU	OCOM
	Monona	Mapleton	Maple Valley Community Schools	Agricultural Education and Studies	OCOM
	Monona	Onawa	Board of Administrators	Extension CED, CRP Extension	TCOM
	Monona	Onawa	Nex-Gen Biofuels, Inc.	Extension CED	BAC
	Monona		Monona County Auditors	Extension CED	OCOM

	Monona		Rural Development Resource Center	Extension CED	FAC
	Monona		Rural Development Summit	Extension CED	FAC
	Monona	Mapleton	MapleValley Community School District	ISU Extension	PWD
	Monona	Onawa	West Monona Community School	ISU Extension	PWD
	Monona	Onawa	McDonald's Restaurant	ISU Extension	PWD
	Monona	Mapleton	Maple Heights Nursing Home	ISU Extension	PWD
	Monona	Onawa	Elmwood Care Center	ISU Extension	PWD
	Monona	Onawa	Loess Hills Biodiesel	ISUE-CIRAS	TAC
	Monona	Onawa	Omaha Nation Construction	ISUE-CIRAS	BAC
	Monona	Onawa	Elmwood Care Center	Families Extension	PWD
	Monona	Mapleton	Maple Heights Nursing Home	Families Extension	PWD
	Monona	Mapleton	Maple Valley School	Monona County Extension	OCOM
	Monona	Mapleton	Mapleton Community Leaders	Monona County Extension/Extension Families	FAC
	Monona	Mapleton	MapleValley Community School District	Families Extension	PWD
	Monona	Onawa	McDonald's Restaurant	Families Extension	PWD
	Monona	Onawa	West Monona Community School	Families Extension	PWD
	Monona	Onawa	West Monona School	Monona County Extension	PWD
	Monona	Onawa	Monona Co.	CTRE/CP Tech	PWD
	Monona		Monona County	Extension CED	OCOM
	Monona		Rural Development Resource Center: Grow Iowa Fund; Wallace Fund; Southwest Iowa Coalition	Extension CED	BAC/ TCOM/ FAC/ BCOM
Monona County		31			31
	Monroe	Eddyville	Cargill Corn Milling	Agriculture Experiment Station	TAC
	Monroe		ADLM Empowerment Board	CD-DIAL - Sociology Extension	OCOM
	Monroe		Monroe County Tourism	Extension CED	FAC
Monroe County		3			3
	Montgomery	Red Oak	City of Red Oak	Bill Drey	BCOM
	Montgomery	Stanton	City of Stanton	Bill Drey	BCOM
	Montgomery	Grant	City of Grant	Bill Drey	BCOM
	Montgomery	Elliott	City of Elliott	Bill Drey	BCOM
	Montgomery	County	Board of supervisors	Bill Drey	BCOM
	Montgomery	Red Oak	Fire Department	Bill Drey	OCOM
	Montgomery	County	Election people	Alan Ladd	PWD
	Montgomery	Red Oak	Minsa	Bill Drey	TCOM
	Montgomery	Red Oak	Red Oak Schools	Bill Drey	TCOM
	Montgomery	Red Oak	Farmers Market	Bill Drey	TCOM
	Montgomery	County	Board of supervisors	Bill Drey	TCOM
	Montgomery	Red Oak	MIDAS Council of Government	CRP	TCOM
	Montgomery	Red Oak	CAI Students	Crop Advisor Institute	PWD
	Montgomery	Villisca	Villisca Community School	Agricultural Education and Studies	FAC
	Montgomery	Red Oak	Agri-Solutions, Inc.	Extension CED	BAC
	Montgomery	Red Oak	Depot Hill Historic District, LLC	Extension CED	BAC
	Montgomery	Red Oak	Grupo Minsa Corporation	Extension CED	TAC
	Montgomery	Red Oak	Healthy Turf Lawn Care	Extension CED	BAC
	Montgomery	Red Oak	MIDAS Council of Government	Extension CED, CRP	TCOM
	Montgomery	Red Oak	Nex-Gen Biofuels, Inc.	Extension CED	BAC
	Montgomery	Red Oak	Nishna Productions	Extension CED	TAC
	Montgomery	Red Oak	Pudgy Pumpkin Patch Gift Shop	Extension CED	BAC
	Montgomery		City of Villisca	Extension CED	FAC/ BCOM
	Montgomery		Emerald Hills Dairy Consortium	Extension CED	BAC
	Montgomery		Oakview Construction	Extension CED	FAC/ BCOM
	Montgomery		Red Oak Chrysler Dodge Jeep	Extension CED	FAC/ BCOM
	Montgomery		Red Oak Industrial Foundation	Extension CED	FAC/ BCOM
	Montgomery		Renew Rural Iowa	Extension CED	FAC
	Montgomery		Southwest Iowa Latino Resource Center	Extension CED	BAC
	Montgomery	all communities	Volunteer Income Tax Assistance	ISU Extension	OCOM
	Montgomery	Elliott	Montgomery Co.	CTRE/CP Tech	PWD
	Montgomery	Red Oak	Neenah Foundry	CTRE/CP Tech	PWD
	Montgomery	Red Oak	City Administrator	CRP	TCOM
	Montgomery	Red Oak	City Administrator	Extension CED, CRP	TCOM
	Montgomery	Red Oak	Red Oak	Extension CED	TCOM
	Montgomery		Agri-solutions	Extension CED	FAC/ BCOM
	Montgomery		City of Red Oak	Extension CED	FAC/ BCOM
	Montgomery		City of Stanton	Extension CED	FAC/ BCOM
	Montgomery		Great Western Bank - Red Oak	Extension CED	FAC/ BCOM
	Montgomery		Great Western Bank - Stanton	Extension CED	FAC/ BCOM
	Montgomery		Houghton State Bank	Extension CED	FAC/ BCOM
	Montgomery		Montgomery Co Development Corp	Extension CED	FAC/ BCOM
	Montgomery		Montgomery County Auditors	Extension CED	OCOM
	Montgomery		Montgomery County Economic Development Corp., Villisca Economic Development Corp.; Red Oak Industrial Foundation	Extension CED	BCOM
	Montgomery		Montgomery County Memorial Hosp	Extension CED	FAC/ BCOM
	Montgomery		Montgomery County Supervisors	Extension CED	FAC/ BCOM
	Montgomery		Multi-State Regional Development	Extension CED	FAC
	Montgomery		Red Oak Chamber of Commerce	Extension CED	FAC/ BCOM
	Montgomery		Regional Foods Working Group	Extension CED	BAC

	Montgomery		Regional Marketing	Extension CED	BCOM
	Montgomery		Rural Development Resource Center	Extension CED	FAC
	Montgomery		Rural Development Resource Center: Grow Iowa Fund; Wallace Fund; Southwest Iowa Coalition	Extension CED	BAC/ TCOM/ FAC/ BCOM
	Montgomery		Rural Development Summit	Extension CED	FAC
	Montgomery		Southwest Iowa Coalition	Extension CED	FAC
Montgomery County		54			54
	Muscatine	Muscatine	Greater Muscatine Chamber of Commerce and Industry	OIPTT	FAC
	Muscatine	Muscatine	Northern Filter Media	OIPTT	FAC
	Muscatine	Muscatine	McKee Button	College of Business	FAC
	Muscatine	Muscatine	Grain Processing Corporation	College of Engineering	FAC
	Muscatine	Muscatine	Northern Filter Media	College of Engineering	FAC
	Muscatine	Muscatine	Grain Processing Corporation	Center for Catalysis, IPRT	TAC, TT
	Muscatine	Muscatine	Grain Processing Corporation	Center for Sustainable Environmental Technologies, IPRT	FAC
	Muscatine	Muscatine	Tire Environmental Services, Inc.	IPRT Company Assistance-Materials	TAC
	Muscatine	Muscatine	McKee Button Company	IPRT Company Assistance-NDE	TAC
	Muscatine	Muscatine	Tire Environmental Services, Inc.	IPRT Company Assistance-NDE	TAC
	Muscatine	Muscatine	Grain Processing Corporation	IPRT Company Assistance-Technology Commercialization	TT
	Muscatine	Muscatine	HNI Technologies, Inc	IPRT Company Assistance-Technology Commercialization	TT
	Muscatine	Muscatine	Northern Filter Media	IPRT Company Assistance-Technology Commercialization	TT
	Muscatine	West Liberty	CAI Students	Crop Advisor Institute	PWD
	Muscatine	Muscatine	Distance Education Students = 1	Brenton Ctr for Ag Instruction	PWD
	Muscatine	Muscatine	Grain Processing Corp.	CCUR	FAC, TAC
	Muscatine	Muscatine	HNI	NREM	TAC
	Muscatine	Muscatine	HNI, Corp.	CCUR	TT
	Muscatine	Muscatine	Muscatine Comm H.S.	College of Engineering / ABE (PLTW)	OCOM
	Muscatine	Muscatine	R3 Composites and AgVantage	Chemistry & CCUR	TT
	Muscatine	West Liberty	West Liberty Foods, LLC	Meat Science Extension	PWD
	Muscatine	Muscatine	Muscatine Community School	Agricultural Education and Studies	FAC
	Muscatine	Muscatine	Grain Processing Corp.	CCUR	FAC, TAC
	Muscatine	Muscatine	HNI, Corp.	CCUR	TT
	Muscatine	Muscatine	R3 Composites and AgVantage	Chemistry & CCUR	TT
	Muscatine	Muscatine	Grain Processing Corp.	Nutrition Wellness Research Center	TAC
	Muscatine	West Liberty	Innovative Growers, L.L.C.	ISURF	TT
	Muscatine	West Liberty	Innovative Growers, L.L.C.	ISURF	TT
	Muscatine	West Liberty	Innovative Growers, L.L.C.	ISURF	TT
	Muscatine	West Liberty	Innovative Growers, L.L.C.	ISURF	TT
	Muscatine	Muscatine	Grain Processing Corporation	ISURF	TT
	Muscatine	Muscatine	Grain Processing Corporation	ISURF	TT
	Muscatine	Atalissa	city of Atalissa		FAC/ OCOM
	Muscatine	Muscatine	city of Muscatine	Extension CED	FAC
	Muscatine	Nichols	Nichols	Extension CED	FAC/ OCOM
	Muscatine	Stockton	Durant Community Chest	Extension CED	PWD
	Muscatine	West Liberty	West Liberty	Extension CED	TCOM/ OCOM
	Muscatine	Wilton	Wilton	Extension CED	FAC
	Muscatine		Muscatine County Auditors	Extension CED	OCOM
	Muscatine	Muscatine	John Wunder Law Office, Muscatine	Johnson County Extension	PWD
	Muscatine	Muscatine	Diversity Service Center of Iowa, Muscatine	Johnson County Extension	PWD
	Muscatine	Muscatine	Applebee's	ISU Extension	PWD
	Muscatine	Muscatine	Which Wich	ISU Extension	PWD
	Muscatine	Muscatine	Tire-tech Environmental Systems	ISUE-CIRAS	TAC
	Muscatine	Muscatine	McKee Button Co Inc	ISUE-CIRAS	TAC
	Muscatine	Muscatine	Tire-tech Environmental Systems	ISUE-CIRAS	BAC
	Muscatine	Muscatine	McKee Button Co Inc	ISUE-CIRAS	BAC
	Muscatine	Muscatine	Event in Muscatine County	ISUE-CIRAS	BAC
	Muscatine	Muscatine	Muscatine Co.	CTRE/CP Tech	PWD
	Muscatine	Muscatine	Muscatine Co. Engineer	CTRE/CP Tech	PWD
	Muscatine	Muscatine	Greater Muscatine Chamber of Commerce & Industry	Industry Relations	BCOM
	Muscatine	Muscatine	Abbott & Associates	Industry Relations	BCOM
	Muscatine	Muscatine	Grain Processing Corp.	Industry Relations	TAC
	Muscatine	Muscatine	Northern Filter Media, Inc.	Industry Relations	TAC
	Muscatine	Muscatine	Grain Processing Corp.	Industry Relations	TAC
	Muscatine	Muscatine	R3 Composites	Industry Relations	TAC
	Muscatine	Muscatine	Grain Processing Corp.	Industry Relations	TAC
	Muscatine	Muscatine	Grain Processing Corporation	OBP	BAC, FAC, TAC
	Muscatine	Muscatine	Grain Processing Corp.	CCUR	FAC, TAC
	Muscatine	Muscatine	HNI, Corp.	CCUR	TT

	Muscatine	Muscatine	R3 Composites and AgVantage	Chemistry & CCUR	TT
	Muscatine		County Local Housing Trust Fund	Extension CED	TCOM
Muscatine County	62				62
	O'Brien	Sheldon	Taco John's	ISU Extension	PWD
	O'Brien	Paullina	Distance Education Students = 2	Brenton Ctr for Ag Instruction	PWD
	O'Brien	Sanborn	Distance Education Students = 4	Brenton Ctr for Ag Instruction	PWD
	O'Brien	Sheldon	Sheldon Community School	Agricultural Education and Studies	FAC
	O'Brien	Paullina	Dairy Farmers	Extension CED	BCOM
	O'Brien	Paullina	Paullina	Extension CED	OCOM
	O'Brien		O'Brien County Auditors	Extension CED	OCOM
	O'Brien	Paullina	South O'Brien Comm. School	ISU Extension	PWD
	O'Brien	Primghar	NW IA Health Center/RCF	ISU Extension	PWD
	O'Brien	Sheldon	NW IA Community College	ISU Extension	PWD
	O'Brien	Sheldon	NW IA Health Center	ISU Extension	PWD
	O'Brien	Sheldon	Village NW Limited	ISU Extension	PWD
	O'Brien	Hartley	Community Memorial Health Center	ISU Extension	PWD
	O'Brien	Primghar	Kids Kampus	ISU Extension	PWD
	O'Brien	Sanborn	Kids Express Day Care	ISU Extension	PWD
	O'Brien	Paullina	Tots on Ten Daycare	ISU Extension	PWD
	O'Brien	Sheldon	Kentucky Fried Chicken	ISU Extension	PWD
	O'Brien	Sheldon	Rosenboom Machine and Tool Inc	ISUE-CIRAS	TAC
	O'Brien	Sheldon	Rosenboom Machine and Tool Inc	ISUE-CIRAS	TAC
	O'Brien	Sheldon	Rosenboom Machine and Tool Inc	ISUE-CIRAS	TAC
	O'Brien	Sheldon	Rosenboom Machine and Tool Inc	ISUE-CIRAS	TAC
	O'Brien		24 election officials certified	CED	OCOM
	O'Brien		Emergency Management Agency	Lyon & Osceola Extension	OCOM
	O'Brien	Sheldon	Kentucky Fried Chicken	Families Extension	PWD
	O'Brien	Sanborn	Kids Express Day Care	Family Life Staff	PWD
	O'Brien	Primghar	Kids Kampus	Family Life Staff	PWD
	O'Brien		NW Ia Developers Coalition	Lyon & Osceola Extension	BCOM
	O'Brien		NW Ia Developers Coalition	Lyon & Osceola Extension	FAC
	O'Brien		NW Ia Developers Coalition	Lyon & Osceola Extension	OCOM
	O'Brien	Sheldon	Taco John's	Families Extension	PWD
	O'Brien	Paullina	Tots on Ten Daycare	Family Life Staff	PWD
	O'Brien	Primghar	O'Brien Co.	CTRE/CP Tech	PWD
	O'Brien		24 election officials certified	Extension CED	OCOM
	O'Brien	Paullina	O'Brien County Economic Development	ISU - O'Brien County Extension	FAC
O'Brien County	34				34
	Osceola	Sibley	Commjunity Daycare Center	ISU Extension	PWD
	Osceola	Sibley	Commjunity Daycare Center	Family Life Staff	PWD
	Osceola		27 election officials certified	CED	OCOM
	Osceola		Emergency Management Agency	Lyon & Osceola Extension	OCOM
	Osceola		NW Ia Developers Coalition	Lyon & Osceola Extension	BCOM
	Osceola		NW Ia Developers Coalition	Lyon & Osceola Extension	FAC
	Osceola		NW Ia Developers Coalition	Lyon & Osceola Extension	OCOM
	Osceola		Osceola Farm City Mixer	Osceola Extension	FAC
	Osceola		Public Health	Osceola Extension	OCOM
	Osceola		27 election officials certified	Extension CED	OCOM
	Osceola		Osceola County Auditors	Extension CED	OCOM
Osceola County	11				11
	Page	Shenandoah	City Administrator	CRP	TCOM
	Page	Shenandoah	Shenandoah Chamber and Industry Association	College of Engineering	BCOM
	Page	Clarinda	Clarinda Economic Development Corporation	College of Engineering	BCOM
	Page	Clarinda	NSK-AKS Precision Ball Company	IPRT Company Assistance-NDE	TAC
	Page	Northboro	McCoy Locker	Meat Science Extension	PWD
	Page	Clarinda	Naturally Iowa, LLC	Extension CED	BAC
	Page	Shenandoah	City Administrator	Extension CED, CRP Extension	TCOM
	Page		City of Shenandoah	Extension CED	FAC/ BCOM
	Page		Lisle Corporation	Extension CED	FAC/ BCOM
	Page		Multi-State Regional Development	Extension CED	FAC
	Page		Nishna Productions	Extension CED	TAC
	Page		Page - ISU Extension County Office Marketing Surveys	CD-DIAL - Sociology Extension	BAC
	Page		Southwest Iowa Adolescent Pregnancy Prevention Program	Page County Extension - Youth and GSF	OCOM
	Page		WIC	Page County Extension - GSF	OCOM
	Page		West Central Development	Page County Extension - GSF	OCOM
	Page	Shenandoah	Shenandoah Community School	Page County Extension - Youth	OCOM
	Page	Essex	Essex Community School	Page County Extension - Youth	OCOM
	Page	Clarinda	Clarinda Community School	Page County Extension - Youth	OCOM
	Page	Clarinda	Clarinda Lutheran School	Page County Extension - Youth	OCOM

	Page	College Springs	South Page Community School	Page County Extension - Youth	OCOM
	Page	Clarinda	Lied Center	Page County Extension - Youth	OCOM
	Page		Page County Fair Board	Page County Extension	OCOM
	Page	Clarinda	Grandma's House Day Care	Page County Extension - Youth	OCOM
	Page	Clarinda	Noah's Ark Pre-School	Page County Extension - Youth	OCOM
	Page	Clarinda	Clarinda Community Pre-School	Page County Extension - Youth	OCOM
	Page	Shenandoah	Turnbull Day Care/Pre-School	Page County Extension - Youth	OCOM
	Page	Essex	Essex Day Care/Pre-School	Page County Extension - Youth	OCOM
	Page	College Springs	Happy Hearts Day Care/Pre-School	Page County Extension - Youth	OCOM
	Page	College Springs	South Page Community Pre-School	Page County Extension - Youth	OCOM
	Page	Clarinda	Head Start	Page County Extension - Youth	OCOM
	Page	Shenandoah	Head Start	Page County Extension - Youth	OCOM
	Page	Shenandoah	Hispanic Center	Page County Extension - Youth and GSF	OCOM
	Page	Clarinda	Jump Start	Page County Extension - GSF	OCOM
	Page	all communities	Volunteer Income Tax Assistance	ISU Extension	OCOM
	Page		Event in Page County	ISUE-CIRAS	FAC
	Page	Braddyville	H and H Trailer	ISUE-CIRAS	BAC
	Page	College Springs	Page Co.	CTRE/CP Tech	PWD
	Page		Bank Iowa - Shenandoah	Extension CED	FAC/ BCOM
	Page		City National Bank - Shenandoah	Extension CED	FAC/ BCOM
	Page		Clarinda Economic Development Corp., Shenandoah Chamber and Industry Association	Extension CED	BCOM
	Page		Page County Farm Bureau	Extension CED	FAC/ BCOM
	Page		Page County State Bank	Extension CED	FAC/ BCOM
	Page		Regional Marketing	Extension CED	BCOM
	Page		Renew Rural Iowa	Extension CED	FAC
	Page		Rural Development Resource Center	Extension CED	FAC
	Page		Rural Development Resource Center: Grow Iowa Fund; Wallace Fund; Southwest Iowa Coalition	Extension CED	BAC/ TCOM/ FAC/ BCOM
	Page		Rural Development Summit	Extension CED	FAC
	Page		Southwest Iowa Coalition	Extension CED	FAC
	Page		Southwest Iowa Latino Resource Center	Extension CED	BAC
Page County		49			49
	Palo Alto	West Bend	eresourceful	OIPTT	BCOM
	Palo Alto	Emmetsburg	Emmetsburg	Landscape Architecture, IDRO	BCOM
	Palo Alto	Emmetsburg	City of Emmetsburg	College of Engineering	BCOM
	Palo Alto	Graettinger	Daybreak Foods	Animal Science-Bregendahl	TAC
	Palo Alto	Graettinger	Distance Education Students = 1	Brenton Ctr for Ag Instruction	PWD
	Palo Alto	Ruthven	Distance Education Students = 3	Brenton Ctr for Ag Instruction	PWD
	Palo Alto	Ruthven	Ruthven Meat Processing	Meat Science Extension	PWD
	Palo Alto	Emmetsburg	Iowa Lakes Community College	Agricultural Education and Studies	OCOM
	Palo Alto	Emmetsburg	Emmetsburg	Landscape Architecture, IDRO	BCOM
	Palo Alto	Emmetsburg	Iowa Lakes Community College	David Stender	FAC
	Palo Alto	Emmetsburg	Kerber Milling	David Stender	BAC
	Palo Alto	Emmetsburg	Little Learns Child Care Center	ISU Extension	PWD
	Palo Alto	Graettinger	Shaver Manufacturing Co Inc	ISUE-CIRAS	TAC
	Palo Alto	Emmetsburg	Little Learns Child Care Center	Family Life Staff	PWD
	Palo Alto	Emmetsburg	Palo Alto Co.	CTRE/CP Tech	PWD
	Palo Alto		Livestock producers and regulators	Extension CED	TCOM
	Palo Alto		Palo Alto County Auditors	Extension CED	OCOM
Palo Alto County		17			17
	Plymouth	Le Mars	Harker's distribution, Inc,	Meat Science Extension	PWD
	Plymouth	Le Mars	Community of Le Mars	ISU Extension	PWD
	Plymouth	Le Mars	Floyd Valley Hospital	ISU Extension	PWD
	Plymouth	Le Mars	Le Mars Community School	ISU Extension	PWD
	Plymouth	Le Mars	American Bank	ISU Extension	PWD
	Plymouth	Le Mars	Gehlen Catholic High School	ISU Extension	PWD
	Plymouth	Le Mars	Medical Associates	ISU Extension	PWD
	Plymouth	Le Mars	NIPCO	ISU Extension	PWD
	Plymouth	Le Mars	NW REC	ISU Extension	PWD
	Plymouth	Le Mars	Wells Blue Bunny	ISU Extension	PWD
	Plymouth	Remsen	Remsen-Union Comm. School	ISU Extension	PWD
	Plymouth	Akron	Akron Children's Center	ISU Extension	PWD
	Plymouth	Remsen	Great Beginnings Preschool	ISU Extension	PWD
	Plymouth	LeMars	Guardian Angels Preschool	ISU Extension	PWD

	Plymouth	LeMars	LeMars Daycare	ISU Extension	PWD
	Plymouth	LeMars	Prime Living Apartments	ISU Extension	PWD
	Plymouth	Remsen	Mid-Sioux Opportunity	ISU Extension	PWD
	Plymouth	LeMars	Cuisine Connection	ISU Extension	PWD
	Plymouth	LeMars	Arby's Restaurant	ISU Extension	PWD
	Plymouth	LeMars	Taco John's	ISU Extension	PWD
	Plymouth	Merrill	Negron's Mexican Food	ISU Extension	PWD
	Plymouth	LeMars	School Foodservice Association-NW Iowa	ISU Extension	PWD
	Plymouth	Le Mars	Wells' Dairy Inc	ISUE-CIRAS	TAC
	Plymouth		24 election officials certified	CED	OCOM
	Plymouth		8 small businesses	CED (Access eCommerce)	BAC
	Plymouth	Akron	Akron Care Center	Communities Extension	OCOM
	Plymouth	Akron	Akron Children's Center	Family Life Staff	PWD
	Plymouth	Le Mars	American Bank	Communities Extension	OCOM
	Plymouth	Le Mars	Arby's Restaurant	Families Extension	PWD
	Plymouth	Le Mars	Cuisine Connection	Families Extension	PWD
	Plymouth		Emergency Management Agency	Lyon & Osceola Extension	OCOM
	Plymouth	Le Mars	First National Bank	Communities Extension	OCOM
	Plymouth	Le Mars	Good Samaritan Village of Le Mars	Families Extension	OCOM
	Plymouth	Remsen	Great Beginnings Preschool	Family Life Staff	PWD
	Plymouth	LeMars	Guardian Angels Preschool	Family Life Staff	PWD
	Plymouth	LeMars	Harker's Foods	Families Extension	OCOM
	Plymouth	Le Mars	Le Mars Chamber of Commerce	Communities Extension	OCOM
	Plymouth	Le Mars	Le Mars Community School	Families Extension	OCOM
	Plymouth	Le Mars	Le Mars Physical Therapy	Communities Extension	OCOM
	Plymouth	Le Mars	Le Mars Police Dept.	Families Extension	OCOM
	Plymouth	LeMars	LeMars Daycare	Family Life Staff	PWD
	Plymouth	Le Mars	Life Skills Training Center	Families Extension	OCOM
	Plymouth	Le Mars	McClintock Insurance Co.	Communities Extension	OCOM
	Plymouth	Remsen	Mid-Sioux Opportunity	Families Extension	PWD
	Plymouth	Merrill	Negron's Mexican Food	Families Extension	PWD
	Plymouth	Le Mars	NIPCO (Northwest Ia Power Cooperative	Agriculture Extension	FAC
	Plymouth	Le Mars	NIPCO (Northwest Ia Power Cooperative	Families Extension	OCOM
	Plymouth	Le Mars	Northwest Iowa Credit Union	Communities Extension	OCOM
	Plymouth		NW Ia Developers Coalition	Lyon & Osceola Extension	BCOM
	Plymouth		NW Ia Developers Coalition	Lyon & Osceola Extension	FAC
	Plymouth		NW Ia Developers Coalition	Lyon & Osceola Extension	OCOM
	Plymouth	Akron	People's Bank	Communities Extension	OCOM
	Plymouth		Plymouth County Conservation	Communities	FAC
	Plymouth	Le Mars	Plymouth Manor Care Center	Families Extension	OCOM
	Plymouth	Le Mars	Prime Living Apartments	Families Extension	PWD
	Plymouth	Le Mars	Primebank	Communities Extension	OCOM
	Plymouth	Le Mars	School Foodservice Association-NW Iowa	Families Extension	PWD
	Plymouth	Le Mars	Taco John's	Families Extension	PWD
	Plymouth	Le Mars	Williams & Co.	Communities Extension	OCOM
	Plymouth	Le Mars	City of LeMars	CTRE/CP Tech	PWD
	Plymouth	Le Mars	Plymouth Co.	CTRE/CP Tech	PWD
	Plymouth	Le Mars	Schlotfeldt Engineering	CTRE/CP Tech	PWD
	Plymouth		24 election officials certified	Extension CED	OCOM
	Plymouth		8 small businesses	Extension CED	BAC
	Plymouth		Ecumenical Institute	CD-DIAL - Sociology Extension	BAC
	Plymouth		Plymouth County Auditors	Extension CED	OCOM
	Plymouth		Plymouth - ISU Extension County Office Marketing Surveys	CD-DIAL - Sociology Extension	BAC
	Plymouth		Plymouth County	Extension CED	OCOM/ FAC/ TAC
	Plymouth		Plymouth County Conservation	Extension CED	FAC
	Plymouth	Le Mars	City of LeMars - LeMars Wellness Center	Families Extension	OCOM
	Plymouth	Le Mars	Curves	Families Extension	OCOM
	Plymouth	Le Mars	Floyd Valley Hospital	Families Extension	OCOM
	Plymouth	Remsen	Mid-Sioux Opportunity	Families Extension	OCOM
	Plymouth	Le Mars	Wells Dairy	Families Extension	OCOM
Plymouth County		74			74
	Pocahontas	Pocahontas	City of Pocahontas	IDRO	BCOM/ TCOM
	Pocahontas	Pocahontas	Fireplace, Inc.	College of Engineering	TAC
	Pocahontas	Pocahontas	Distance Education Students = 1	Brenton Ctr for Ag Instruction	PWD
	Pocahontas	Gilmore City	Pro Cooperative	Economics, CCUR & others	FAC
	Pocahontas	Gilmore City	Pro Cooperative	Economics, CCUR & others	FAC
	Pocahontas	Palmer	Larry Siefken	ISURF	TT
	Pocahontas	Pocahontas	City of Pocahontas	IDRO	BCOM/ TCOM
	Pocahontas	Laurens	Bobalee Inc	ISUE-CIRAS	TAC
	Pocahontas	Laurens	Pengo	ISUE-CIRAS	TAC
	Pocahontas	Pocahontas	City of Pocahontas	Extension	BCOM
	Pocahontas	Pocahontas	Pocahontas Community Hospital	Extension	OCOM
	Pocahontas	Rolfe	Pocahontas County Dairy Committee	Extension	FAC
	Pocahontas	Countywide	Pocahontas County Dairy Committee	Extension	FAC
	Pocahontas	Countywide	Pocahontas County Foundation	Extension	OCOM
	Pocahontas	Laurens	Positech	ISU Extension	BAC
	Pocahontas	Countywide	Regional Economic Leadership Group	Extension	BCOM

	Pocahontas	Pocahontas	Pocahontas Co.	CTRE/CP Tech	PWD
	Pocahontas	Gilmore City	Pro Cooperative	Economics, CCUR & others	FAC
	Pocahontas		City of Pocahontas	IDRO	BAC
	Pocahontas		City of Pocahontas	IDRO	BAC
	Pocahontas		Livestock producers and regulators	Extension CED	TCOM
	Pocahontas		Pocahontas County Auditors	Extension CED	OCOM
Pocahontas County		22			22
	Polk	Johnston	ChildServe	Extension CED	PWD
		Johnston	NE Iowa Community Development Conference	Extension CED	FAC
	Polk	Johnston	Planning & Zoning Comm. Member	Extension CED, CRP Extension	TCOM
	Polk	Johnston	Rain & Hail	Extension CED	PWD
	Polk	Johnston	City of Johnston	Extension CED	PWD
	Polk	Des Moines	Association of Iowa Fairs	CEED	FAC
	Polk	Des Moines	Iowa FFA Association	CEED	OCOM
	Polk	Des Moines	Iowa State Fair	CEED, OA, CYC, FS	OCOM
	Polk	Clive	Iowa Pork Producers Association	Veterinary Extension	7, 8
	Polk	Clive	National Pork Board	Veterinary Extension	3, 7, 8
	Polk	Clive	National Pork Producer Council	Veterinary Extension	3, 7, 8
	Polk	Ankeny	Iowa Veterinary Medical Association	Veterinary Extension	5, 7
	Polk	West Des Moines	Hy-Vee	College of Business	BAC
				IPRT Company Assistance- Technology Commercialization	TT
	Polk	Clive	Iowa Digestive Disease Center	Extension CED	PWD
	Polk	West Des Moines	Dave Nagel Consultant	Extension CED	PWD
	Polk	West Des Moines	unknown	Extension CED	PWD
	Polk	Des Moines	Feed Energy Company	OIPTT	BAC
	Polk	Ankeny	Ag Resources Development Group, LLC	OIPTT	FAC
	Polk	Des Moines	Iowa Department of Economic Development	OIPTT	FAC
	Polk	Urbandale	Mid-Iowa SBDC	OIPTT	BCOM
	Polk	West Des Moines	Iowa Farm Bureau	OIPTT	BCOM
	Polk	West Des Moines	ABC Virtual	OIPTT	BAC
	Polk	Des Moines	McKee, Voorhees & Sease	OIPTT	FAC
	Polk	Ankeny	DMACC	OIPTT	FAC
	Polk	Des Moines	Pardee and Associates	OIPTT	FAC
	Polk	Johnston	Model Technologies	OIPTT	FAC
	Polk	Des Moines	Alliant Energy	OIPTT	FAC
	Polk	Des Moines	Iowa Association of Business and Industry	OIPTT	FAC
	Polk	Des Moines	Agri Industries	College of Business	BAC
	Polk	Des Moines	Stork Twin Cities Testing	College of Business	FAC
	Polk	Des Moines	Eagle Sign Company	College of Business	FAC
	Polk	Des Moines	Translux/Fairplay	College of Business	BAC
	Polk	Des Moines	City of Des Moines/Top Value Initiative	College of Business	FAC
	Polk	Des Moines	Harper Brush	College of Business	FAC
	Polk	Johnston	Pioneer Hybrid International	College of Business	FAC
	Polk	Des Moines	Principal Financial Group -- Document Services	College of Business	FAC
	Polk	Des Moines	Growmark	College of Business	BAC
	Polk	Alleman	City of Alleman	IDRO	BCOM/ TCOM
	Polk	Clive	Clive 3D GIS Training	Landscape Architecture	PWD
	Polk	Des Moines	Iowa Department of Public Health	IDRO	BCOM
	Polk	Des Moines	Mercy Capitol Hospital	Landscape Architecture	BAC
	Polk	Johnston	Administrator	CRP	TCOM
	Polk	Johnston	City Administrator	CRP	TCOM
	Polk	Johnston	City Clerk	CRP	TCOM
	Polk	Johnston	Planning & Zoning	CRP	TCOM
	Polk	Johnston	Zoning Commission	CRP	TCOM
	Polk	Mitchellville	City of Mitchellville	IDRO	BCOM
	Polk	Windsor Heights	Zoning Commission	CRP	TCOM
	Polk	Des Moines	Greater Des Moines Partnership	College of Engineering	FAC
	Polk	Des Moines	Schneckloth Group	College of Engineering	FAC
	Polk	Clive	Fischer Scientific	College of Engineering	FAC
	Polk	Johnston	Pioneer Hi-Bred International	College of Engineering	TAC
	Polk	Urbandale	Iowa Pork Producers	College of Engineering	TAC
	Polk	Des Moines	MidAmerican Energy Company	College of Engineering	TAC
	Polk	West Des Moines	Iowa Farm Bureau	College of Engineering	FAC
	Polk	Des Moines	Clement Claibourne	College of Engineering	PWD
	Polk	Des Moines	Guide One	College of Engineering	PWD
	Polk	West Des Moines	ING	College of Engineering	PWD
	Polk	Altoona	Iowa Interactive	College of Engineering	PWD
	Polk	Des Moines	Kemin Industries	College of Engineering	PWD
	Polk	Clive	Phibred	College of Engineering	PWD
	Polk	Johnston	Pioneer Hi-Bred International	College of Engineering	PWD
	Polk	Ankeny	Principal Financial Group	College of Engineering	PWD
	Polk	Urbandale	ProCAD Desgins	College of Engineering	PWD
	Polk	Ankeny	Snyder and Associates, Inc.	College of Engineering	PWD
	Polk	Altoona	Southeast Polk Community Schools	College of Engineering	PWD
	Polk	Des Moines	United Airlines	College of Engineering	PWD
	Polk	West Des Moines	Hy-Vee, Inc.	College of Engineering	PWD
	Polk	Urbandale	John Deere Credit	College of Engineering	PWD
	Polk	West Des Moines	Life Care Services	College of Engineering	PWD
	Polk	Des Moines	Meredith Corporation	College of Engineering	PWD
	Polk	Des Moines	National Pork Board	College of Engineering	PWD
	Polk	Urbandale	Regulus Group LLC	College of Engineering	PWD
	Polk	Johnston	Syrmel, Inc.	College of Engineering	PWD

	Polk	West Des Moines	Wells Fargo Home Mortgage	College of Engineering	PWD
	Polk	Des Moines	Compressor Controls Corporation	College of Engineering	PWD
	Polk	Ankeny	Iowa Foundation for Medical Care	College of Engineering	PWD
	Polk	Ankeny	John Deere	College of Engineering	PWD
	Polk	Ankeny	Iowa Association of Municipal Utilities	Center for Physical and Computational Mathematics, IPRT	TCOM
	Polk	Des Moines	Iowa Farm Bureau	Center for Sustainable Environmental Technologies, IPRT	FAC
	Polk	Des Moines	CMT, Inc.	IPRT Company Assistance-Materials	TAC
	Polk	Des Moines	Dee Zee, Inc.	IPRT Company Assistance-Materials	TAC
	Polk	Des Moines	Hallett Materials Company	IPRT Company Assistance-Materials	TAC
	Polk	West Des Moines	Ten Square Global, Inc.	IPRT Company Assistance-Materials	TAC
	Polk	Des Moines	John Deere Des Moines Works	IPRT Company Assistance-NDE	TAC
	Polk	Urbandale	John Deere Worldwide Agricultural Equipment Division	IPRT Company Assistance-NDE	TAC
	Polk	West Des Moines	Cellencor, Inc	IPRT Company Assistance-Technology Commercialization	TT
	Polk	Ankeny	Des Moines Area Community College	Midwest Forensics Resource Center, IPRT	OCOM
	Polk	Des Moines	Des Moines Police Department	Midwest Forensics Resource Center, IPRT	PWD
	Polk	Ankeny	Iowa Division of Criminal Investigation Crime Laboratory	Midwest Forensics Resource Center, IPRT	OCOM
	Polk	Ankeny	Iowa Division of Criminal Investigation Crime Laboratory	Midwest Forensics Resource Center, IPRT	PWD
	Polk	Ankeny	Iowa Division of Criminal Investigation, DMACC	Midwest Forensics Resource Center, IPRT	TCOM
	Polk	Des Moines	Principal Financial Group	Virtual Reality Applications Center, IPRT	FAC
	Polk	Des Moines	Wells Fargo	Virtual Reality Applications Center, IPRT	FAC
	Polk	Ankeny	AGS, Inc.	Ag and Biosystems Engineering & CCUR	TAC
	Polk	Ankeny	Ankeny Cold Storage LLC	Meat Science Extension	PWD
	Polk	Des Moines	Brewer Meats, Inc.	Meat Science Extension	PWD
	Polk	Altoona	CAI Students	Crop Advisor Institute	PWD
	Polk	Des Moines	City of Des Moines	NREM	BCOM, OCOM
	Polk	Des Moines	Cummins Central Power	Agricultural & Biosystem Engineering - STIR	TAC
	Polk	Des Moines	DeeZee Manufacturing	Joseph Chen - ABE and CIRAS	TAC
	Polk	Des Moines	Des Moines teachers	Families Extension	PWD
	Polk	Clive	Distance education student - BRT 501	OBP/ABE (Raman)	PWD
	Polk	Alleman	Distance Education Students = 1	Brenton Ctr for Ag Instruction	PWD
	Polk	Elkhart	Distance Education Students = 1	Brenton Ctr for Ag Instruction	PWD
	Polk	Mitchellville	Distance Education Students = 1	Brenton Ctr for Ag Instruction	PWD
	Polk	Ankeny	Distance Education Students = 10	Brenton Ctr for Ag Instruction	PWD
	Polk	West Des Moines	Distance Education Students = 14	Brenton Ctr for Ag Instruction	PWD
	Polk	Clive	Distance Education Students = 2	Brenton Ctr for Ag Instruction	PWD
	Polk	Polk City	Distance Education Students = 2	Brenton Ctr for Ag Instruction	PWD
	Polk	Des Moines	Distance Education Students = 28	Brenton Ctr for Ag Instruction	PWD
	Polk	Bondurant	Distance Education Students = 3	Brenton Ctr for Ag Instruction	PWD
	Polk	Grimes	Distance Education Students = 4	Brenton Ctr for Ag Instruction	PWD
	Polk	Altoona	Distance Education Students = 5	Brenton Ctr for Ag Instruction	PWD
	Polk	Johnston	Distance Education Students = 5	Brenton Ctr for Ag Instruction	PWD
	Polk	Urbandale	Distance Education Students = 6	Brenton Ctr for Ag Instruction	PWD
	Polk	Des Moines	FEC Solutions	CCUR	TAC
	Polk	Des Moines	Feed Energy Company	Animal Science-Bregendahl	TAC
	Polk	Des Moines	Feed Energy Company	Agricultural & Biosystem Engineering - STIR	TAC
	Polk	Des Moines	Feed Energy Corp	ABE/IGQI	TAC
	Polk	Johnston	Genetic Enterprises International	CDFIN	TAC

	Polk	Johnston	Genetic Enterprises, Inc. (GEI)	Food Science and Human Nutrition	TAC
	Polk	Des Moines	Graziano Brothers, Inc.	Meat Science Extension	PWD
	Polk	Des Moines	Iowa Athletic Directors Association	Families Extension	PWD
	Polk	Des Moines	Iowa Business Council Biomass Working Group	CCUR	FAC
	Polk	Altoona	Iowa Cold Storage	Meat Science Extension	PWD
	Polk	Des Moines	Iowa Community Ed Association	Families Extension	PWD
	Polk	Johnston	Iowa Corn Promotion Board	CCUR	FAC
	Polk	West Des Moines	Iowa Farm Bureau Federation	Economics & CCUR	TAC
	Polk	Des Moines	Iowa Nursery and Landscape Association	Department of Horticulture	PWD
	Polk	Des Moines	Iowa Pacific Processors	Meat Science Extension	PWD
	Polk	Clive	Iowa Pork Producers Association	US Pork Center of Excellence	TAC
	Polk	West Des Moines	Iowa Pork Producers Association	SEU - CDFIN	FAC
	Polk	Johnston	Iowa Renewable Fuels Association Board	OBP, CCUR & others	FAC
	Polk	Urbandale	Iowa Soybean Association	CCUR and FSHN	FAC
	Polk	Adel	Iowa Spring Manufacturing	Joseph Chen - ABE and CIRAS	TAC
	Polk	Johnston	Johnston High School	College of Engineering / ABE (PLTW)	OCOM
	Polk	Clive	KCQ Foods	SEU - CDFIN	TAC
	Polk	Des Moines	Kemin	Animal Science-Lamont	TAC
	Polk	Des Moines	Kemin	CCUR	FAC
	Polk	Des Moines	Kemin Industries	SEU - CDFIN	TAC
	Polk	Des Moines	Kemin Nutrinsurance	Animal Science	TAC
	Polk	Des Moines	Keystone EMC	Joseph Chen - ABE and CIRAS	TAC
	Polk	Des Moines	Mater Builder of Iowa	Agricultural & Biosystem Engineering - STIR	FAC
	Polk	West Des Moines	Newsham Genetics, LC	Animal Science-Dekkers	TAC, PWD
	Polk	Des Moines	Pine Ridge Farms	Meat Science Extension	PWD
	Polk	Johnston	Pioneer	CCUR	FAC
	Polk	Johnston	Pioneer	SEU - CDFIN	TAC
	Polk	Johnston	Pioneer Hi-bred	Animal Science-Dekkers	TAC, PWD
	Polk	Johnston	Pioneer Hi-Breed Inter.	Agricultural & Biosystem Engineering - STIR	TAC
	Polk	Johnston	Pioneer Hybrid	Agron	PWD
	Polk	Ankeny	Proliant	CCUR and FSHN	FAC
	Polk	Pleasant Hill	PSEOA Distance Education Students = 1	Brenton Ctr for Ag Instruction	PWD
	Polk	Des Moines	Quality Manufacturing Corporation	Joseph Chen - ABE and CIRAS	TAC
	Polk	Des Moines	Soy Innovations	Meat Science Extension	PWD
	Polk	Des Moines	Soy Innovations International	FSHN	TAC
	Polk	Des Moines	Stork Townsend	Meat Science Extension	PWD
	Polk	Urbandale	The Soyfoods Council	CCUR and FSHN	FAC
	Polk	Des Moines	Iowa FFA Association	Agricultural Education and Studies	OCOM
	Polk	Des Moines	AgrowKnowledge--National Center	Agricultural Education and Studies	OCOM
	Polk	Ankeny	Des Moines Community College	Agricultural Education and Studies	OCOM
	Polk	Des Moines	Iowa State Fair Blue Ribbon Board	Agricultural Education and Studies	FAC
	Polk	West Des Moines	National Pork Board	Agricultural Education and Studies	FAC
	Polk	Des Moines	Southeast Polk Community School	Agricultural Education and Studies	FAC
	Polk	Des Moines	Prairie Meadows Racetrack & Casino	Agricultural Education and Studies	FAC
	Polk	West Des Moines	Iowa Pork Producers	Agricultural Education and Studies	FAC
	Polk	Ankeny	AGS, Inc.	Ag and Biosystems Engineering & CCUR	TAC
	Polk	Ankeny	Proliant	CCUR	FAC
	Polk	Des Moines	FEC Solutions	CCUR	TAC
	Polk	Des Moines	Iowa Business Council Biomass Working Group	CCUR	FAC
	Polk	Des Moines	Kemin	CCUR	FAC
	Polk	Johnston	Iowa Corn Promotion Board	CCUR	FAC
	Polk	Johnston	Iowa Renewable Fuels Association Board	OBP, CCUR & others	FAC
	Polk	Johnston	Pioneer	CCUR	FAC
	Polk	Urbandale	Iowa Soybean Association	CCUR	FAC
	Polk	Urbandale	The Soyfoods Council	CCUR	FAC
	Polk	Urbandale	The Soyfoods Council	CCUR	FAC
	Polk	West Des Moines	Iowa Farm Bureau Federation	Economics & CCUR	TAC
	Polk	Johnston	Genetic Enterprises, Inc. (GEI)	Food Science and Human Nutrition	TAC
	Polk	Clive	KCQ Foods	Sensory Eval. Unit (SEU) - CDFIN	TAC
	Polk	West Des Moines	Iowa Pork Producers Association	SEU - CDFIN	FAC
	Polk	Des Moines	Kemin Industries	SEU - CDFIN	TAC
	Polk	Johnston	Pioneer	SEU - CDFIN	TAC
	Polk	Ankeny	Monsanto mh	ISURF	TT
	Polk	Johnston	Pioneer Hi-Bred International, Inc.	ISURF	TT

	Polk	West Des Moines	Schillinger Seed, Inc.	ISURF	TT
			Alleman	IDRO	BCOM/ TCOM
	Polk	Ankeny	Ankeny	Extension CED	TCOM/ OCOM
	Polk	Ankeny	City of Ankeny	Extension CED	TCOM
	Polk	Clive	Clive	Extension CED	TCOM
	Polk	Clive	Clive 3D GIS Training	Extension CED, Landscape Architecture Extension	PWD
	Polk	Des Moines	Immigrant Network of Iowa	Extension CED	OCOM
	Polk	Des Moines	African American Service Providers	Extension CED	TCOM
	Polk	Des Moines	American Legion Auxiliary	Extension CED	PWD
	Polk	Des Moines	Compassion Iowa - Nonprofit Management Academy	Extension CED	PWD
	Polk	Des Moines	Des Moines	Extension CED	FAC/ OCOM/ PWD/ TCOM
	Polk	Des Moines	Des Moines Fire Department	Extension CED	PWD
	Polk	Des Moines	Iowa Department of Public Health	IDRO	BCOM
	Polk	Des Moines	Iowa Homeless Youth Centers	Extension CED	OCOM
	Polk	Des Moines	Iowa Sister States	Extension CED	PWD
	Polk	Des Moines	L.U.N.A.	Extension CED	PWD
	Polk	Des Moines	Latinos Unidos	Extension CED	BAC
	Polk	Des Moines	Lutheran Services In Iowa	Extension CED	PWD
	Polk	Des Moines	Mercy Capitol Hospital	Landscape Architecture Extension	BAC
	Polk	Des Moines	NE Iowa Community Development Conference	Extension CED	FAC
	Polk	Des Moines	Partnership Young Professionals	Extension CED	FAC
	Polk	Des Moines	Polk County Extension	Extension CED	PWD
	Polk	Des Moines	Senior College Greater DM	Extension CED	PWD
	Polk	Des Moines	The Heart Connection Children Cancer Programs	Extension CED	PWD
	Polk	Des Moines	United Way of Central Iowa	CD-DIAL - Sociology Extension	OCOM
	Polk	Des Moines	unknown	Extension CED	PWD
	Polk	Des Moines	Polk County Health Department	Extension CED	PWD
	Polk	Des Moines	David L. Dahlquist Associates, LLC	Extension CED	PWD
	Polk	Johnston	Administrator	Extension CED, CRP Extension	TCOM
	Polk	Johnston	City Administrator	Extension CED, CRP Extension	TCOM
	Polk	Johnston	City Clerk	Extension CED, CRP Extension	TCOM
	Polk	Johnston	Planning & Zoning	Extension CED, CRP Extension	TCOM
	Polk	Johnston	Zoning Commission	Extension CED, CRP Extension	TCOM
	Polk	Mitchellville	City of Mitchellville	IDRO	BCOM
	Polk	Mitchellville	Mitchellville	Extension CED, CRP Extension	TCOM
	Polk	Pleasant Hill	City of Pleasant Hill, IA	CD-DIAL - Sociology Extension	BCOM
	Polk	Pleasant Hill	Iowa Family Policy Center	Extension CED	PWD
	Polk	Pleasant Hill	unknown	Extension CED	PWD
	Polk	Polk City	Polk City	Extension CED	TCOM/ OCOM
	Polk	Windsor Heights	(confidential name)	Extension CED	PWD
	Polk	Windsor Heights	Zoning Commission	Extension CED, CRP Extension	TCOM
	Polk		Iowa Area Development Group	Extension CED	FAC/ BCOM
	Polk		Silos & Smokestacks National Heritage Area	Extension CED	OCOM
	Polk	Des Moines	Department of Veteran's Affairs	4-H Operation: Military Kids	OCOM
	Polk	Des Moines	Iowa School Counselors' Association	4-H Operation: Military Kids	OCOM
	Polk	Urbandale	Iowa Community Empowerment coordinators and contacts	4-H Operation: Military Kids	OCOM
	Polk	Des Moines	The Home Connection, Des Moines	Johnson County Extension	PWD
	Polk	Ankeny	John Deere Ankeny Works	ANR Extension	PWD
	Polk	Des Moines	Iowa Wine Growers Assn	Midwest Grape & Wine Industry Institute	FAC
	Polk	Des Moines	IA Grape & Wine Development Comm.	Midwest Grape & Wine Industry Institute	FAC
	Polk	Des Moines	Farmers Mutual Rain & Hail Insurance	Midwest Grape & Wine Industry Institute	BAC
	Polk	Ankeny	Iowa Alcohol & Beverage Division	Midwest Grape & Wine Industry Institute	FAC
	Polk	Urbandale	Chamber of Commerce	Polk County Extension	BCOM
	Polk	Urbandale	Triple F - Soy Innovations	Polk County Extension	TAC
	Polk	Altoona	City of Altoona	Polk County Extension	TCOM
	Polk	Ankeny	City of Ankeny	Polk County Extension	TCOM
	Polk	Pleasant Hill	City of Pleasant Hill	Polk County Extension	BCOM
	Polk	Windsor Heights	Windsor Heights	ISU Extension	BCOM
	Polk	Des Moines	Rebuilding Together	ISU Extension	OCOM
	Polk	Urbandale	Perwinder Singh (Individual Owner)	ISU Extension	PWD
	Polk	Ankeny	Pam Blume (Individual Owner)	ISU Extension	PWD
	Polk	West Des Moines	ABC on the Go	ISU Extension	PWD
	Polk	Des Moines	Applebee's	ISU Extension	PWD

	Polk	Clive	Applebee's	ISU Extension	PWD
		West Des Moines	Applebee's	ISU Extension	PWD
	Polk	Des Moines	Burger King	ISU Extension	PWD
	Polk	Des Moines	Centro	ISU Extension	PWD
	Polk	Des Moines	Cold Stone Creamery	ISU Extension	PWD
	Polk	Des Moines	Comfort Suites	ISU Extension	PWD
	Polk	Des Moines	Community Support Advocates	ISU Extension	PWD
	Polk	Des Moines	Consolidated Management Co.	ISU Extension	PWD
	Polk	Altoona	Court Yard Estates	ISU Extension	PWD
	Polk	Ankeny	Culver's of Ankeny	ISU Extension	PWD
	Polk	Des Moines	Culver's of Des Moines	ISU Extension	PWD
	Polk	West Des Moines	Culver's of West Des Moines #2	ISU Extension	PWD
	Polk	Grimes	Dallas Center-Grimes Schools	ISU Extension	PWD
	Polk	Des Moines	Des Moines Marriott Hotel	ISU Extension	PWD
	Polk	Des Moines	Embassy Suites Hotel	ISU Extension	PWD
	Polk	Clive	Entrees Made Easy	ISU Extension	PWD
	Polk	Urbandale	Fogarty Enterprises, LLC	ISU Extension	PWD
	Polk	Bondurant	Geisler Farms	ISU Extension	PWD
	Polk	Altoona	Grandma Max's	ISU Extension	PWD
	Polk	West Des Moines	Huhot Mongolian Grill	ISU Extension	PWD
	Polk	Urbandale	Iowa Machine Shed	ISU Extension	PWD
	Polk	Des Moines	Jimmy's Pizza	ISU Extension	PWD
	Polk	West Des Moines	Joseph's Steakhouse	ISU Extension	PWD
	Polk	Urbandale	Living History Farms	ISU Extension	PWD
	Polk	West Des Moines	Macaroni Grill	ISU Extension	PWD
	Polk	Ankeny	New Horizons Adult Day Center	ISU Extension	PWD
	Polk	Des Moines	Palmer's Deli	ISU Extension	PWD
	Polk	West Des Moines	Panda Express	ISU Extension	PWD
	Polk	Grimes	Pilot Travel Centers	ISU Extension	PWD
	Polk	Des Moines	Polk County Jail	ISU Extension	PWD
	Polk	Des Moines	Polk County Youth Services	ISU Extension	PWD
	Polk	Des Moines	REL LLC	ISU Extension	PWD
	Polk	Runnells	SE Polk Community Schools	ISU Extension	PWD
	Polk	Pleasant Hill	SE Polk Community Schools	ISU Extension	PWD
	Polk	Des Moines	Skip's Inc.	ISU Extension	PWD
	Polk	Des Moines	Spaghetis	ISU Extension	PWD
	Polk	Des Moines	Splash Seafood Bar & Grill	ISU Extension	PWD
	Polk	Des Moines	Taco Bell/QSR	ISU Extension	PWD
	Polk	Johnston	Texas Roadhouse	ISU Extension	PWD
	Polk	Des Moines	The Rose of Des Moines	ISU Extension	PWD
	Polk	West Des Moines	Treat of America Food Services	ISU Extension	PWD
	Polk	West Des Moines	When Pigs Fly	ISU Extension	PWD
	Polk	Des Moines	Windsor Windows	ISU Extension	TAC
	Polk	Des Moines	Pine Ridge Farms	ISUE-CIRAS	TAC
	Polk	Des Moines	SuperFlow Technologies Group	ISUE-CIRAS	TAC
	Polk		Event in Polk County	ISUE-CIRAS	TAC
	Polk	Des Moines	Chem-Tech Ltd	ISUE-CIRAS	TAC
	Polk	Des Moines	SuperFlow Technologies Group	ISUE-CIRAS	TAC
	Polk	Des Moines	Trans-Lux Fair-Play	ISUE-CIRAS	TAC
	Polk	Des Moines	Trans-Lux Fair-Play	ISUE-CIRAS	TAC
	Polk	Des Moines	Hallett Materials	ISUE-CIRAS	TAC
	Polk	Des Moines	Meredith Corp	ISUE-CIRAS	TAC
	Polk	Des Moines	Meredith Corp	ISUE-CIRAS	TAC
	Polk	Des Moines	Trans-Lux Fair-Play	ISUE-CIRAS	TAC
	Polk	Clive	Corrugated Solutions LLC	ISUE-CIRAS	BAC
	Polk		Event in Polk County	ISUE-CIRAS	BAC
	Polk		Event in Polk County	ISUE-CIRAS	FAC
	Polk		Event in Polk County	ISUE-CIRAS	FAC
	Polk		Event in Polk County	ISUE-CIRAS	FAC
	Polk		Event in Polk County	ISUE-CIRAS	FAC
	Polk		Event in Polk County	ISUE-CIRAS	FAC
	Polk		Event in Polk County	ISUE-CIRAS	FAC
	Polk		Event in Polk County	ISUE-CIRAS	FAC
	Polk		Event in Polk County	ISUE-CIRAS	FAC
	Polk		Event in Polk County	ISUE-CIRAS	FAC
	Polk		Event in Polk County	ISUE-CIRAS	FAC
	Polk	Des Moines	Kurtz Hardware Company	ISUE-CIRAS	BAC
	Polk	Des Moines	Impact Business Printing	ISUE-CIRAS	BAC
	Polk	West Des Moines	MPS Engineers	ISUE-CIRAS	BAC
	Polk	Des Moines	Jermaine's Hauling Services Inc.	ISUE-CIRAS	BAC
	Polk	Des Moines	Job Shops Contractors, Inc.	ISUE-CIRAS	BAC
	Polk	Des Moines	Copy Systems, Inc	ISUE-CIRAS	BAC
	Polk	Ankeny	Polyshield, Inc.	ISUE-CIRAS	BAC
	Polk	Des Moines	HKR	ISUE-CIRAS	BAC
	Polk	Des Moines	Vodaci Technologies	ISUE-CIRAS	BAC
	Polk	Des Moines	Morris Contracting Services, Inc.	ISUE-CIRAS	BAC
	Polk	Des Moines	Academy Roofing and Sheet Metal Company	ISUE-CIRAS	BAC
	Polk	Des Moines	Blackwell Construction, Inc.	ISUE-CIRAS	BAC
	Polk	Des Moines	TC Construction	ISUE-CIRAS	BAC
	Polk	Johnston	Model Technologies	ISUE-CIRAS	BAC
	Polk	Clive	Corrugated Solutions LLC	ISUE-CIRAS	BAC
	Polk	West Des Moines	Embarkit, Inc.	ISUE-CIRAS	BAC
	Polk	Des Moines	Capital City Boiler and Machine Works	ISUE-CIRAS	BAC

	Polk	Des Moines	Ron's Horseshoeing	ISUE-CIRAS	BAC
	Polk	Urbandale	Strix Systems, Inc.	ISUE-CIRAS	BAC
	Polk	Des Moines	Dejean Enterprises, LLC	ISUE-CIRAS	BAC
	Polk	West Des Moines	Wolf Construction	ISUE-CIRAS	BAC
	Polk	Des Moines	Storey-Kenworthy Company	ISUE-CIRAS	BAC
	Polk	Johnston	Talent Acquisition Group, LLC	ISUE-CIRAS	BAC
	Polk	Ankeny	AgResources Development Group	ISUE-CIRAS	BAC
	Polk	Des Moines	210 Communications	ISUE-CIRAS	BAC
	Polk	Clive	Diversified Contracting Service	ISUE-CIRAS	BAC
	Polk	Urbandale	L and S Custom Cycles	ISUE-CIRAS	BAC
	Polk	Mitchellville	Royal Delivery	ISUE-CIRAS	BAC
	Polk	Grimes	Premier Concrete Pumping	ISUE-CIRAS	BAC
	Polk	Grimes	Abaci Consulting, Inc.	ISUE-CIRAS	BAC
	Polk	Des Moines	Betty Andrews Media	ISUE-CIRAS	BAC
	Polk	West Des Moines	Rosway Enterprise LLC	ISUE-CIRAS	BAC
	Polk	Clive	Spectrum Prosthetics and Orthotics, Inc.	ISUE-CIRAS	BAC
	Polk	Des Moines	SuperFlow Technologies Group	ISUE-CIRAS	BAC
	Polk	West Des Moines	Goodrich Corp	ISUE-CIRAS	BAC
	Polk		Event in Polk County	ISUE-CIRAS	BAC
	Polk		Event in Polk County	ISUE-CIRAS	BAC
	Polk		Event in Polk County	ISUE-CIRAS	BAC
	Polk		Event in Polk County	ISUE-CIRAS	BAC
	Polk	Des Moines	Trans-Lux Fair-Play	ISUE-CIRAS	TAC
	Polk	Urbandale	Compressor Controls Corp	ISUE-CIRAS	TAC
	Polk	Urbandale	Quality Manufacturing Corp.	ISUE-CIRAS	TAC
	Polk	Clive	Fawn Engineering Corp	ISUE-CIRAS	TAC
	Polk	Des Moines	Firestone Agricultural Tire Co	ISUE-CIRAS	TAC
	Polk	Des Moines	Trans-Lux Fair-Play	ISUE-CIRAS	TAC
	Polk		Event in Polk County	ISUE-CIRAS	TAC
	Polk	Clive	Fawn Engineering Corp	ISUE-CIRAS	TAC
	Polk	Clive	Fawn Engineering Corp	ISUE-CIRAS	TAC
	Polk	Clive	Fawn Engineering Corp	ISUE-CIRAS	TAC
	Polk	Des Moines	Kurtz Hardware Company	ISUE-CIRAS	TAC
	Polk	Ankeny	John Deere and Co Inc	ISUE-CIRAS	TAC
	Polk	Ankeny	John Deere and Co Inc	ISUE-CIRAS	TAC
	Polk	Ankeny	John Deere and Co Inc	ISUE-CIRAS	TAC
	Polk	Des Moines	Trans-Lux Fair-Play	ISUE-CIRAS	TAC
	Polk	Urbandale	Quality Manufacturing Corp.	ISUE-CIRAS	TAC
	Polk	Ankeny	Tone's Spices	ISUE-CIRAS	TAC
	Polk		Event in Polk County	ISUE-CIRAS	TAC
	Polk	Altoona	Altoona City Hall	CTRE/CP Tech	PWD
	Polk	Altoona	City of Altoona	CTRE/CP Tech	PWD
	Polk	Ankeny	Allender Butzke Engineers	CTRE/CP Tech	PWD
	Polk	Ankeny	Assn.	CTRE/CP Tech	PWD
	Polk	Ankeny	BASF Admixtures, Inc.	CTRE/CP Tech	PWD
	Polk	Ankeny	CGA	CTRE/CP Tech	PWD
	Polk	Ankeny	City of Ankeny	CTRE/CP Tech	PWD
	Polk	Ankeny	Clapsaddle-Garber Associates, Inc.	CTRE/CP Tech	PWD
	Polk	Ankeny	Fox Engineering	CTRE/CP Tech	PWD
	Polk	Ankeny	Howard R. Green Co.	CTRE/CP Tech	PWD
	Polk	Ankeny	Iowa Concrete Paving	CTRE/CP Tech	PWD
	Polk	Ankeny	Iowa DOT	CTRE/CP Tech	PWD
	Polk	Ankeny	Iowa Ready Mix Concrete Assn.	CTRE/CP Tech	PWD
	Polk	Ankeny	IRMCA	CTRE/CP Tech	PWD
	Polk	Ankeny	MO/KS Chapter ACPA	CTRE/CP Tech	PWD
	Polk	Ankeny	Ready Mix Concrete Co.	CTRE/CP Tech	PWD
	Polk	Ankeny	S & A	CTRE/CP Tech	PWD
	Polk	Ankeny	Snyder & Associates, Inc.	CTRE/CP Tech	PWD
	Polk	Ankeny	Stanley Consultants	CTRE/CP Tech	PWD
	Polk	Bondurant	City of Bondurant	CTRE/CP Tech	PWD
	Polk	Clive	City of Clive	CTRE/CP Tech	PWD
	Polk	Des Moines	Ahlers and Conney	CTRE/CP Tech	PWD
	Polk	Des Moines	American Concrete	CTRE/CP Tech	PWD
	Polk	Des Moines	BASF Admixtures, Inc.	CTRE/CP Tech	PWD
	Polk	Des Moines	City of Des Moines	CTRE/CP Tech	PWD
	Polk	Des Moines	CMT	CTRE/CP Tech	PWD
	Polk	Des Moines	Des Moines	CTRE/CP Tech	PWD
	Polk	Des Moines	EFCO Corporation	CTRE/CP Tech	PWD
	Polk	Des Moines	Hallett Materials	CTRE/CP Tech	PWD
	Polk	Des Moines	Howard R. Green Co.	CTRE/CP Tech	PWD
	Polk	Des Moines	Iowa DNR	CTRE/CP Tech	PWD
	Polk	Des Moines	Iowa DOT	CTRE/CP Tech	PWD
	Polk	Des Moines	Logan Contractors Supply, Inc.	CTRE/CP Tech	PWD
	Polk	Des Moines	Manatt's	CTRE/CP Tech	PWD
	Polk	Des Moines	McAninch Corp.	CTRE/CP Tech	PWD
	Polk	Des Moines	Nuckolls Concrete Services, Inc	CTRE/CP Tech	PWD
	Polk	Des Moines	Polk County Public Works	CTRE/CP Tech	PWD
	Polk	Des Moines	Structural Consultants P C	CTRE/CP Tech	PWD
	Polk	Des Moines	Team Services	CTRE/CP Tech	PWD
	Polk	Grimes	City of Grimes	CTRE/CP Tech	PWD
	Polk	Grimes	Eco-Tech Construction, LLC	CTRE/CP Tech	PWD
	Polk	Johnston	Agro Globe Engineering	CTRE/CP Tech	PWD
	Polk	Johnston	Allender Butzke Engineers	CTRE/CP Tech	PWD
	Polk	Johnston	City of Johnston	CTRE/CP Tech	PWD

	Polk	Johnston	Manatt's	CTRE/CP Tech	PWD
	Polk	Johnston	McClure Engineering Co.	CTRE/CP Tech	PWD
	Polk	Johnston	Sika Corporation	CTRE/CP Tech	PWD
	Polk	Pleasant Hill	City of Pleasant Hill	CTRE/CP Tech	PWD
	Polk	Urbandale	Allender Butzke Engineers	CTRE/CP Tech	PWD
	Polk	Urbandale	City of Urbandale	CTRE/CP Tech	PWD
	Polk	Urbandale	Concrete Technologies, Inc.	CTRE/CP Tech	PWD
	Polk	Urbandale	Kirkham & Michael	CTRE/CP Tech	PWD
	Polk	Urbandale	Urbandale	CTRE/CP Tech	PWD
	Polk	West Des Moines	Bartlett & West Engineering	CTRE/CP Tech	PWD
	Polk	West Des Moines	Calhoun-Burns & Associates, Inc.	CTRE/CP Tech	PWD
	Polk	West Des Moines	City of West Des Moines	CTRE/CP Tech	PWD
	Polk	West Des Moines	Iowa DOT	CTRE/CP Tech	PWD
	Polk	West Des Moines	Veenstra & Kimm	CTRE/CP Tech	PWD
	Polk	West Des Moines	West Des Moines Public Works	CTRE/CP Tech	PWD
	Polk	Des Moines	Alliant Energy	OBP	BAC, FAC, TAC
	Polk	Des Moines	Equity Dynamics, Inc.: Pappajohn Capital Resources	OBP	BAC, FAC, TAC
	Polk	Des Moines	Iowa Department of Economic Development	OBP	BAC, FAC, TAC
	Polk	Des Moines	Iowa Farm Bureau	OBP	BAC, FAC, TAC
	Polk	Des Moines	Kemin Industries, Inc.	OBP	BAC, FAC, TAC
	Polk	Des Moines	Kemin Industries, Inc.	OBP	BAC, FAC, TAC
	Polk	Des Moines	Kemin Industries, Inc.	OBP	BAC, FAC, TAC
	Polk	Des Moines	Pappajohn Capital Resources Venture Capital	OBP	BAC, FAC, TAC
	Polk	Johnston	Pioneer/DuPont	OBP	BAC, FAC, TAC
	Polk	Johnston	Pioneer/DuPont	OBP	BAC, FAC, TAC
	Polk	Des Moines	IDED	Industry Relations	BCOM
	Polk	Des Moines	Smart Solutions Group	Industry Relations	BCOM
	Polk	Des Moines	Smart Solutions Group	Industry Relations	BCOM
	Polk	Des Moines	IDED	Industry Relations	BCOM
	Polk	Ankeny	DMACC	Industry Relations	BCOM
	Polk	West Des Moines	Iowa Area Development Group	Industry Relations	TAC
	Polk	Johnston	Genetic Enterprises International	Industry Relations	TAC
	Polk	Des Moines	Alliant Energy	OBP	BAC, FAC, TAC
	Polk	Des Moines	Equity Dynamics, Inc.: Pappajohn Capital Resources	OBP	BAC, FAC, TAC
	Polk	Des Moines	Iowa Department of Economic Development	OBP	BAC, FAC, TAC
	Polk	Des Moines	Iowa Farm Bureau	OBP	BAC, FAC, TAC
	Polk	Des Moines	Kemin Industries, Inc.	OBP	BAC, FAC, TAC
	Polk	Des Moines	Kemin Industries, Inc.	OBP	BAC, FAC, TAC
	Polk	Des Moines	Kemin Industries, Inc.	OBP	BAC, FAC, TAC
	Polk	Des Moines	Pappajohn Capital Resources Venture Capital	OBP	BAC, FAC, TAC
	Polk	Johnston	Pioneer/DuPont	OBP	BAC, FAC, TAC
	Polk	Johnston	Pioneer/DuPont	OBP	BAC, FAC, TAC
	Polk	Johnston	Pioneer/DuPont	OBP	BAC, FAC, TAC
	Polk	West Des Moines	Iowa Pork Producers Association	SEU - CDFIN	FAC
	Polk	Ankeny	Proliant	CCUR	FAC
	Polk	Des Moines	Iowa Business Council Biomass Working Group	CCUR	FAC
	Polk	Des Moines	Kemin	CCUR	FAC
	Polk	Johnston	Iowa Corn Promotion Board	CCUR	FAC
	Polk	Johnston	Iowa Renewable Fuels Association Board	OBP, CCUR & others	FAC
	Polk	Johnston	Pioneer	CCUR	FAC
	Polk	Urbandale	Iowa Soybean Association	CCUR	FAC
	Polk	Urbandale	The Soyfoods Council	CCUR	FAC
	Polk	Urbandale	The Soyfoods Council	CCUR	FAC
	Polk	Des Moines	Feed Energy Corp	ABE/IGQI	TAC
	Polk	Johnston	Genetic Enterprises, Inc. (GEI)	Food Science and Human Nu	TAC
	Polk	Johnston	Genetic Enterprises International	CDFIN	TAC
	Polk	Clive	KCQ Foods	SEU - CDFIN	TAC
	Polk	Des Moines	Kemin Industries	SEU - CDFIN	TAC
	Polk	Johnston	Pioneer	SEU - CDFIN	TAC
	Polk	West Des Moines	Iowa Farm Bureau Federation	Economics & CCUR	TAC
	Polk	Ankeny	AGS, Inc.	Ag and Biosystems Engineer	TAC
	Polk	Des Moines	FEC Solutions	CCUR	TAC
	Polk	Des Moines	Iowa Athletic Directors Association	ISU Extension	PWD
	Polk	Des Moines	Des Moines teachers	ISU Extension	PWD
	Polk	Des Moines	Iowa Community Ed Association	ISU Extension	PWD
	Polk	Des Moines	CVC philanthropy presentation	Greene County Extension	BCOM
	Polk	Ankeny	Deere & Company	Virtual Reality Applications Center, IPRT	BAC, TAC, FAC, PWD
	Polk	Pleasant Hill	Iowa Family Policy Center, Pleasant Hill	Johnson County Extension	PWD
	Polk	Des Moines	Central Iowa Dietetic Association	FSHN	PWD
	Polk		Polk County	Extension CED	TCOM
	Polk	Des Moines	Vounteer Mgt - DMACC	4-H Youth Development	TT
	Polk	Des Moines	Iowa Farm Bureau	Thoreson, Dale Fld Spec	TAC
	Polk	Des Moines	Central Iowa Dietetic Association	ANR	TAC
	Polk	Des Moines	Central Iowa Dietetic Association	Dietetics Internship faculty 4/	PWD
Polk County		489			489
	Pottawattamie	Carter Lake	Planning & Zoning Board Member	CRP	TCOM
	Pottawattamie	Council Bluffs	Board of Supervisors	CRP	TCOM
	Pottawattamie	Carter Lake	Planning & Zoning Board Member	Extension CED, CRP Extension	TCOM
	Pottawattamie	Council Bluffs	Board of Supervisors	Extension CED, CRP Extension	TCOM
	Pottawattamie	Western Iowa	Home daycare providers	Families	Ocom

	Pottawattamie	Oakland	Community Design Program	Extension CED	PWD
	Pottawattamie		Planning & Zoning Commission	CRP	TCOM
	Pottawattamie		Planning & Zoning Commission	CRP	TCOM
	Pottawattamie		Zoning Board of Adjustment	CRP	TCOM
	Pottawattamie	Council Bluffs	Council bluffs Area Chamber of Commerce	College of Engineering	BCOM
	Pottawattamie	Avoca	Western Iowa Development Association	College of Engineering	BCOM
	Pottawattamie	Council Bluffs	Weyerhaeuser Company	College of Engineering	PWD
	Pottawattamie	Council Bluffs	Omaha Public Power District	College of Engineering	PWD
	Pottawattamie	Council Bluffs	CRC	IPRT Company Assistance-Materials	TAC
	Pottawattamie	Oakland	Iowa Fittings Company	IPRT Company Assistance-NDE	TAC
	Pottawattamie	Council Bluffs	Council Bluffs Police Department	Midwest Forensics Resource Center, IPRT	TCOM
	Pottawattamie	Council Bluffs	Lewis Central High School	College of Engineering / ABE (PLTW)	OCOM
	Pottawattamie	Council Bluffs	Compassion Iowa - Nonprofit Management Academy	Extension CED	PWD
	Pottawattamie	Council Bluffs	Council Bluffs	Extension CED	PWD
	Pottawattamie	Council Bluffs	NPMA-Council Bluffs	Extension CED	PWD
	Pottawattamie	Council Bluffs	Southwest Iowa Renewable Energy	Darrell Busby SW IA Beef Specialist	BAC
	Pottawattamie	all communities	Volunteer Income Tax Assistance	ISU Extension	OCOM
	Pottawattamie	Avoca	Parkway Café	ISU Extension	PWD
	Pottawattamie	Council Bluffs	Red Wheel Fundraising	ISUE-CIRAS	BAC
	Pottawattamie		Event in Pottawattamie County	ISUE-CIRAS	BAC
	Pottawattamie	Council Bluffs	Heartland First Aid Company	ISUE-CIRAS	BAC
	Pottawattamie	Council Bluffs	Broadway Foods	ISUE-CIRAS	BAC
	Pottawattamie	Council Bluffs	Katelman Foundry Inc	ISUE-CIRAS	TAC
	Pottawattamie	Council Bluffs	Katelman Foundry Inc	ISUE-CIRAS	TAC
	Pottawattamie		Event in Pottawattamie County	ISUE-CIRAS	TAC
	Pottawattamie	Council Bluffs	City of Council Bluffs	CTRE/CP Tech	PWD
	Pottawattamie	Council Bluffs	Council Bluffs Public Works	CTRE/CP Tech	PWD
	Pottawattamie	Council Bluffs	Erhardt & Griffin Assoc.	CTRE/CP Tech	PWD
	Pottawattamie	Council Bluffs	HGM Associates, Inc.	CTRE/CP Tech	PWD
	Pottawattamie	Council Bluffs	Iowa DOT	CTRE/CP Tech	PWD
	Pottawattamie	Council Bluffs	Snyder & Associates, Inc.	CTRE/CP Tech	PWD
	Pottawattamie	Council Bluffs	The Schemmer Associates	CTRE/CP Tech	PWD
	Pottawattamie	Harlan	Harlan Builders	CTRE/CP Tech	PWD
	Pottawattamie	Council Bluffs Nonprofit	Management Academy	Communities	PWD
	Pottawattamie	Western Iowa	Planning Officials Academy	Communities	PWD
	Pottawattamie		Board of Supervisors	CRP	TCOM
	Pottawattamie		Building Administrator	CRP	TCOM
	Pottawattamie		City Administrator	CRP	TCOM
	Pottawattamie		City Clerk	CRP	TCOM
	Pottawattamie		Community Development Planner	CRP	TCOM
	Pottawattamie		Zoning Board of Adjustment	CRP	TCOM
	Pottawattamie		Board of Supervisors	Extension CED, CRP Extension	TCOM
	Pottawattamie		Building Administrator	Extension CED, CRP Extension	TCOM
	Pottawattamie		City Administrator	Extension CED, CRP Extension	TCOM
	Pottawattamie		City Clerk	Extension CED, CRP Extension	TCOM
	Pottawattamie		Community Development Planner	Extension CED, CRP Extension	TCOM
	Pottawattamie		Multi-State Regional Development	Extension CED	FAC
	Pottawattamie		Nishna Productions	Extension CED	TAC
	Pottawattamie		Planning & Zoning Commission	Extension CED, CRP Extension	TCOM
	Pottawattamie		Planning & Zoning Commission	Extension CED, CRP Extension	TCOM
	Pottawattamie		Pottawattamie County	Extension CED	PWD
	Pottawattamie		Regional Foods Working Group	Extension CED	BAC
	Pottawattamie		Renew Rural Iowa	Extension CED	FAC
	Pottawattamie		Rural Development Resource Center	Extension CED	FAC
	Pottawattamie		Rural Development Resource Center: Grow Iowa Fund; Wallace Fund; Southwest Iowa Coalition	Extension CED	BAC/ TCOM/ FAC/ BCOM
	Pottawattamie		Rural Development Summit	Extension CED	FAC
	Pottawattamie		Southwest Iowa Coalition	Extension CED	FAC
	Pottawattamie		Zoning Board of Adjustment	Extension CED, CRP Extension	TCOM
	Pottawattamie		Zoning Board of Adjustment	Extension CED, CRP Extension	TCOM
Pottawattamie County		64			64
	Pottawattamie	Carter Lake	Distance Education Students = 1	Brenton Ctr for Ag Instruction	PWD
	Pottawattamie	Council Bluffs	Distance Education Students = 1	Brenton Ctr for Ag Instruction	PWD
	Pottawattamie	Treynor	Distance Education Students = 1	Brenton Ctr for Ag Instruction	PWD
	Pottawattamie	Oakland	Distance Education Students = 2	Brenton Ctr for Ag Instruction	PWD

	Pottwattamie	Underwood	Distance Education Students = 2	Brenton Ctr for Ag Instruction	PWD
	Pottwattamie	Hancock	Hancock Frozen Foods	Meat Science Extension	PWD
	Pottwattamie	Minden	Minden Meat Market	Meat Science Extension	PWD
	Pottwattamie	Council Bluffs	Plumrose USA, Inc.	Meat Science Extension	PWD
	Pottwattamie	Council Bluffs	Tyson Foods	Meat Science Extension	PWD
Pottwattamie County		9			9
	Poweshiek	Brooklyn	Distance Education Students = 1	Brenton Ctr for Ag Instruction	PWD
	Poweshiek	Grinnell	Distance Education Students = 3	Brenton Ctr for Ag Instruction	PWD
	Poweshiek	Grinnell	City Clerk/Finance Director	CRP	TCOM
	Poweshiek	Brooklyn	Creative Composites	ABE	TAC
	Poweshiek	Malcolm	Dayton's Meat Processing	Meat Science Extension	PWD
	Poweshiek	Grinnell	JELD-WEN	Joseph Chen - ABE and CIRAS	TAC
	Poweshiek	Grinnell	Schillinger Seed	Organic Ag Program (K. Delate; Agronomy & Horticulture)	TAC
	Poweshiek	Brooklyn	Creative Composites	ISURF	TT
	Poweshiek	Grinnell	City Clerk/Finance Director	Extension CED, CRP Extension	TCOM
	Poweshiek	Grinnell	Grinnell	Extension CED	TCOM
	Poweshiek		25 entrepreneurs	Extension CED	BAC
	Poweshiek		Poweshiek County tourism	Extension CED	FAC
	Poweshiek		Poweshiek County Auditors	Extension CED	OCOM
	Poweshiek		Silos & Smokestacks National Heritage Area	Extension CED	OCOM
	Poweshiek	Montezuma	Poweshiek Leadership Program	4-H Youth Development	OCOM
	Poweshiek	Grinnell	Claude W. and Dolly Ahrens Foundation, Grinnell	Johnson County Extension	PWD
	Poweshiek		Big River Ethanol Plant	Poweshiek County Extension	BCOM & FAC
	Poweshiek		Creative Horizons of Iowa, LLC	Poweshiek County Extension	FAC
	Poweshiek	Grinnell	Dairy Queen - Grinnell	ISU Extension	PWD
	Poweshiek	Grinnell	Randhawa's Travel Center	ISU Extension	PWD
	Poweshiek	Brooklyn	SoyClean	ISUE-CIRAS	TAC
	Poweshiek	Brooklyn	Creative Composites	ISUE-CIRAS	TAC
	Poweshiek		Event in Poweshiek County	ISUE-CIRAS	BAC
	Poweshiek	Brooklyn	SoyClean	ISUE-CIRAS	BAC
	Poweshiek	Montezuma	Brownells Inc	ISUE-CIRAS	BAC
	Poweshiek	Grinnell	ASI Modulex	ISUE-CIRAS	TAC
	Poweshiek	Brooklyn	Manatt's	CTRE/CP Tech	PWD
	Poweshiek	Brooklyn	Creative Composites	Industry Relations	TAC
	Poweshiek		Poweshiek County	Extension CED	OCOM
	Poweshiek		Poweshiek County Healthy Choices Coalit	4-H Youth Development	OCOM
Poweshiek County		30			30
	Ringgold	Shannon City	Distance Education Students = 4	Brenton Ctr for Ag Instruction	PWD
	Ringgold	Diagonal	Ron Abbott Farm	NREM	TAC
	Ringgold		Diagonal Community Development Corporation	Extension CED	FAC/ BCOM
	Ringgold		Ringgold County Board of Supervisors	Extension CED	FAC/ BCOM
	Ringgold		Ringgold County Farm Bureau	Extension CED	FAC/ BCOM
	Ringgold		Rural Development Summit	Extension CED	FAC
	Ringgold		USBank - Mt. Ayr	Extension CED	FAC/ BCOM
	Ringgold	Mt. Ayr	Ringgold County Economic Development	Extension	BCOM
	Ringgold	Mt. Ayr	Ringgold County Economic Development	Extension	FAC
	Ringgold	Mt. Ayr	NRCS Office	Extension	FAC
	Ringgold	Mt. Ayr	Mt. Ayr Chamber of Commerce	Extension	FAC
	Ringgold	Mt. Ayr	Ringgold County Emergency Management	Extension	OCOM
	Ringgold	Mt. Ayr	Mt. Ayr Community Schools	Extension	OCOM
	Ringgold	Mt. Ayr	Ahrens Manufacturing	ISUE-CIRAS	BAC
	Ringgold	Kellerton	JandS Construction Co.	ISUE-CIRAS	BAC
	Ringgold		Emerald Hills Dairy Consortium	Extension CED	BAC
	Ringgold		Great Western Bank - Mount Ayr	Extension CED	FAC/ BCOM
	Ringgold		Multi-State Regional Development	Extension CED	FAC
	Ringgold		Regional Marketing	Extension CED	BCOM
	Ringgold		Renew Rural Iowa	Extension CED	FAC
	Ringgold		Ringgold Co Development Corp	Extension CED	FAC/ BCOM
	Ringgold		Ringgold County	Extension CED	OCOM
	Ringgold		Ringgold County Economic Development; Diagonal Economic Development; Ringgold County Chamber and Tourism	Extension CED	BCOM
	Ringgold		Rural Development Resource Center	Extension CED	FAC
	Ringgold		Rural Development Resource Center: Grow Iowa Fund; Wallace Fund; Southwest Iowa Coalition	Extension CED	BAC/ TCOM/ FAC/ BCOM
	Ringgold		Southwest Iowa Coalition	Extension CED	FAC
Ringgold County		26			26
	Sac	Auburn	Auburn	Landscape Architecture, IDRO	BCOM
	Sac	Lake View	Lake View	Landscape Architecture, IDRO	BCOM
	Sac	Sac City	Board of Adjustments	CRP	TCOM
	Sac	Sac City	Zoning Official	CRP	TCOM

	Sac	Sac City	Sac City	Landscape Architecture, IDRO	BCOM
	Sac	Schaller	Friesen USA	College of Engineering	PWD
	Sac	Lake View	WLVA Community Schools	Agricultural Education and Studies	OCOM
	Sac	Wall Lake	Wall Lake Auburn Community School	Agricultural Education and Studies	FAC
	Sac	Auburn	Auburn	Landscape Architecture, IDRO	BCOM
	Sac	Lake View	Lake View	Landscape Architecture, IDRO	BCOM
	Sac	Sac City	Board of Adjustments	Extension CED, CRP Extension	TCOM
	Sac	Sac City	Sac City	Landscape Architecture, IDRO	BCOM
	Sac	Sac City	Zoning Official	Extension CED, CRP Extension	TCOM
	Sac		Sac County Auditors	Extension CED	OCOM
	Sac	Schaller	enXco (Midamerican Energy)	ISUE-CIRAS	TAC
	Sac	Wall Lake	Cookies Food Products Inc	ISUE-CIRAS	TAC
	Sac	Auburn	Auburn	ISU Extension-Sac County	BCOM
	Sac	Lake View	City of Lake View	ISU Extension-Sac County	BCOM
	Sac	Wall Lake	Cookie's Food Products	ISU Extension-Sac County	FAC
	Sac	Sac City	Divine Purses	ISU Extension-Sac County	BAC
	Sac	Lake View	Golf Products Inc	ISU Extension-Sac County	TAC
	Sac	Sac City	Kitchen Krafters	ISU Extension-Sac County	BAC
	Sac	Lake View	Lake View Concrete Products	ISU Extension-Sac County	BAC
	Sac	Auburn	Ortner Landscaping	ISU Extension-Sac County	BAC
	Sac	Sac City	Sac City	ISU Extension-Sac County	BCOM
	Sac	Sac City	the Beer Bread co	ISU Extension-Sac County	BAC
	Sac	Sac City	the HUB	ISU Extension-Sac County	BAC
	Sac	Lake View	Thistle Down Nursery	ISU Extension-Sac County	FAC
	Sac	Wall Lake	Wall Lake	ISU Extension-Sac County	BCOM
	Sac	Lake View	Wall Lake View Auburn Comm School	ISU Extension-Sac County	OCOM
	Sac		Sac County	Extension CED	TCOM
Sac County		31			31
	Scott	Davenport	Cocoon Corporation	OIPTT	FAC
	Scott	Davenport	New Ventures, Inc.	OIPTT	BCOM
	Scott	Davenport	Eastern Iowa Small Business Development Center	OIPTT	FAC
	Scott	Davenport	Bawden Lareu Public Relations	OIPTT	FAC
	Scott	Bettendorf	Vizient	OIPTT	BAC
	Scott	Davenport	New Composite Partners	OIPTT	FAC
	Scott	Davenport	New Ventures	College of Business	FAC
	Scott	Davenport	Rock Island Arsenal	College of Engineering	PWD
	Scott	Davenport	John Deere	College of Engineering	PWD
	Scott	Davenport	Hansaloy Corporation	IPRT Company Assistance-Materials	TAC
	Scott	Davenport	Hansaloy Corporation	IPRT Company Assistance-NDE	TAC
	Scott	Davenport	John Deere - Davenport Works	IPRT Company Assistance-NDE	TAC
	Scott	Davenport	Sears Manufacturing Company	IPRT Company Assistance-NDE	TAC
	Scott	Davenport	Cocoon Corporation	IPRT Company Assistance-Technology Commercialization	TT
	Scott	Davenport	Grace Engineered Products	IPRT Company Assistance-Technology Commercialization	TT
	Scott	Bettendorf	Bettendorf Police Department	Midwest Forensics Resource Center, IPRT	PWD
	Scott	Davenport	Davenport Police Department	Midwest Forensics Resource Center, IPRT	PWD
	Scott	Quad Cities	Deere	Ag and Biosystems Engineering & CCUR	TAC
	Scott	Bettendorf	Distance education student - BRT 501	OBP/ABE (Raman)	PWD
	Scott	Bettendorf	Distance Education Students = 1	Brenton Ctr for Ag Instruction	PWD
	Scott	Davenport	Distance Education Students = 5	Brenton Ctr for Ag Instruction	PWD
	Scott	Davenport	Kraft Foods	Meat Science Extension	PWD
	Scott	Quad Cities	Deere	Ag and Biosystems Engineering & CCUR	TAC
	Scott	Bettendorf	Bettendorf Public Library	Extension CED	PWD
	Scott	Bettendorf	Disability Assistance Dogs	Extension CED	PWD
	Scott	Bettendorf	Disability Dogs	Extension CED	PWD
	Scott	Bettendorf	Scott Community College Foundation	Extension CED	PWD
	Scott	Bettendorf	Scott County Family Y	Extension CED	PWD
	Scott	Davenport	Center for Alcohol & Drug Services	Extension CED	PWD
	Scott	Davenport	Community Foundation	Extension CED	PWD
	Scott	Davenport	Davenport, IA	Extension CED	PWD
	Scott	Davenport	Eastern Iowa Community College District	Extension CED	PWD
	Scott	Davenport	Habitat for Humanity Restore	Extension CED	PWD
	Scott	Davenport	Quad Cities Interfaith	Extension CED	PWD

	Scott	Davenport	Quad City Health Initiative	Extension CED	PWD
	Scott	Davenport	Quad City Labyrinth Project	Extension CED	PWD
	Scott	Davenport	WQPT - Quad Cities PBS	Extension CED	PWD
	Scott	LeClaire	LeClaire, IA	Extension CED	PWD
	Scott	Long Grove	Flenker Land Architecture Consultants	Extension CED	PWD
	Scott	Long Grove	Flenker Land Architecture Consultants	Extension CED	PWD
	Scott		Bioeconomy Community Discussion	Director	FAC
	Scott		Terrorism and Hazard Planning	Director	OCOM
	Scott	Davenport	Roosevelt Center/Parks and Rec	Director, families, hort, youth	OCOM
	Scott		Rotary Club - Assistance with Bylaws	Director	OCOM
	Scott	Davenport	Genesis Health System	Extension (Families)	OCOM
	Scott	Davenport	United Way of the QCA	Extension (Families)	OCOM
	Scott	Davenport	Quad City Symphony Orchestra Association, Davenport	Johnson County Extension	PWD
	Scott	Davenport	Family Resources Inc., Davenport	Johnson County Extension	PWD
	Scott	Davenport	City of Davenport, Davenport	Johnson County Extension	PWD
	Scott	Davenport	Vander Veer Botanical Park, Davenport	Johnson County Extension	PWD
	Scott	Davenport	DESD 21 st Century Grant, Davenport	Johnson County Extension	PWD
	Scott	Davenport	Quad City Labyrinth Project, Davenport	Johnson County Extension	PWD
	Scott		Nonprofit Management Academy - nonprofit workshops	Director/Communities	PWD
	Scott	Bettendorf	Greenspace Associates	ISU Scott County Extension	PWD
	Scott	Bettendorf	Mississippi Bend AEA	Extension (Youth)	PWD
	Scott	Davenport	Davenport Community School District	Extension (Youth)	PWD
	Scott	Bettendorf	Quad City Times	ISU Scott County Extension	TAC
	Scott	Bettendorf	Teske Garden Center	ISU Scott County Extension	TAC
	Scott	Davenport	Aunt Rhodie's Landscaping	ISU Scott County Extension	TAC
	Scott	Bettendorf	Cribbs Landscaping	ISU Scott County Extension	TAC
	Scott	Bettendorf	Davey Tree Company	ISU Scott County Extension	TAC
	Scott	Donahue	Allens Grove Greenhouse	ISU Scott County Extension	TAC
	Scott	Davenport	Michelle Campbell Landscape Design	ISU Scott County Extension	TAC
	Scott	Bettendorf	Wallace's Garden Center	ISU Scott County Extension	TAC
	Scott	Davenport	Wallace's Garden Center	ISU Scott County Extension	TAC
	Scott	Davenport	The Green Thumbers	ISU Scott County Extension	TAC
	Scott	Bettendorf	Earth Works Landscape Design	ISU Scott County Extension	TAC
	Scott	Davenport	Suburban Landscape Associates	ISU Scott County Extension	TAC
	Scott	Long Grove	Urban Forest	ISU Scott County Extension	TAC
	Scott	Davenport	Scott Carlson Certified Arborist	ISU Scott County Extension	TAC
	Scott	Davenport	Vander Veer Botanical Park	ISU Scott County Extension	TAC
	Scott	Bettendorf	Ace Tree Service	ISU Scott County Extension	TAC
	Scott	Davenport	The Garden Growers	ISU Scott County Extension	TAC
	Scott		Eastern Iowa Hay Producers Association	Extension/Iowa Beef Center	FAC
	Scott	Davenport	Applebee's	ISU Extension	PWD
	Scott	Walcott	Iowa 80 Truckstop	ISU Extension	PWD
	Scott	Davenport	P B Leiner	ISUE-CIRAS	TAC
	Scott	Davenport	Nichols Aluminum	ISUE-CIRAS	TAC
	Scott	Davenport	John Deere Davenport Works	ISUE-CIRAS	TAC
	Scott	Blue Grass	Cast Urethane Technologies	ISUE-CIRAS	TAC
	Scott	Davenport	John Deere Davenport Works	ISUE-CIRAS	TAC
	Scott	Davenport	PCT Inc	ISUE-CIRAS	BAC
	Scott		Event in Scott County	ISUE-CIRAS	BAC
	Scott	Eldridge	Quality Construction Service	ISUE-CIRAS	BAC
	Scott	Pleasant Valley	Environmental Planning Strategies	ISUE-CIRAS	BAC
	Scott	Davenport	Marco Group International	ISUE-CIRAS	BAC
	Scott	Bettendorf	Digital Pathways	ISUE-CIRAS	BAC
	Scott	Davenport	Abrahams Machine Service, Inc.	ISUE-CIRAS	BAC
	Scott	Bettendorf	WIT Inc.	ISUE-CIRAS	BAC
	Scott	Davenport	ESCP Corporation	ISUE-CIRAS	BAC
	Scott		Event in Scott County	ISUE-CIRAS	TAC
	Scott	Eldridge	Olsen Engineering LP	ISUE-CIRAS	TAC
	Scott	Davenport	Sears Manufacturing Co	ISUE-CIRAS	TAC
	Scott		Event in Scott County	ISUE-CIRAS	TAC
	Scott	Bettendorf	Bettendorf	CTRE/CP Tech	PWD
	Scott	Bettendorf	City of Bettendorf	CTRE/CP Tech	PWD

	Scott	Bettendorf	Missman-Stanley Engineering	CTRE/CP Tech	PWD
	Scott	Davenport	City of Davenport	CTRE/CP Tech	PWD
	Scott	Davenport	Iowa DOT	CTRE/CP Tech	PWD
	Scott	Davenport	MSA Professional Services	CTRE/CP Tech	PWD
	Scott	Davenport	Rockwell Automation	OBP	BAC, FAC, TAC
	Scott	Davenport	NewVentures Initiative	Industry Relations	BCOM
	Scott	Davenport	Rockwell Automation	OBP	BAC, FAC, TAC
	Scott	Quad Cities	Deere	Ag and Biosystems Engineer	TAC
	Scott		Silos & Smokestacks National Heritage Area	Extension CED	OCOM
Scott County	105				105
	Shelby	Harlan	Shelby County Develop Source	College of Engineering	BCOM
	Shelby	Harlan	Jacobs Corporation	IPRT Company Assistance-Materials	TAC
	Shelby	Harlan	Jacobs Corporation	IPRT Company Assistance-NDE	TAC
	Shelby	Harlan	Distance Education Students = 1	Brenton Ctr for Ag Instruction	PWD
	Shelby	Panama	Distance Education Students = 2	Brenton Ctr for Ag Instruction	PWD
	Shelby	Earling	Grosses' Locker	Meat Science Extension	PWD
	Shelby	Harlan	Prairie Rose Lamb, subsidiary of Ag Partners	Animal Science-Morrical	TAC
	Shelby	Harlan	Shelby County Cookers	Meat Science Extension	PWD
	Shelby	Harlan	NPMA-Council Bluffs	Extension CED	PWD
	Shelby		Regional Foods Working Group	Extension CED	BAC
	Shelby		Regional Marketing	Extension CED	BCOM
	Shelby		Rural Development Resource Center: Grow Iowa Fund; Wallace Fund; Southwest Iowa Coalition	Extension CED	BAC/ TCOM/ FAC/ BCOM
	Shelby		Shelby County DevelopSource	Extension CED	FAC/ BCOM
	Shelby		Shelby County State Bank	Extension CED	FAC/ BCOM
	Shelby		Southwest Iowa Coalition	Extension CED	FAC
	Shelby	all communities	Volunteer Income Tax Assistance	ISU Extension	OCOM
	Shelby	Elk Horn	World Cal, Inc.	ISUE-CIRAS	BAC
	Shelby	Elk Horn	Liberty Auto Restoration	ISUE-CIRAS	BAC
	Shelby	Defiance	Clean Air Filter Co	ISUE-CIRAS	BAC
	Shelby	Harlan	Conductix	ISUE-CIRAS	TAC
	Shelby	Harlan	Conductix	ISUE-CIRAS	TAC
	Shelby	Harlan	Conductix	ISUE-CIRAS	TAC
	Shelby	Harlan	Conductix	ISUE-CIRAS	TAC
	Shelby	Harlan	Jacobs Corp	ISUE-CIRAS	TAC
	Shelby	Harlan	Shelby Co.	CTRE/CP Tech	PWD
	Shelby		Farmers Trust & Savings Bank	Extension CED	FAC/ BCOM
	Shelby		Multi-State Regional Development	Extension CED	FAC
	Shelby		Renew Rural Iowa	Extension CED	FAC
	Shelby		Shelby County Auditors	Extension CED	OCOM
Shelby County	29				29
	Sioux	Hawarden	City of Hawarden	CRP	BCOM
	Sioux	Orange City	Silent Drive, Inc.	IPRT Company Assistance-Materials	TAC
	Sioux	Sioux Center	Groschopp, Inc.	IPRT Company Assistance-NDE	TAC
	Sioux	Orange City	Quatro Composites	IPRT Company Assistance-NDE	TAC
	Sioux	Orange City	Advance Brands	Meat Science Extension	PWD
	Sioux	Orange City	Distance Education Students = 2	Brenton Ctr for Ag Instruction	PWD
	Sioux	Sioux Center	Distance Education Students = 6	Brenton Ctr for Ag Instruction	PWD
	Sioux	Sioux Center	Golden Crisp Premium Foods	Meat Science Extension	PWD
	Sioux	Hawarden	Iowa Lamb	Animal Science-Morrical	TAC
	Sioux	Hospers	Premium Iowa Pork, LLC	Meat Science Extension	PWD
	Sioux	Boyden	SIG International	Meat Science Extension	PWD
	Sioux	Orange City	Van Beek Natural Sciences	Food Science & Human Nutrition	TAC/TT
	Sioux	Orange City	Woudstra Meat Market & Lockers	Meat Science Extension	PWD
	Sioux	Sioux Center	Link Manufacturing, Ltd.	ISURF	TT
	Sioux	Hawarden	City of Hawarden	Extension CED, CRP Extension	BCOM
	Sioux		Sioux County Auditors	Extension CED	OCOM
	Sioux	Sioux Center	Dordt College	David Stender	FAC
	Sioux	Boyden	DEMCO	ISU Extension	PWD
	Sioux	Hull	the Foreign Candy Company	ISU Extension	PWD
	Sioux	Orange City	Advance Brands	ISU Extension	PWD
	Sioux	Rock Valley	Hope Haven, Inc	ISU Extension	PWD
	Sioux	Sioux Center	Pella Corporation	ISU Extension	PWD
	Sioux	Sioux Center	Sioux Center Comm. School	ISU Extension	PWD
	Sioux	Sioux Center	Early Childhood Center	ISU Extension	PWD
	Sioux	Orange City	Orange City Day Care	ISU Extension	PWD
	Sioux	Orange City	Covenant Kids Preschool	ISU Extension	PWD
	Sioux	Alton	Crayon Castle	ISU Extension	PWD
	Sioux	Rock Valley	Generations Day care and Peschool	ISU Extension	PWD
	Sioux	Sioux Center	Learning Ship Preschool	ISU Extension	PWD
	Sioux	Granville	Sioux Golf	ISU Extension	PWD
	Sioux	Sioux Center	20 staff members of B-I VetMedica, facing layoff	ISU Extension	PWD
	Sioux	Rock Valley	Rock Industries Inc	ISUE-CIRAS	TAC

	Sioux	Sioux Center	Siouxperior Research	ISUE-CIRAS	BAC
	Sioux	Orange City	Diamond-Vogel Paint	ISUE-CIRAS	BAC
	Sioux	Rock Valley	Valley Machining Co	ISUE-CIRAS	BAC
	Sioux	Boyden	Dethmers Manufacturing Co	ISUE-CIRAS	TAC
	Sioux	Boyden	Dethmers Manufacturing Co	ISUE-CIRAS	TAC
	Sioux	Boyden	Dethmers Manufacturing Co	ISUE-CIRAS	TAC
	Sioux	Boyden	Dethmers Manufacturing Co	ISUE-CIRAS	TAC
	Sioux	Boyden	Dethmers Manufacturing Co	ISUE-CIRAS	TAC
	Sioux	Hospers	Den Hartog Industries Inc	ISUE-CIRAS	TAC
	Sioux	Rock Valley	Rock Industries Inc	ISUE-CIRAS	TAC
	Sioux	Orange City	Van Beek Natural Science, LLC	ISUE-CIRAS	TAC
	Sioux	Rock Valley	Rock Industries Inc	ISUE-CIRAS	TAC
	Sioux	Boyden	Dethmers Manufacturing Co	ISUE-CIRAS	TAC
	Sioux	Boyden	Dethmers Manufacturing Co	ISUE-CIRAS	TAC
	Sioux	Hospers	Den Hartog Industries Inc	ISUE-CIRAS	TAC
	Sioux	Sioux Center	Nemschoff Chairs	ISUE-CIRAS	TAC
	Sioux	Orange City	Van Beek Natural Science, LLC	ISUE-CIRAS	TAC
	Sioux	Hospers	Den Hartog Industries Inc	ISUE-CIRAS	TAC
	Sioux		40 election officials certified	CED	OCOM
	Sioux	Orange City	City of Orange City (SCORE)	Sioux County Extension	FAC
	Sioux	Rock Valley	City of Rock Valley (SCORE)	Sioux County Extension	FAC
	Sioux	Sioux Center	City of Sioux Center (SCORE)	Sioux County Extension	FAC
	Sioux	Orange City	Covenant Kids Preschool	Family Life Staff	PWD
	Sioux	Alton	Crayon Castle	Family Life Staff	PWD
	Sioux	Sioux Center	Early Childhood Center	Family Life Staff	PWD
	Sioux		Emergency Management Agency	Lyon & Osceola Extension	OCOM
	Sioux	Rock Valley	Generations Day care and Peschool	Family Life Staff	PWD
	Sioux	Sioux Center	Learning Ship Preschool	Family Life Staff	PWD
	Sioux		NW Ia Developers Coalition	Lyon & Osceola Extension	BCOM
	Sioux		NW Ia Developers Coalition	Lyon & Osceola Extension	FAC
	Sioux		NW Ia Developers Coalition	Lyon & Osceola Extension	OCOM
	Sioux	Orange City	Orange City Day Care	Family Life Staff	PWD
	Sioux	Sioux Center	Sioux Center Arts Council (mssion/vision)	Sioux County Extension	BCOM
	Sioux	Orange City	Sioux County STEP (Educational grant)	Sioux County Extension	FAC
	Sioux	Granville	Sioux Golf	Families Extension	PWD
	Sioux	Rock Valley	Tri State Ready Mix	CTRE/CP Tech	PWD
	Sioux	Sioux Center	City of Sioux Center	CTRE/CP Tech	PWD
	Sioux	Sioux Center	Sioux Co.	CTRE/CP Tech	PWD
	Sioux	Orange City	Van Beek Natural Sciences	Food Science & Human Nutri	TAC, TT
	Sioux		40 election officials certified	Extension CED	OCOM
	Sioux	Orange City	Sioux County (Bioeconomy Discussion)	Sioux County Extension	FAC
	Sioux	All Co.Towns	Sioux County employers (Grassley forum)	Sioux County Extension	FAC
	Sioux	All Co.Towns	Sioux County employers (Harkin forum)	Sioux County Extension	FAC
	Sioux		Sioux County	Extension CED	PWD
Sioux County		77			77
			Boone, Hamilton, and Story Soil and Water Conservation Districts	NREM	TCOM
	Story	Ames	Prarie Rivers RC&D	NREM	TCOM
	Story	Ames	Farm Bureau Summit	Ag	FAC
	Story	Ames	IDNR, IDALS, Soil and Water Conservation Districts	NREM	PWD
	Story	Ames	GlobalVetLink	OIPTT	BAC
	Story	Ames	Sirrah	OIPTT	BAC
	Story	Ames	EndoMetric	OIPTT	BAC
	Story	Ames	Integrated Sensors Technologies, Inc.	OIPTT	BAC
	Story	Ames	BioCrystals	OIPTT	BAC
	Story	Ames	Quality Attributes	OIPTT	BAC
	Story	Ames	Biotronics	OIPTT	FAC
	Story	Ames	Biotronics	OIPTT	BAC
	Story	Ames	NewLink Genetics	OIPTT	FAC
	Story	Ames	MSTRS	OIPTT	FAC
	Story	Ames	Dahl Communications	OIPTT	FAC
	Story	Ames	Stach Design	OIPTT	FAC
	Story	Ames	Clearsighted	OIPTT	BAC
	Story	Ames	BioForce Nanosciences	OIPTT	FAC
	Story	Ames	Aqueterinary Services, PC	OIPTT	BAC
	Story	Ames	PK Biosciences	OIPTT	BAC
	Story	Ames	Story County Construction	OIPTT	FAC
	Story	Ames	Ames Economic Development Commission	OIPTT	FAC
	Story	Ames	EnaGen	OIPTT	FAC
	Story	Ames	ISU Facilities, Planning and Management	College of Business	FAC
	Story	Ames	SMT Construction	College of Business	BAC
	Story	Ames	Etrema	College of Business	BAC
	Story	Nevada	Almaco	College of Business	FAC
	Story	Ames	Ames Lions Club - Built Environment/Health	Landscape Architecture	PWD
	Story	Ames	Fellow Schools Safe Routes to School	Landscape Architecture	BCOM
	Story	Ames	Trails and Physical Activity	Landscape Architecture	BCOM
	Story	Ames	Ames School District	IDRO	OCOM
	Story	Ames	Story County Master Gardeners	IDRO	BCOM
	Story	Gilbert	Gilbert School District	Landscape Architecture	OCOM
	Story	Huxley	Board of Administrators	CRP	TCOM
	Story	Nevada	Story County Planning & Zoning	CRP	PWD/ TCOM

	Story	Slater	Slater	Landscape Architecture, IDRO	BCOM
	Story	Ames	Randall Corporation	College of Engineering	TAC
	Story	Ames	Ames Economic Development Commission	College of Engineering	BCOM
	Story	Ames	Palisades Corporation	College of Engineering	BAC
	Story	Ames	Genisis Biosystems, Inc.	College of Engineering	FAC
	Story	Ames	Intrusol, Inc.	College of Engineering	FAC/TAC
	Story	Ames	Best Energies	College of Engineering	FAC
	Story	Nevada	Coskata	College of Engineering	FAC
	Story	Ames	Frontline Bioenergy, Inc.	College of Engineering	FAC
	Story	Ames	Cmnet Incorporated	College of Engineering	TAC
	Story	Ames	General Atomics	College of Engineering	FAC
	Story	Ames	Intellignostics	College of Engineering	FAC
	Story	Nevada	Iowa Energy Center	College of Engineering	TAC
	Story	Ames	Fisher and Associates	College of Engineering	PWD
	Story	Ames	Mercury Marine	College of Engineering	PWD
	Story	Ames	3M	College of Engineering	PWD
	Story	Ames	Sauer Danfoss	College of Engineering	PWD
				Center for Physical and Computational Mathematics, IPRT	TCOM
	Story	Ames	City of Ames		
	Story	Ames	Advanced Structural Imaging	Center for Nondestructive Evaluation, IPRT	TAC, TT
	Story	Ames	NDE Technologies	Center for Nondestructive Evaluation, IPRT	TAC, TT
				Center for Sustainable Environmental Technologies, IPRT	
	Story	Ames	Frontline Bioenergy	Center for Sustainable Environmental Technologies, IPRT	FAC
				Center for Sustainable Environmental Technologies, IPRT	
	Story	Ames	Hawkeye Renewable	Center for Sustainable Environmental Technologies, IPRT	FAC
				Center for Sustainable Environmental Technologies, IPRT	
	Story	Ames	Iowa Energy Center	Center for Sustainable Environmental Technologies, IPRT	FAC
				Center for Sustainable Environmental Technologies, IPRT	
	Story	Ames	iPrism	Center for Sustainable Environmental Technologies, IPRT	FAC
				IPRT Company Assistance-Materials	
	Story	Ames	Ag Leader Technology, Inc.	IPRT Company Assistance-Materials	TAC
				IPRT Company Assistance-Materials	
	Story	Nevada	ALMACO	IPRT Company Assistance-Materials	TAC
				IPRT Company Assistance-Materials	
	Story	Story City	American Packaging Corporation	IPRT Company Assistance-Materials	TAC
				IPRT Company Assistance-Materials	
	Story	Ames	Facilities Planning and Management, ISU	IPRT Company Assistance-Materials	TAC
				IPRT Company Assistance-Materials	
	Story	Ames	Hach Company	IPRT Company Assistance-Materials	TAC
				IPRT Company Assistance-Materials	
	Story	Huxley	Kreg Tool Company	IPRT Company Assistance-Materials	TAC
				IPRT Company Assistance-Materials	
	Story	Nevada	Mid-America Manufacturing, Inc.	IPRT Company Assistance-Materials	TAC
				IPRT Company Assistance-Materials	
	Story	Ames	Sauer Danfoss Company	IPRT Company Assistance-Materials	TAC
				IPRT Company Assistance-Materials	
	Story	Ames	Siemens Water Technologies Corp.	IPRT Company Assistance-Materials	TAC
				IPRT Company Assistance-NDE	
	Story	Story City	American Packaging Corporation	IPRT Company Assistance-NDE	TAC
				IPRT Company Assistance-NDE	
	Story	Ames	City of Ames	IPRT Company Assistance-NDE	TAC
				IPRT Company Assistance-NDE	
	Story	Ames	Hach Company	IPRT Company Assistance-NDE	TAC
				IPRT Company Assistance-NDE	
	Story	Nevada	Mid-America Manufacturing, Inc.	IPRT Company Assistance-NDE	TAC
				IPRT Company Assistance-NDE	
	Story	Ames	Sauer Danfoss Company	IPRT Company Assistance-NDE	TAC
				IPRT Company Assistance-NDE	
	Story	Ames	Steve Kartenheuser-Individual	IPRT Company Assistance-NDE	TAC
				IPRT Company Assistance-Technology Commercialization	
	Story	Ames	Molecular Express, Inc.	IPRT Company Assistance-Technology Commercialization	TT
				IPRT Company Assistance-Technology Commercialization	
	Story	Ames	MSTRS Technologies, Inc.	IPRT Company Assistance-Technology Commercialization	TT
				IPRT Company Assistance-Technology Commercialization	
	Story	Ames	PHD Technologies LLC	IPRT Company Assistance-Technology Commercialization	TT
				IPRT Company Assistance-Technology Commercialization	
	Story	Ames	Siemens Water Technologies Corporation	IPRT Company Assistance-Technology Commercialization	TT
				Virtual Reality Applications Center, IPRT	
	Story	Ames	Clearsighted	Virtual Reality Applications Center, IPRT	BAC, TAC, FAC
				Virtual Reality Applications Center, IPRT	
	Story	Ames	Maxwell Research Corp. (Startup company: Matt Heying, Current PhD student in HCI)	Virtual Reality Applications Center, IPRT	TAC

	Story	Ames	Advanced Analytical Technologies	Food Science & Human Nutrition	TAC/FAC/TT
	Story	Story City	American Packaging	Agricultural & Biosystem Engineering - STIR	TAC
	Story	Ames	Ames Community Public Schools	EEOB - Debinski	OCOM
	Story	Ames	BASF	ABE/IGQI	TAC
	Story	Ames	Biobased Industry Outlook Conference	OBP, CCUR & others	PWD, FAC
	Story	Ames	Bioforce Nanosciences	Food Science & Human Nutrition	TAC/FAC/TT
	Story	Ames	Biorenewables Summit	OBP, CCUR & others	FAC
	Story	Ames	BiOva	CCUR	FAC
	Story	Kelley	Blue River Hybrids	Organic Ag Program (K. Delate; Agronomy & Horticulture)	TAC
	Story		Boehringer Ingelheim Vetmedica	Animal Science	FAC
	Story	Nevada	Burke Corporation	Meat Science Extension	PWD
	Story	Ames	CAI Students	Crop Advisor Institute	PWD
	Story	Ames	City of Ames	NREM	BCOM, OCOM
	Story	Colo	Distance Education Students = 1	Brenton Ctr for Ag Instruction	PWD
	Story	Gilbert	Distance Education Students = 1	Brenton Ctr for Ag Instruction	PWD
	Story	Kelley	Distance Education Students = 1	Brenton Ctr for Ag Instruction	PWD
	Story	Cambridge	Distance Education Students = 2	Brenton Ctr for Ag Instruction	PWD
	Story	Slater	Distance Education Students = 2	Brenton Ctr for Ag Instruction	PWD
	Story	Roland	Distance Education Students = 3	Brenton Ctr for Ag Instruction	PWD
	Story	Ames	Distance Education Students = 404	Brenton Ctr for Ag Instruction	PWD
	Story	Story City	Distance Education Students = 5	Brenton Ctr for Ag Instruction	PWD
	Story	Huxley	Distance Education Students = 6	Brenton Ctr for Ag Instruction	PWD
	Story	Nevada	Distance Education Students = 7	Brenton Ctr for Ag Instruction	PWD
	Story	Ames	Enagen, LLC	ABE/IGQI	TAC
	Story	Gilbert	Gilbert Community Schools	Families Extension	OCOM
	Story	Nevada	Heart of Iowa Cooperative	ABE/IGQI	TAC
	Story	Nevada	Heart of Iowa Cooperative	Economics, CCUR & others	FAC
	Story	Ames	Iowa 4-H Round-up	An Sci -- Microbiology Program	OCOM
	Story	Ames	Iowa Dietetic Assoc Annual Meeting	FSHN	FAC
	Story	Ames	Iowa Turf Grass Institute	Horticulture Research Station, ISU	TAC
	Story	Ames	Iowa Turkey Federation	Agricultural & Biosystems Engineering	TAC
	Story	Ames	Iowa Wine Growers Association	Horticulture Research Station, ISU	TAC
	Story	Ames	ISU Alumni - VEISHEA	CCUR	FAC
	Story	Ames	John Deere	OBP (Raman)	FAC
	Story	Huxley	Kreg Tool	Joseph Chen - ABE and CIRAS	TAC
	Story	Nevada	Lincoln Way Energy	ABE	TAC
	Story	Ames	Lincolnway Energy	FSHN & CCUR	TAC
	Story	Nevada	Mid West Pack	Meat Science Extension	PWD
	Story	Nevada	Mid-America Manufacturing	Joseph Chen - ABE and CIRAS	TAC
	Story	Ames	Multiple entities	OBP (Raman)	FAC
	Story	Ames	Power Film Solar	Joseph Chen - ABE and CIRAS	TAC
	Story	Ames	PSEOA Distance Education Students = 1	Brenton Ctr for Ag Instruction	PWD
	Story	Nevada	PSEOA Distance Education Students = 1	Brenton Ctr for Ag Instruction	PWD
	Story	Ames	Public	Dept. of Horticulture/ISURF - #03056, patent	TT
	Story	Nevada	Purfoods/Mom's Meals	Meat Science Extension	PWD
	Story	Ames	Science Bound Program	An Sci -- Microbiology Program	OCOM
	Story	Ames	Sirrah LLC	Animal Science and VDPAM/Harris Lab	BAC, TAC, TT
	Story	Ames	Summit Green Tiger Investments (startup)	ABE (Raman)	TAC (startup)
	Story	Ames	Vibroacoustics Solutions LLC	CCUR	TT
	Story	Ames	W&G Marketing	Meat Science Extension	PWD
	Story	Ames	Biobased Industry Outlook Conference	OBP, CCUR & others	PWD, FAC
	Story	Ames	Biorenewables Summit	OBP, CCUR & others	FAC
	Story	Ames	BiOva	CCUR	FAC
	Story	Ames	ISU Alumni - VEISHEA	CCUR	FAC
	Story	Ames	Lincolnway Energy	FSHN & CCUR	TAC

	Story	Roland	Child Serve	Extension CED	PWD
	Story	Slater	Slater	Landscape Architecture, IDRO	BCOM
	Story		Silos & Smokestacks National Heritage Area	Extension CED	OCOM
	Story		Story County	Extension CED	OCOM
	Story		Story County	Extension CED	OCOM/ PWD
	Story	Ames	Iowa State Dairy Association	Thoreson, Dale Fld Spec ANR	TAC
	Story	Nevada	HERTZ FARM MANAGEMENT	Story County Extension	FAC
	Story	Nevada	LINCOLNWAY ENERGY	Story County Extension	FAC
	Story	Ames	UNITED WAY OF STORY COUNTY	Story County Communities	FAC
	Story	Ames	HEARTLAND SENIOR SERVICES	Story County Families Unit	PWD
	Story	Ames	NUCARA PHARMACY	Story County Families Unit	PWD
	Story	Ames	AGING RESOURCES OF CENTRAL IA	Story County Families Unit	PWD
	Story	Nevada	COMMUNITY BANK	Story County Extension	FAC, TT
	Story	Nevada	STATE BANK & TRUST	Story County Extension	FAC, TT
	Story	Ames	COMMUNITY FOUNDATION OF STORY	Story County Communities	FAC, PWD
	Story	Roland	HEART OF IOWA COOP	Story County Ag & Natural Resources	FAC, PWD
	Story	Huxley	THREE C'S	Story County Youth	FAC
	Story	Ames	AG INFORMATION CENTER	Story County Ag & Natural Resources	FAC
	Story	Ames	Imran Haq (Individual Owner)	ISU Extension	PWD
	Story	Ames	Cindy Clark (Individual Owner)	ISU Extension	PWD
	Story	Ames	Alpha Delta Pi	ISU Extension	PWD
	Story	Huxley	Ballard Community Schools	ISU Extension	PWD
	Story	Ames	Border's	ISU Extension	PWD
	Story	Huxley	Dairy Queen	ISU Extension	PWD
	Story	Ames	Dairy Queen - Ames	ISU Extension	PWD
	Story	Ames	Panda Express	ISU Extension	PWD
	Story	Ames	The Flying Burrito	ISU Extension	PWD
	Story	Ames	The Rose of Ames	ISU Extension	PWD
	Story	Ames	Grau Construction	ISU Extension	TAC
	Story		Event in Story County	ISUE-CIRAS	FAC
	Story		Event in Story County	ISUE-CIRAS	FAC
	Story	Ames	Center for Crops Utilization Research	ISUE-CIRAS	FAC
	Story		Event in Story County	ISUE-CIRAS	FAC
	Story	Story City	Record Printing Co	ISUE-CIRAS	TAC
	Story	Ames	Engineering Continuing Education - SCADA, Substation and Feeder Automation in Electric Utilities Short Course	ISUE-CIRAS	PWD
	Story	Ames	Engineering Continuing Education - SCADA, Substation and Feeder Automation in Electric Utilities Short Course	ISUE-CIRAS	PWD
	Story	Ames	Engineering Continuing Education - ASCE/ICEA Surveying Conference	ISUE-CIRAS	PWD
	Story	Ames	Engineering Continuing Education - ASCE Transportation Conference	ISUE-CIRAS	PWD
	Story	Ames	Engineering Continuing Education - Iowa Better Concrete Conference	ISUE-CIRAS	PWD
	Story	Ames	Engineering Continuing Education - Greater Iowa Asphalt Conference	ISUE-CIRAS	PWD
	Story	Ames	Engineering Continuing Education - 2006 Road Profilers User Group (RPUG) Meeting	ISUE-CIRAS	PWD
	Story	Ames	Engineering Continuing Education - Electric Motor Protection Short Course	ISUE-CIRAS	PWD
	Story	Ames	Engineering Continuing Education - Iowa County Engineers Conference	ISUE-CIRAS	PWD
	Story	Ames	Engineering Continuing Education - Safety Inspection of In Service Bridges - 130055A	ISUE-CIRAS	PWD
	Story	Ames	Engineering Continuing Education - ASCE Iowa Section Annual Meeting	ISUE-CIRAS	PWD
	Story	Ames	Engineering Continuing Education - Iowa County Engineers Association Midyear Meeting	ISUE-CIRAS	PWD
	Story	Ames	Engineering Continuing Education - Electrical Distribution Systems Short Course	ISUE-CIRAS	PWD
	Story	Ames	Engineering Continuing Education - ASCE Structural Engineering Conference	ISUE-CIRAS	PWD
	Story	Ames	Engineering Continuing Education - Electric Substation Short Course	ISUE-CIRAS	PWD
	Story	Ames	Engineering Continuing Education - Special Permitting Rules and Procedures in Iowa	ISUE-CIRAS	PWD
	Story	Ames	Engineering Continuing Education - ASCE Geotechnical Conference	ISUE-CIRAS	PWD
	Story	Ames	Engineering Continuing Education - 42nd Annual Shallow Exploration Drillers Clinic (SEDC)	ISUE-CIRAS	PWD
	Story	Ames	Engineering Continuing Education - NHI Bridge Courses	ISUE-CIRAS	PWD

	Story	Ames	Engineering Continuing Edcation - Midwestern Protective Relay Short Course	ISUE-CIRAS	PWD
	Story	Ames	Engineering Continuing Edcation - Underwater Bridge Inspection NHL Course # 130091	ISUE-CIRAS	PWD
	Story	Ames	Engineering Continuing Edcation - Midwest Concrete Consortium	ISUE-CIRAS	PWD
	Story	Ames	Engineering Continuing Edcation - Midwest Thermodynamics and Statistical Mechanics Conference	ISUE-CIRAS	PWD
	Story	Ames	Engineering Continuing Edcation - Control System Cyber Security: Achieve Compliance and Secure Your Systems	ISUE-CIRAS	PWD
	Story	Ames	Engineering Continuing Edcation - ASCE Environmental and Water Resources Design Conference	ISUE-CIRAS	PWD
	Story	Ames	Engineering Continuing Edcation - SCADA, Substation and Feeder Automation in Electric Utilities Short Course	ISUE-CIRAS	PWD
	Story	Story City	American Packaging Corp	ISUE-CIRAS	TAC
	Story		Event in Story County	ISUE-CIRAS	TAC
	Story		Event in Story County	ISUE-CIRAS	TAC
	Story	Roland	Innovative Lighting Inc	ISUE-CIRAS	TAC
	Story	Nevada	Mid-America Manufacturing Inc	ISUE-CIRAS	TAC
	Story	Huxley	Kreg Tool Co	ISUE-CIRAS	TAC
	Story	Story City	The Box Company	ISUE-CIRAS	TAC
	Story	Ames	Heuss Printing Inc	ISUE-CIRAS	BAC
	Story		Event in Story County	ISUE-CIRAS	FAC
	Story	Ames	Quality Attributes Software, Inc.	ISUE-CIRAS	BAC
	Story	Story City	Record Printing Co	ISUE-CIRAS	BAC
	Story	Story City	Record Printing Co	ISUE-CIRAS	TAC
	Story	Nevada	ALMACO	ISUE-CIRAS	TAC
	Story	Nevada	Burke Marketing Corp	ISUE-CIRAS	TAC
	Story	Story City	American Packaging Corp	ISUE-CIRAS	TAC
	Story	Ames	Becker Underwood Inc	ISUE-CIRAS	TAC
	Story	Ames	Becker Underwood Inc	ISUE-CIRAS	TAC
	Story	Ames	Ames	CTRE/CP Tech	PWD
	Story	Ames	Buena Vista Co.	CTRE/CP Tech	PWD
	Story	Ames	City of Amee	CTRE/CP Tech	PWD
	Story	Ames	City of Clear Lake	CTRE/CP Tech	PWD
	Story	Ames	Clay Co.	CTRE/CP Tech	PWD
	Story	Ames	Fayette Co.	CTRE/CP Tech	PWD
	Story	Ames	FHWA	CTRE/CP Tech	PWD
	Story	Ames	FHWA	CTRE/CP Tech	PWD
	Story	Ames	FHWA-Iowa	CTRE/CP Tech	PWD
	Story	Ames	Fox Engineering	CTRE/CP Tech	PWD
	Story	Ames	Iowa Co.	CTRE/CP Tech	PWD
	Story	Ames	Iowa Concrete Paving	CTRE/CP Tech	PWD
	Story	Ames	Iowa DOT	CTRE/CP Tech	PWD
	Story	Ames	Jackson Co.	CTRE/CP Tech	PWD
	Story	Ames	Linn Co.	CTRE/CP Tech	PWD
	Story	Ames	Marion Co.	CTRE/CP Tech	PWD
	Story	Ames	Michigan CPA	CTRE/CP Tech	PWD
	Story	Ames	Monroe Co.	CTRE/CP Tech	PWD
	Story	Ames	Ready Mix Concrete Co.	CTRE/CP Tech	PWD
	Story	Ames	Rietz Consultants Ltd.	CTRE/CP Tech	PWD
	Story	Ames	Transtec	CTRE/CP Tech	PWD
	Story	Ames	Wayne Co.	CTRE/CP Tech	PWD
	Story	Ames	WHKS & Co.	CTRE/CP Tech	PWD
	Story	Huxley	Huxley	CTRE/CP Tech	PWD
	Story	Huxley	TV-45	CTRE/CP Tech	PWD
	Story	Ames	City of Ames	OBP	BAC, FAC, TAC
	Story	Ames	Frontline BioEnergy	OBP	BAC, FAC, TAC
	Story	Ames	Frontline BioEnergy	OBP	BAC, FAC, TAC
	Story	Ames	Frontline BioEnergy	OBP	BAC, FAC, TAC
	Story	Ames	Ames Economic Development Commission	Industry Relations	BCOM
	Story	Ames	Iowa Workforce Development- Ames Office	Industry Relations	BCOM
	Story	Nevada	Nevada Economic Development Council	Industry Relations	BCOM
	Story	Ames	GlobalVetLink	Industry Relations	BCOM
	Story	Ames	Frontline Bioenergy LLC	Industry Relations	TAC
	Story	Nevada	Lincolnway Energy, LLC	Industry Relations	TAC
	Story	Nevada	Lincolnway Energy, LLC	Industry Relations	TAC
	Story	Nevada	Lincolnway Energy, LLC	Industry Relations	TAC
	Story	Ames	BioForce Nanosciences	Industry Relations	TAC
	Story	Ames	EnSoft Corp	Industry Relations	TAC
	Story	Ames	Infiscape	Industry Relations	TAC
	Story	Ames	Metabolic Technologies	Industry Relations	TAC
	Story	Ames	Glycon	Industry Relations	TAC
	Story	Ames	iSeek	Industry Relations	TAC
	Story	Ames	CombiSep	Industry Relations	TAC
	Story	Nevada	Almaco	Industry Relations	TAC
	Story	Ames	City of Ames	OBP	BAC, FAC, TAC
	Story	Ames	Frontline BioEnergy	OBP	BAC, FAC, TAC
	Story	Ames	Frontline BioEnergy	OBP	BAC, FAC, TAC
	Story	Ames	Frontline BioEnergy	OBP	BAC, FAC, TAC

	Story	Nevada	Lincolnway Energy	OBP	BAC, FAC, TAC
	Story	Ames IA	Iowa Dietetic Assoc Annual Meeting	FSHN faculty included White,	FAC
	Story	Ames	Biorenewables Summit	OBP, CCUR & others	FAC
	Story	Ames	BiOva	CCUR	FAC
	Story	Ames	ISU Alumni - VEISHEA	CCUR	FAC
	Story	Nevada	Heart of Iowa Cooperative	Economics, CCUR & others	FAC
	Story	Ames	Lincolnway Energy	FSHN & CCUR	TAC
	Story	Ames	BASF	ABE/IGQI	TAC
	Story	Ames	Enagen, LLC	ABE/IGQI	TAC
	Story	Nevada	Heart of Iowa Cooperative	ABE/IGQI	TAC
	Story	Ames	Advanced Analytical Technologies	Food Science & Human Nutri	TAC, FAC, TT
	Story	Ames	Bioforce Nanosciences	Food Science & Human Nutri	TAC, FAC, TT
	Story	Ames	Vibroacoustics Solutions LLC	CCUR	TT
	Story	Gilbert	Gilbert Community Schools	ISU Extension	OCOM
	Story	Ames	Biobased Industry Outlook Conference	OBP, CCUR & others	PWD, FAC
	Story	Various	Wall Street Journal	ABE/IGQI	FAC
	Story	Ames	AmesBio inc.	Agronomy	TAC
	Story	Gilbert	Gilbert Community Schools	Agricultural Education and Studies	OCOM
	Story	Story City	Roland Story Community Schools	Agricultural Education and Studies	OCOM
	Story	Story City	Roland Story Community Schools	Agricultural Education and Studies	OCOM
	Story	Ames	Iowa Pork Industry Center	Agricultural Education and Studies	FAC
	Story	Ames	WHO AM Radio	Agricultural Education and Studies	FAC
	Story	Gilbert	Gilbert Community School	Agricultural Education and Studies	FAC
	Story	Ames	Iowa Beef Teaching/Research Station	Agricultural Education and Studies	FAC
	Story	Colo	Colo-NESCO Community School	Agricultural Education and Studies	FAC
	Story	Ames	U.S. Pork Center for Excellence	Agricultural Education and Studies	FAC
	Story	Ames	ISU Marketing	Agricultural Education and Studies	FAC
	Story	Ames	Iowa Beef Coucil	Agricultural Education and Studies	FAC
	Story		Story County Auditors	Extension CED	OCOM
	Story		Story - ISU Extension County Office Marketing Surveys	CD-DIAL - Sociology Extension	BAC
	Story		United Community School District	CD-DIAL - Sociology Extension	OCOM
	Story	Ames	Iowa Beef Industry Council - Michelle Baumhover	ISU Extension	TAC
Story County	365				365
	Tama	Buckingham	Tama County Township Trustees & Clerks	IDRO	TCOM
	Tama	Chelsea	Tama County Township Trustees & Clerks	IDRO	TCOM
	Tama	Clutier	Tama County Township Trustees & Clerks	IDRO	TCOM
	Tama	Dysart	Tama County Township Trustees & Clerks	IDRO	TCOM
	Tama	Elberon	Tama County Township Trustees & Clerks	IDRO	TCOM
	Tama	Garwin	Tama County Township Trustees & Clerks	IDRO	TCOM
	Tama	Tama	Tama County Township Trustees & Clerks	IDRO	TCOM
	Tama	Toledo	Tama County Township Trustees & Clerks	IDRO	TCOM
	Tama	Toledo	Toledo	Landscape Architecture, IDRO	BCOM
	Tama	Traer	Tama County Township Trustees & Clerks	IDRO	TCOM
	Tama	Toledo	Tama County Economic Development Corporation	College of Engineering	BCOM
	Tama	Buckingham	Distance Education Students = 2	Brenton Ctr for Ag Instruction	PWD
	Tama	Toledo	Distance Education Students = 3	Brenton Ctr for Ag Instruction	PWD
	Tama	Dysart	Van's Locker, Inc.	Meat Science Extension	PWD
	Tama	Buckingham	Tama County Township Trustees & Clerks	Extension CED, IDRO	TCOM
	Tama	Chelsea	Tama County Township Trustees & Clerks	Extension CED, IDRO	TCOM
	Tama	Clutier	Tama County Township Trustees & Clerks	Extension CED, IDRO	TCOM
	Tama	Dysart	Tama County Township Trustees & Clerks	Extension CED, IDRO	TCOM
	Tama	Elberon	Tama County Township Trustees & Clerks	Extension CED, IDRO	TCOM
	Tama	Garwin	Tama County Township Trustees & Clerks	Extension CED, IDRO	TCOM
	Tama	Tama	Tama County Township Trustees & Clerks	Extension CED, IDRO	TCOM
	Tama	Toledo	Tama County Township Trustees & Clerks	Extension CED, IDRO	TCOM
	Tama	Toledo	Toledo	Landscape Architecture, IDRO	BCOM
	Tama	Traer	NE Iowa Community Development Conference	Extension CED	FAC
	Tama	Traer	Tama County Township Trustees & Clerks	Extension CED, IDRO	TCOM
	Tama		Tama County Auditors	Extension CED	OCOM
	Tama	Toledo	Tama Co. Township Trustees Training	Tama County Extension	OCOM
	Tama	Toledo	general public - low income population	ISU Extension	OCOM
	Tama	Toledo	Child Care Providers	ISU Extension	PWD
	Tama	Traer	Traer Manufacturing	ISUE-CIRAS	TAC
	Tama	Tama	Tama Co.	CTRE/CP Tech	PWD
	Tama		25 entrepreneurs	Extension CED	BAC
	Tama		Silos & Smokestacks National Heritage Area	Extension CED	OCOM

	Tama		Tama County	Extension CED	OCOM/ PWD
	Tama	County	Supporting Kids in Prevention	4-H Youth Development	OCOM
Tama County		35			35
	Taylor	Bedford	Bedford Area Economic Development	College of Engineering	FAC
	Taylor	Lenox	Distance Education Students = 1	Brenton Ctr for Ag Instruction	PWD
	Taylor		Bedford Area Economic Development	Extension CED	FAC/ BCOM
	Taylor		Emerald Hills Dairy Consortium	Extension CED	BAC
	Taylor		Lenox Municipal Utilities	Extension CED	FAC/ BCOM
	Taylor		Rural Development Resource Center: Grow Iowa Fund; Wallace Fund; Southwest Iowa Coalition	Extension CED	BAC/ TCOM/ FAC/ BCOM
	Taylor		Southwest Iowa Coalition	Extension CED	FAC
	Taylor		Southwest Iowa Latino Resource Center	Extension CED	BAC
	Taylor		Taylor County Farm Bureau	Extension CED	FAC/ BCOM
	Taylor	Bedford	Bedford Building Supply	CIRAS	BAC
	Taylor	Bedford	Bedford Area Economic Development	Busines and Industry	BCOM
	Taylor	Lenox	Lenox Economic Development Corporation	Busines and Industry	BCOM
	Taylor	Bedford	Bedford Community	Families - Horizons	FAC
	Taylor	Bedford	Bedford Community School	Youth	OCOM
	Taylor	Clearfield	Clearfield School District	Youth	OCOM
	Taylor	Lenox	Lenox Community School	Youth	OCOM
	Taylor	New Market	New Market School District	Youth	OCOM
	Taylor	Bedford	Taylor County Public Health	Families	OCOM
	Taylor	Bedford	Taylor County Child Care Providers	Families	OCOM
	Taylor	Bedford	Tinker Tots Preschool	Families	OCOM
	Taylor	Lenox	Precious People Preschool	Families	OCOM
	Taylor	all communities	Volunteer Income Tax Assistance	ISU Extension	OCOM
	Taylor		Bedford Area Economic Development; Lenox Economic Dev; Clearfield Economic Development	Extension CED	BCOM
	Taylor		Great Western Bank - Bedford	Extension CED	FAC/ BCOM
	Taylor		Lenox Development Corporation	Extension CED	FAC/ BCOM
	Taylor		Multi-State Regional Development	Extension CED	FAC
	Taylor		Regional Marketing	Extension CED	BCOM
	Taylor		Renew Rural Iowa	Extension CED	FAC
	Taylor		Rural Development Resource Center	Extension CED	FAC
	Taylor		Rural Development Summit	Extension CED	FAC
	Taylor		Union Bank - Lenox, Corning	Extension CED	FAC/ BCOM
Taylor County		31			31
	Union	Creston	Adams Co. Steer Carcass Futurity	External Relations	FAC
	Union	Creston	Southern Iowa Council of Governments	College of Engineering	BCOM
	Union	Creston	Union County Development Corporation	College of Engineering	BCOM
	Union	Creston	Wellman Dynamics	College of Engineering	TAC
	Union	Creston	Bunn-O-Matic Corporation	IPRT Company Assistance-NDE	TAC
	Union	Afton	Distance Education Students = 1	Brenton Ctr for Ag Instruction	PWD
	Union	Kent	Distance Education Students = 1	Brenton Ctr for Ag Instruction	PWD
	Union	Lorimor	Distance Education Students = 1	Brenton Ctr for Ag Instruction	PWD
	Union	Creston	Creston Radio	Agricultural Education and Studies	FAC
	Union	Creston	Ron Dunphy	ISURF	TT
	Union	Creston	Nex-Gen Biofuels, Inc.	Extension CED	BAC
	Union	Creston	Southern Iowa Council of Governments	Extension CED	PWD
	Union		Creston Publishing	Extension CED	FAC/ BCOM
	Union		Kenyon & Nielsen, P.C.	Extension CED	FAC/ BCOM
	Union		Rural Development Resource Center	Extension CED	FAC
	Union		Rural Development Summit	Extension CED	FAC
	Union		Union County	Extension CED	TCOM
	Union	Creston	Creston Community Schools (wrote grant for funding totaling \$173,000 for Environmental and Spatial Technology Initiative)	Union County Extension	OCOM
	Union	Creston	McKinley Lake and Park Watershed	Union County Extension	OCOM
	Union	Creston	Divided We Fail issues forum	Greene County Extension	FAC
	Union	Creston	Iowa Tool and Mfg, Inc.	ISUE-CIRAS	BAC
	Union	Creston	Union County Development Association	Industry Relations	BCOM
	Union		Great Western Bank - Creston	Extension CED	FAC/ BCOM
	Union		Multi-State Regional Development	Extension CED	FAC
	Union		Renew Rural Iowa	Extension CED	FAC
	Union		Rural Development Resource Center: Grow Iowa Fund; Wallace Fund; Southwest Iowa Coalition	Extension CED	BAC/ TCOM/ FAC/ BCOM
	Union		Southwest Iowa Coalition	Extension CED	FAC
	Union		Southwestern Community College	Extension CED	FAC/ BCOM
	Union		Union County Auditors	Extension CED	OCOM
	Union		Union - ISU Extension County Office Marketing Surveys	CD-DIAL - Sociology Extension	BAC
	Union		Union County Board of Supervisors	Extension CED	FAC/ BCOM
Union County		31			31
	Van Buren	Bonaparte	Distance Education Students = 1	Brenton Ctr for Ag Instruction	PWD
	Van Buren	Keosauqua	Distance Education Students = 2	Brenton Ctr for Ag Instruction	PWD

	Van Buren		Van Buren County tourism	Extension CED	FAC
	Van Buren	Keosauqua	Johnston Catering	Van Buren Co. Extension	BAC
	Van Buren	Keosauqua	Barker Limited, INC	Van Buren Co. Extension	BAC
	Van Buren	Milton	Milton Creamery	Van Buren Co. Extension	BAC
	Van Buren	Keosauqua	Kaiser Wines	Van Buren Co. Extension	BAC
	Van Buren	Stockport	Philips Child Care	Van Buren Co. Extension	BAC
	Van Buren	Keosauqua	Barker Wire	Van Buren Co. Extension	FAC
	Van Buren	Keosauqua	Healthcare professionals	Van Buren Co. Extension	OCOM
	Van Buren	Keosauqua	Van Buren Hospital	Van Buren Co. Extension	OCOM
	Van Buren	Keosauqua	Whispering Pines Winery	Midwest Grape & Wine Industry Institute	BAC
	Van Buren	Keosauqua	Scenic Rivers Grape & Wine Assn	Midwest Grape & Wine Industry Institute	FAC
	Van Buren	Keosauqua	Van Buren Co. Hwy Dept.	CTRE/CP Tech	PWD
	Van Buren	Keosauqua	The Nest	ISU Extension	PWD
Van Buren County		15			15
	Wapello	Ottumwa	Crisis Center & Women's Shelter, Ottumwa	Johnson County Extension	PWD
	Wapello	Ottumwa	Southern Iowa Economic Development Association, Ottumwa	Johnson County Extension	PWD
	Wapello	Ottumwa	Excel Corporation	Veterinary Extension	3, 8
	Wapello	Ottumwa	Area 15-Regional Planning Comm.	CRP	TCOM
	Wapello	Ottumwa	Frog Legs, Inc.	College of Engineering	FAC
	Wapello	Ottumwa	John Deere	College of Engineering	PWD
	Wapello	Ottumwa	Distance Education Students = 6	Brenton Ctr for Ag Instruction	PWD
	Wapello	Ottumwa	PSEOA Distance Education Students = 7	Brenton Ctr for Ag Instruction	PWD
	Wapello	Ottumwa	Area 15-Regional Planning Comm.	Extension CED, CRP Extension	TCOM
	Wapello	Ottumwa	Chamber of Commerce	Extension CED	BCOM
	Wapello	Ottumwa	Citizenship Classes	Extension CED	OCOM
	Wapello	Ottumwa	Indian Hills Community College	Extension CED	OCOM
	Wapello	Ottumwa	Latino High School Students	Extension CED	FAC
	Wapello	Ottumwa	Main Street	Extension CED	OCOM
	Wapello	Ottumwa	Main Street Ottumwa	Extension CED	BCOM
	Wapello	Ottumwa	Ottumwa	Extension CED	OCOM/ TCOM
	Wapello	Ottumwa	Ottumwa Partners in Progress	Extension CED	FAC
	Wapello	Ottumwa	Ottumwa Substance Abuse Task F.	Extension CED	OCOM
	Wapello	Ottumwa	Translators and Interpreters	Extension CED	PWD
	Wapello	Ottumwa	United Way of Wapello County	Extension CED	PWD
	Wapello	Ottumwa	Upper Bound Students	Extension CED	OCOM
	Wapello		Wapello County tourism	Extension CED	FAC
	Wapello	Ottumwa	Latino High School Students	Wapello County	FAC
	Wapello	Ottumwa	Citizenship Classes	Wapello County	OCOM
	Wapello	Ottumwa	Main Street	Wapello County	OCOM
	Wapello	Ottumwa	Indian Hills Community College	Wapello County	OCOM
	Wapello	Ottumwa	Ottumwa Substance Abuse Task F.	Wapello County	OCOM
	Wapello	Ottumwa	Upper Bound Students	Wapello County	OCOM
	Wapello	Ottumwa	Translators and Interpreters	Wapello County	PWD
	Wapello	Ottumwa	John Deere Ottumwa Works	ISU Extension--Iowa Beef Center	FAC
	Wapello	Ottumwa	John Deere Ottumwa Works	ISU Extension--Iowa Beef Center	TT
	Wapello	Ottumwa	Applebee's	ISU Extension	PWD
	Wapello	Ottumwa	REL LLC	ISU Extension	PWD
	Wapello	Ottumwa	AI-Jon Inc	ISUE-CIRAS	TAC
	Wapello	Ottumwa	Ottumwa Machine Works, Inc.	ISUE-CIRAS	BAC
	Wapello		Event in Wapello County	ISUE-CIRAS	TAC
	Wapello	Eddyville	Ajinomoto Food Ingredients LLC	ISUE-CIRAS	TAC
	Wapello	Chillicothe	Wapello Co.	CTRE/CP Tech	PWD
	Wapello	Ottumwa	City of Oskaloosa	CTRE/CP Tech	PWD
	Wapello	Ottumwa	City of Ottumwa	CTRE/CP Tech	PWD
	Wapello	Ottumwa	Davis Co.	CTRE/CP Tech	PWD
	Wapello	Ottumwa	Ready Mix Concrete Co.	CTRE/CP Tech	PWD
	Wapello		United Way of Wapello County	CD-DIAL - Sociology Extension	OCOM
	Wapello		Wapello County Auditors	Extension CED	OCOM
Wapello County		44			44
	Warren	Norwalk	EMC Insurance Companies	College of Engineering	PWD
	Warren	Indianola	CAI Students	Crop Advisor Institute	PWD
	Warren	Indianola	Distance Education Students = 1	Brenton Ctr for Ag Instruction	PWD
	Warren	Milo	Distance Education Students = 1	Brenton Ctr for Ag Instruction	PWD
	Warren	New Virginia	Distance Education Students = 1	Brenton Ctr for Ag Instruction	PWD
	Warren	Norwalk	Distance Education Students = 1	Brenton Ctr for Ag Instruction	PWD
	Warren	Prole	Distance Education Students = 1	Brenton Ctr for Ag Instruction	PWD
	Warren	Milo	Milo Locker	Meat Science Extension	PWD
	Warren	Cumming	unknown	Extension CED	PWD
	Warren	Indianola	MakeMIneWine wine consumer magazine	Midwest Grape & Wine Industry Institute	TAC, BAC

	Warren	Indianola	Indianola Chamber of Commerce	Midwest Grape & Wine Industry Institute	FAC, BAC
	Warren		No Contacts that count by County Director		
	Warren	Carlisle	Welch Products Inc	ISUE-CIRAS	TAC
	Warren	Indianola	Cemen Tech Inc	ISUE-CIRAS	TAC
	Warren	Indianola	Cemen Tech Inc	ISUE-CIRAS	TAC
	Warren	Indianola	IPC	CTRE/CP Tech	PWD
	Warren	Indianola	Sternquist Construction, Inc.	CTRE/CP Tech	PWD
	Warren	Indianola	Warren Co.	CTRE/CP Tech	PWD
	Warren	Indianola	Iowa Association for Agriculture Education	Agricultural Education and Studies	OCOM
Warren County		19			18
	Washington	Mills	Planning & Zoning Commission	CRP	TCOM
	Washington	Mills	Planning & Zoning Commission	Extension CED, CRP Extension	TCOM
	Washington	Washington	Washington County Extension, Washington	Johnson County Extension	PWD
	Washington	Washington	Planning & Zoning Chair	CRP	TCOM
	Washington	Washington	Washington	Landscape Architecture, IDRO	BCOM/ PWD
	Washington	Washington	High School	CRP	BCOM
	Washington	Wellman	Wellman	Landscape Architecture, IDRO	BCOM
	Washington	Wellman	High School	CRP	BCOM
	Washington	Kalona	CIVCO Medical Solutions	College of Engineering	TAC
	Washington	Washington	POHAKU	College of Engineering	FAC
	Washington	Washington	Hays Water Science	IPRT Company Assistance-Technology Commercialization	TT
	Washington	Washington	Boyd's Sausage Company	Meat Science Extension	PWD
	Washington	Ainsworth	Distance Education Students = 1	Brenton Ctr for Ag Instruction	PWD
	Washington	Riverside	Distance Education Students = 2	Brenton Ctr for Ag Instruction	PWD
	Washington	Wellman	Mid Prairie Community School	Agricultural Education and Studies	FAC
	Washington	Washington	Compassion Iowa - Nonprofit Management Academy	Extension CED	PWD
	Washington	Washington	High School	Extension CED, CRP Extension	BCOM
	Washington	Washington	Planning & Zoning Chair	Extension CED, CRP Extension	TCOM
	Washington	Washington	Washington	Landscape Architecture, IDRO	BCOM/ PWD
	Washington	Washington	Washington County tourism	Extension CED	BCOM
	Washington	Wellman	High School	Extension CED, CRP Extension	BCOM
	Washington	Wellman	Wellman	Landscape Architecture, IDRO	BCOM
	Washington		Washington County	Extension CED	OCOM
	Washington		Move The Mountain Leadership Center	Johnson County Extension	PWD
	Washington		Marriage Matters	Johnson County Extension	PWD
	Washington		Iowa Center for Faith Based Community Initiatives	Johnson County Extension	PWD
	Washington	Washington	Hospice of Washington County, Washington	Johnson County Extension	PWD
	Washington	Washington	Buffalo Wild Wings	ISU Extension	PWD
	Washington	Washington	City of Washington	CTRE/CP Tech	PWD
	Washington	Washington	Washington Co.	CTRE/CP Tech	PWD
	Washington		County Local Housing Trust Fund	Extension CED	TCOM
Washington County		31			31
	Wayne	Corydon	Shivvers Incorporated	OIPTT	FAC
	Wayne	Corydon	Shivvers Inc.	ABE	TAC
	Wayne	Corydon	Wayne Comm School	McNay Research Farm, ISU	OCOM
	Wayne	Allerton	Allerton - Horizons Project	Families	OCOM
	Wayne	Corydon	Corydon - Horizons Project	Families	OCOM
	Wayne	Humeston	Humeston - Horizons Project	Families	OCOM
	Wayne	Seymour	Seymour - Horizons Project	Families	OCOM
	Wayne	Allerton	Allerton - Horizons Project	ISU Extension	OCOM
	Wayne	Corydon	Corydon - Horizons Project	ISU Extension	OCOM
	Wayne	Seymour	Seymour - Horizons Project	ISU Extension	OCOM
	Wayne	Humeston	Humeston - Horizons Project	ISU Extension	OCOM
	Wayne	Chariton	Wayne Co.	CTRE/CP Tech	PWD
	Wayne		Wayne County Auditors	Extension CED	OCOM
Wayne County		13			13
	Webster	Fort Dodge	YOUR Inc Head Start	ISU Extension	PWD
	Webster	Ft.Dodge	Fort Dodge Animal Health	College of Engineering	PWD
	Webster	Fort Dodge	Josephson Manufacturing Company	IPRT Company Assistance-Materials	TAC
	Webster	Fort Dodge	C&S Products Co. Inc.	Animal Science-Bregendahl	TAC
	Webster	Harcourt	Distance Education Students = 1	Brenton Ctr for Ag Instruction	PWD
	Webster	Vincent	Distance Education Students = 2	Brenton Ctr for Ag Instruction	PWD

	Webster	Fort Dodge	Distance Education Students = 6	Brenton Ctr for Ag Instruction	PWD
	Webster	Fort Dodge	Iowa Producers - Cooperative Formation	Economics & CCUR	BAC
	Webster	Fort Dodge	Lopez Foods, Inc.	Meat Science Extension	PWD
	Webster	Fort Dodge	Tate & Lyle	Ag and Biosystems Engineering & CCUR	FAC
	Webster	Fort Dodge	VeraSun	CCUR	FAC
	Webster	Fort Dodge	Iowa Producers - Cooperative Formation	Economics & CCUR	BAC
	Webster	Fort Dodge	Tate & Lyle	Ag and Biosystems Engineering & CCUR	FAC
	Webster	Fort Dodge	VeraSun	CCUR	FAC
	Webster	Fort Dodge	Ft. Dodge Historical Foundation	Extension CED	OCOM
	Webster	Fort Dodge	Schmeltzer Foundation	Extension CED	OCOM
	Webster	Fort Dodge	Webster County Auditors	Extension CED	OCOM
	Webster	Region	Mid-Iowa Economic Development	Greene County Extension	FAC
	Webster		Tate & Lyle	Webster Co. Extension - CEED	BAC
	Webster		Verasun	Webster Co. Extension - CEED	BAC
	Webster		NEW Coop	Webster Co. Extension - CEED	TAC
	Webster	Fort Dodge	Community Health Clinic	Webster Co. Extension - CEED	OCOM
	Webster	Fort Dodge	Friendship Haven	Webster Co. Extension - CEED	OCOM
	Webster		Community Foundation	Webster Co. Extension - CEED	OCOM
	Webster	Fort Dodge	Ag Committee - Chamber	Webster Co. Extension - CEED	FAC
	Webster		Mid Iowa Growth Partners - 9 Co. Region	Webster Co. Extension - CEED	BCOM
	Webster		ICCC	Webster Co. Extension - CEED	OCOM
	Webster	Fort Dodge	Butler School	Webster Co. Extension - CEED	OCOM
	Webster		Rabiner Boys Ranch	Webster Co. Extension - CEED	OCOM
	Webster		Prairie Valley Schools	Webster Co. Extension - CEED	OCOM
	Webster		Smeltzer Trust - Conservation	Webster Co. Extension - CEED	FAC
	Webster	Fort Dodge	low income population -via United Way	ISU Extension	OCOM
	Webster	Fort Dodge	PROSPER-Schools, Wal-Mart, Target, businesses	ISU Extension	PWD
	Webster	Fort Dodge area	Child Care Providers	ISU Extension	PWD
	Webster	Fort Dodge	Fort Dodge Correctional Facility	ISU Extension	PWD
	Webster	Fort Dodge	Community Family Resources	ISU Extension	PWD
	Webster	Fort Dodge area	ServeSafe Food Safety Course	ISU Extension	PWD
	Webster	Fort Dodge	Land O Lakes; Smithway Trucking	ISU Extension	PWD
	Webster	Fort Dodge	Lighten Up Iowa; Hy-Vee, Hospital, NEW Coop	ISU Extension	PWD
	Webster	Fort Dodge	Home Care Aides; Head Start Staff	ISU Extension	PWD
	Webster	Fort Dodge area	Area Agency on Aging-Meal Site workers	ISU Extension	PWD
	Webster	Fort Dodge	C and S Products Co	ISUE-CIRAS	TAC
	Webster		Event in Webster County	ISUE-CIRAS	PWD
	Webster	Fort Dodge	Misty Harbor	ISUE-CIRAS	BAC
	Webster	Fort Dodge	Misty Harbor	ISUE-CIRAS	BAC
	Webster	Fort Dodge	Arnold Consulting	ISUE-CIRAS	BAC
	Webster	Fort Dodge	Josephson Manufacturing Co	ISUE-CIRAS	BAC
	Webster	Fort Dodge	Fort Dodge Animal Health	ISUE-CIRAS	TAC
	Webster	Fort Dodge	TGC Machine, Inc.	ISUE-CIRAS	TAC
	Webster	Fort Dodge	Josephson Manufacturing Co	ISUE-CIRAS	TAC
	Webster	Fort Dodge	Fort Dodge	CTRE/CP Tech	PWD
	Webster	Fort Dodge	MER Engineering	CTRE/CP Tech	PWD
	Webster	Fort Dodge	Iowa Producers - Cooperative Formation	Economics & CCUR	BAC
	Webster	Fort Dodge	Tate & Lyle	Ag and Biosystems Engineering	FAC
	Webster	Fort Dodge	VeraSun	CCUR	FAC
	Webster	Fort Dodge	Fort Dodge	Extension CED	TCOM
	Webster		Webster County	Extension CED	PWD
	Webster	Fort Dodge	Brokaw Equip / Owner Sucession	Webster Co. Extension - CEED	BAC
Webster County	58				58
	Winnebago	Forest City	Forest City	Landscape Architecture, IDRO	BCOM
	Winnebago	Forest City	Distance Education Students = 1	Brenton Ctr for Ag Instruction	PWD
	Winnebago	Leland	Thompson Seed	ISURF	TT
	Winnebago	Forest City	Forest City	Landscape Architecture, IDRO	BCOM
	Winnebago	Buffalo Center	North Iowa Community School	4-H Youth Development	OCOM
	Winnebago	Forest City	Forest City Community Schools	4-H Youth Development	OCOM
	Winnebago	Lake Mills	Lake Mills Community School	4-H Youth Development	OCOM
	Winnebago	Lake Mills	Larson Manufacturing	Winnebago County Extension	PWD
	Winnebago	Lake Mills	Dras Cases Inc	ISUE-CIRAS	BAC

	Winnebago	Lake Mills	Dras Cases Inc	ISUE-CIRAS	TAC
	Winnebago	Forest City	Winnebago Industries Inc - Forest City	ISUE-CIRAS	TAC
	Winnebago	Forest City	Winnebago Industries Inc - Forest City	ISUE-CIRAS	TAC
	Winnebago	Forest City	Winnebago Industries Inc - Forest City	ISUE-CIRAS	TAC
	Winnebago	Forest City	Winnebago Industries Inc - Forest City	ISUE-CIRAS	TAC
	Winnebago	Forest City	Winnebago Industries Inc - Forest City	ISUE-CIRAS	TAC
	Winnebago	Forest City	Winnebago Industries Inc - Forest City	ISUE-CIRAS	TAC
	Winnebago	Forest City	Winnebago Industries Inc - Forest City	ISUE-CIRAS	TAC
	Winnebago	Forest City	Winnebago Industries Inc - Forest City	ISUE-CIRAS	TAC
	Winnebago	Forest City	Winnebago Industries Inc - Forest City	ISUE-CIRAS	TAC
	Winnebago	Forest City	Winnebago Industries Inc - Forest City	ISUE-CIRAS	TAC
	Winnebago	Forest City	Winnebago Industries Inc - Forest City	ISUE-CIRAS	TAC
	Winnebago	Forest City	Winnebago Industries Inc - Forest City	ISUE-CIRAS	TAC
	Winnebago	Forest City	Winnebago Industries Inc - Forest City	ISUE-CIRAS	TAC
	Winnebago	Forest City	Winnebago Industries Inc - Forest City	ISUE-CIRAS	TAC
	Winnebago	Forest City	Winnebago Industries Inc - Forest City	ISUE-CIRAS	TAC
	Winnebago	Forest City	Winnebago Industries Inc - Forest City	ISUE-CIRAS	TAC
	Winnebago	Forest City	Winnebago Industries Inc - Forest City	ISUE-CIRAS	TAC
	Winnebago	Forest City	Winnebago Industries Inc - Forest City	ISUE-CIRAS	TAC
	Winnebago	Forest City	Winnebago Industries Inc - Forest City	ISUE-CIRAS	TAC
	Winnebago	Forest City	City of Forest City	CTRE/CP Tech	PWD
	Winnebago	Lake Mills	City of Lake Mills	CTRE/CP Tech	PWD
Winnebago County		31			31
	Winneshiek	Decorah	Decorah	Landscape Architecture, IDRO	BCOM/ OCOM
	Winneshiek	Upper Explorerland	Building & Zoning	CRP	TCOM
	Winneshiek	Decorah	Benham	College of Engineering	PWD
	Winneshiek	Decorah	Platinum Equity	College of Engineering	PWD
	Winneshiek	Decorah	Deco Products Company	IPRT Company Assistance-Materials	TAC
	Winneshiek	Fort Atkinson	CAI Students	Crop Advisor Institute	PWD
	Winneshiek	Decorah	Distance education student - BRT 501	OBP/ABE (Raman)	PWD
	Winneshiek	Castalia	Distance Education Students = 5	Brenton Ctr for Ag Instruction	PWD
	Winneshiek	Fort Atkinson	Kruse Hatchery	Meat Science Extension	PWD
	Winneshiek	Decorah	Lynch BBQ Company	Meat Science Extension	PWD
	Winneshiek	Calmar	PSEOA Distance Education Students = 2	Brenton Ctr for Ag Instruction	PWD
	Winneshiek	Calmar	Spillville Locker	Meat Science Extension	PWD
	Winneshiek	Spillville	Spillville Lockers Inc.	Meat Science Extension	PWD
	Winneshiek	Decorah	Wapsie Produce, Inc.	Meat Science Extension	PWD
	Winneshiek	Calmar	Northeast Iowa Community College	Agricultural Education and Studies	OCOM
	Winneshiek	Decorah	Decorah Community School	Agricultural Education and Studies	FAC
	Winneshiek	Burr Oak	Laura Ingalls Wilder Museum	Extension CED	FAC
	Winneshiek	Calmar	NE Iowa Community Development Conference	Extension CED	FAC
	Winneshiek	Castalia	Nex-Gen Biofuels, Inc.	Extension CED	BAC
	Winneshiek	Decorah	Decorah	Landscape Architecture, IDRO	BCOM/ OCOM
	Winneshiek	Decorah	East Side School Preservation Group	Extension CED	FAC
	Winneshiek	Decorah	NE Iowa Community Development Conference	Extension CED	FAC/ BCOM
	Winneshiek	Upper Explorerland	Building & Zoning	Extension CED, CRP Extension	TCOM
	Winneshiek		Chamber/Economic Dev/County Extension	Extension CED	PWD
	Winneshiek		County Local Housing Trust Fund	Extension CED	TCOM
	Winneshiek		NE Iowa Food & Farm Coalition	CD-DIAL - Sociology Extension	BAC
	Winneshiek		Silos & Smokestacks National Heritage Area	Extension CED	OCOM
	Winneshiek		Northeast Iowa Food & Farm Coalition	Winneshiek County Extension	BCOM
	Winneshiek	Decorah	Winneshiek County Board of Supervisors	Winneshiek County Extension	BCOM
	Winneshiek	Decorah	Winneshiek County Economic Dev. Board	Winneshiek County Extension	BCOM
	Winneshiek		Northeast Iowa Food & Fitness Initiative	Winneshiek County Extension	BCOM
	Winneshiek	Decorah	Wapsi Produce	Winneshiek County Extension	FAC
	Winneshiek	Decorah	Lynch Livestock & Catering	Winneshiek County Extension	FAC
	Winneshiek	Calmar	Agricultural Dairy Builders	Thoreson, Dale Fld Spec ANR	TAC
	Winneshiek	Decorah	Economic Developers of IA and MN	Thoreson, Dale Fld Spec ANR	BCOM
	Winneshiek	Calmar	dairy construction companies	Dairy team	TAC
	Winneshiek	Calmar	dairy farms	Robert Tigner	TAC
	Winneshiek	Calmar	crop farms	Robert Tigner	BAC
	Winneshiek	Decorah	Cutting Edge Enterprise LLC	ISUE-CIRAS	BAC
	Winneshiek	Decorah	Erdman Engineering, P.C.	CTRE/CP Tech	PWD
	Winneshiek	Decorah	Holcim (US) Inc	CTRE/CP Tech	PWD
	Winneshiek	Decorah	Nelson Consulting	CTRE/CP Tech	PWD
	Winneshiek	Decorah	Winneshiek Co.	CTRE/CP Tech	PWD
	Winneshiek		NE Iowa Community Development Conference	Extension CED	FAC

Winneshiek County	44				44
Woodbury	Sioux City	First National Bank	Communities Extension	OCOM	
Woodbury	Sioux City	Sioux City Foundry Co	College of Business	FAC	
Woodbury	Sioux City	JacobsonBekins	College of Business	FAC	
Woodbury	Sioux City	Red Wheel Fundraising/Broadway Foods	College of Business	BAC	
Woodbury	Moville	Moville	Landscape Architecture, IDRO	BCOM	
Woodbury	Sergeant Bluff	P & Z Commission Member	CRP	TCOM	
Woodbury	Sergeant Bluff	Zoning Board of Adjustment	CRP	TCOM	
Woodbury	Sioux City	Iowa Department of Economic Development	IDRO	BCOM	
Woodbury	Sioux City	American Popcorn Company	College of Engineering	PWD	
Woodbury	Sioux City	Siouxland Dist. Health	College of Engineering	PWD	
Woodbury	Sioux City	GELITA North America	IPRT Company Assistance-Materials	TAC	
Woodbury	Sioux City	Wilson Trailer Company	IPRT Company Assistance-Materials	TAC	
Woodbury	Sioux City	Nutra-Flo	IPRT Company Assistance-Technology Commercialization	TT	
Woodbury	Sioux City	Sioux City Police Department	Midwest Forensics Resource Center, IPRT	PWD	
Woodbury	Sioux City	Chief Energy	OBP (Fales, Raman)	FAC	
Woodbury	Sioux City	Cloverleaf Cold Storage	Meat Science Extension	PWD	
Woodbury	Sioux City	Distance education student - BRT 501	OBP/ABE (Raman)	PWD	
Woodbury	Sioux City	Distance Education Students = 4	Brenton Ctr for Ag Instruction	PWD	
Woodbury	Sioux City	Feed Energy Company	Agricultural & Biosystem Engineering - STIR	TAC	
Woodbury	Sioux City	Loess Hills Prairie Seminar Group	Western Research Farm, ISU	FAC	
Woodbury	Sioux City	Sadex	Meat Science Extension	PWD	
Woodbury	Sioux City	Verschoor Meats	Meat Science Extension	PWD	
Woodbury	Lawton	Envirotech Systems, Inc.	ISURF	TT	
Woodbury	Moville	Moville	Landscape Architecture, IDRO	BCOM	
Woodbury	Sergeant Bluff	P & Z Commission Member	Extension CED, CRP Extension	TCOM	
Woodbury	Sergeant Bluff	Zoning Board of Adjustment	Extension CED, CRP Extension	TCOM	
Woodbury	Sioux City	Compassion Iowa - Nonprofit Management Academy	Extension CED	PWD	
Woodbury	Sioux City	Iowa Department of Economic Development	IDRO	BCOM	
Woodbury	Sioux City	Sioux City	Extension CED	TCOM/ OCOM/ PWD	
Woodbury	Sioux City	unknown	Extension CED	PWD	
Woodbury	Sioux City	Economic Development Partners group	ISU Extension	BCOM	
Woodbury	Sioux City	Economic development - Midstates conf.	ISU Extension	BCOM	
Woodbury	Sioux City	economic development -regional planning	ISU Extension	BCOM	
Woodbury	Sioux City	Wind energy conference planning	ISU Extension	BCOM	
Woodbury	Moville	Woodbury Central Community School	ISU Extension	PWD	
Woodbury	Sioux City	Taco John's	ISU Extension	PWD	
Woodbury	Sioux City	Dairy Queen	ISU Extension	PWD	
Woodbury	Sioux City	Mercy Medical Center	ISU Extension	PWD	
Woodbury	Sergeant Bluff	Floyd House Assisted Living	ISU Extension	PWD	
Woodbury	Sioux City	Mid-Step Services	ISU Extension	PWD	
Woodbury	Sioux City	Barnes & Noble	ISU Extension	PWD	
Woodbury	Sioux City	Siouxland Surgery Center	ISU Extension	PWD	
Woodbury	Sioux City	Bickford Cottage	ISU Extension	PWD	
Woodbury	Sioux City	Taco Bell	ISU Extension	PWD	
Woodbury	Anthon	Anthon-Oto Community School District	ISU Extension	PWD	
Woodbury	Sioux City	Negron's Mexican Food	ISU Extension	PWD	
Woodbury	Sioux City	Coyote Canyon	ISU Extension	PWD	
Woodbury	Sioux City	Clarion Hotel	ISU Extension	PWD	
Woodbury	Sioux City	Distinctive Gourmet	ISU Extension	PWD	
Woodbury	Sioux City	Alzheimer's Association	ISU Extension	PWD	
Woodbury	Sioux City	HuHot Mongolian Grill	ISU Extension	PWD	
Woodbury	Sioux City	Chick Fil-A Restaurant	ISU Extension	PWD	
Woodbury	Sioux City	CBM	ISU Extension	PWD	
Woodbury	Sioux City	Red Robin Restaurant	ISU Extension	PWD	
Woodbury	Sioux City	Kentucky Fried Chicken	ISU Extension	PWD	
Woodbury	Sioux City	Arby's Restaurant	ISU Extension	PWD	
Woodbury	Sioux City	Prime Living Apartments	ISU Extension	PWD	
Woodbury	Sioux City	Food Bank of Siouxland	ISU Extension	PWD	
Woodbury	Sioux City	Community Action Agency of Siouxland	ISU Extension	PWD	
Woodbury	Sioux City	Crittenton Center	ISU Extension	PWD	
Woodbury	Sioux City	3 Non profit series offered- Planning group	ISU Extension	PWD	
Woodbury	Sioux City	Compassion Iowa groups hosted here	ISU Extension	PWD	
Woodbury	Sioux City	Siouxland Industrial Roundtable training	ISU Extension	PWD	
Woodbury	Sioux City	Jackson Recovery - training for staff	ISU Extension	PWD	
Woodbury	Sergeant Bluff	Prime Living Apartments	ISU Extension	PWD	
Woodbury	Sioux City	2 Child care conference planning	ISU Extension	OCOM	
Woodbury	Sioux City	council- sex. assault & dom. violence	ISU Extension	OCOM	
Woodbury	Sioux City	Action - community meetings	ISU Extension	OCOM	
Woodbury		Event in Woodbury County	ISUE-CIRAS	TAC	

	Woodbury	Sioux City	Sioux City Foundry Co	ISUE-CIRAS	TAC
	Woodbury		Event in Woodbury County	ISUE-CIRAS	FAC
	Woodbury		Event in Woodbury County	ISUE-CIRAS	FAC
	Woodbury		Event in Woodbury County	ISUE-CIRAS	BAC
	Woodbury		Event in Woodbury County	ISUE-CIRAS	TAC
	Woodbury	Sioux City	Nutra-Flo Co - Sioux City	ISUE-CIRAS	TAC
	Woodbury	Sioux City	Nutra-Flo Co - Sioux City	ISUE-CIRAS	TAC
	Woodbury	Sioux City	American Pop Corn Co	ISUE-CIRAS	TAC
	Woodbury	Sioux City	Sioux Rubber Applicators	ISUE-CIRAS	TAC
	Woodbury	Sioux City	2 Child care conference planning	families	OCOM
	Woodbury	Sioux City	3 Non profit series offered- Planning group	community and ED	PWD
	Woodbury	Sioux City	Action - community meetings	families	OCOM
	Woodbury	Sioux City	Alzheimer's Association	Families Extension	PWD
	Woodbury	Anthon	Anthon-Oto Community School District	Families Extension	PWD
	Woodbury	Sioux City	Arby's Restaurant	Families Extension	PWD
	Woodbury	Sioux City	Barnes & Noble	Families Extension	PWD
	Woodbury	Sioux City	Bickford Cottage	Families Extension	PWD
	Woodbury	Sioux City	CBM	Families Extension	PWD
	Woodbury	Sioux City	Chick Fil-A Restaurant	Families Extension	PWD
	Woodbury	Sioux City	Clarion Hotel	Families Extension	PWD
	Woodbury	Sioux City	Community Action Agency of Siouxland	Families Extension	PWD
	Woodbury	Sioux City	Compassion Iowa groups hosted here	community and ED	PWD
	Woodbury	Sioux City	council- sex. assault & dom. violence	families	OCOM
	Woodbury	Sioux City	Coyote Canyon	Families Extension	PWD
	Woodbury	Sioux City	Crittenton Center	Families Extension	PWD
	Woodbury	Sioux City	Dairy Queen	Families Extension	PWD
	Woodbury	Sioux City	Distinctive Gourmet	Families Extension	PWD
	Woodbury	Sioux City	Economic development - Midstates conf.	community and ED	BCOM
				families and community and ED	
	Woodbury	Sioux City	Economic Development Partners group	ED	BCOM
	Woodbury	Sioux City	economic development -regional planning	community and ED	BCOM
	Woodbury	Sergeant Bluff	Floyd House Assisted Living	Families Extension	PWD
	Woodbury	Sioux City	Food Bank of Siouxland	Families Extension	PWD
	Woodbury	Sioux City	HuHot Mongolian Grill	Families Extension	PWD
	Woodbury	Sioux City	Jackson Recovery - training for staff	families	PWD
	Woodbury	Sioux City	Kentucky Fried Chicken	Families Extension	PWD
	Woodbury	Sioux City	Mercy Medical Center	Families Extension	PWD
	Woodbury	Sioux City	Mid-Step Services	Families Extension	PWD
	Woodbury	Sioux City	Negron's Mexican Food	Families Extension	PWD
	Woodbury	Sioux City	Prime Living Apartments	Families Extension	PWD
	Woodbury	Sioux City	Red Robin Restaurant	Families Extension	PWD
	Woodbury		SCORE	Communities	BCOM
	Woodbury	Sioux City	Siouxland Industrial Roundtable training	business and Industry	PWD
	Woodbury	Sioux City	Siouxland Surgery Center	Families Extension	PWD
	Woodbury	Sioux City	Taco Bell	Families Extension	PWD
	Woodbury	Sioux City	Taco John's	Families Extension	PWD
	Woodbury	Sioux City	Wind energy conference planning	community and ED	BCOM
	Woodbury	Moville	Woodbury Central Community School	Families Extension	PWD
	Woodbury	S. Sioux City	Olsson Associates	CTRE/CP Tech	PWD
	Woodbury	Salix	Headwaters Resources	CTRE/CP Tech	PWD
	Woodbury	Sergeant Bluff	Nebraska Ash Company	CTRE/CP Tech	PWD
	Woodbury	Sergeant Bluff	Veenstra & Kimm	CTRE/CP Tech	PWD
	Woodbury	Sioux	Woodbury Co.	CTRE/CP Tech	PWD
	Woodbury	Sioux City	Buell Winter Mousel & Assoc.	CTRE/CP Tech	PWD
	Woodbury	Sioux City	Certified Testing Services Inc.	CTRE/CP Tech	PWD
	Woodbury	Sioux City	City of Sioux City	CTRE/CP Tech	PWD
	Woodbury	Sioux City	DeWild Grant Reckert & Assoc Co.	CTRE/CP Tech	PWD
	Woodbury	Sioux City	Dotzler Engineering Enterprises	CTRE/CP Tech	PWD
	Woodbury	Sioux City	FEH Associates., Inc.	CTRE/CP Tech	PWD
	Woodbury	Sioux City	Gleeson Constructors, LLC	CTRE/CP Tech	PWD
	Woodbury	Sioux City	Howard R. Green Co.	CTRE/CP Tech	PWD
	Woodbury	Sioux City	Iowa Concrete Paving	CTRE/CP Tech	PWD
	Woodbury	Sioux City	Iowa DOT	CTRE/CP Tech	PWD
	Woodbury	Sioux City	Knife River Midwest	CTRE/CP Tech	PWD
	Woodbury	Sioux City	Kraco Contractors	CTRE/CP Tech	PWD
	Woodbury	Sioux City	MidAmerican Energy	CTRE/CP Tech	PWD
	Woodbury	Sioux City	Olsson Associates	CTRE/CP Tech	PWD
	Woodbury	Sioux City	Rose Engineering PC	CTRE/CP Tech	PWD
	Woodbury	Sioux City	Schroder Engineering	CTRE/CP Tech	PWD
	Woodbury	Sioux City	Sioux City	CTRE/CP Tech	PWD
	Woodbury	Sioux City	Standard Ready Mix Concrete	CTRE/CP Tech	PWD
	Woodbury	Sioux City	Woodbury Co.	CTRE/CP Tech	PWD
	Woodbury	South Sioux City	Olsson Associates	CTRE/CP Tech	PWD
	Woodbury	Sioux City	City Local Housing Trust	Extension CED	TCOM
Woodbury County		142			142
	Worth	Manly	Manly	Landscape Architecture, IDRO	BCOM
	Worth	Northwood	Northwood	Landscape Architecture, IDRO	BCOM
	Worth	Manly	Sunny Fresh Foods	College of Engineering	PWD
	Worth	Manly	Manly	Landscape Architecture, IDRO	BCOM
	Worth	Northwood	Northwood	Landscape Architecture, IDRO	BCOM

	Worth		SCORE	Extension CED	BCOM
	Worth		Siouxland Human Investment Partnership	CD-DIAL - Sociology Extension	OCOM
	Worth		Woodbury County Auditors	Extension CED	OCOM
	Worth	Northwood	Northwood-Kensett Community School	4-H Youth Development	OCOM
	Worth	Northwood	Advanced Component Technologies	ISUE-CIRAS	TAC
	Worth	Northwood	Advanced Component Technologies	ISUE-CIRAS	TAC
	Worth	Northwood	Advanced Component Technologies	ISUE-CIRAS	TAC
	Worth		Silos & Smokestacks National Heritage Area	Extension CED	OCOM
	Worth		Worth County	Extension CED	OCOM
Worth County		14			14
	Wright	Eagle Grove	Fairgrounds Masterplan	Landscape Architecture	BCOM
	Wright	Eagle Grove	Wright County Fair Board	Landscape Architecture IDRO	TCOM
	Wright	Belmond	CAI Students	Crop Advisor Institute	PWD
	Wright	Goldfield	Distance Education Students = 1	Brenton Ctr for Ag Instruction	PWD
	Wright	Clarion	Distance Education Students = 3	Brenton Ctr for Ag Instruction	PWD
	Wright	Woolstock	Distance Education Students = 4	Brenton Ctr for Ag Instruction	PWD
	Wright	Eagle Grove	Lewright Meats, Inc.	Meat Science Extension	PWD
	Wright	Rowan	Rowan Public Library	Northern Research Farm, ISU	OCOM
	Wright	Clarion	Wright County Homeland Security Emergency Management	Extension CED	PWD
	Wright	Eagle Grove	Eagle Grove	Extension CED	TCOM
	Wright	Eagle Grove	Fairgrounds Masterplan	Extension CED, Landscape Architecture Extension	BCOM
	Wright	Eagle Grove	Wright County Fair Board	Landscape Architecture Extension, IDRO	TCOM
	Wright		Silos & Smokestacks National Heritage Area	Extension CED	OCOM
	Wright		Wright County Medical Conference	Extension CED	PWD
	Wright	Clarion	Wright Medical Center	Communities Field Specialist	PWD
	Wright	Clarion	general public - low income population	ISU Extension	OCOM
	Wright	Eagle Grove	McKinley Advertising	ISUE-CIRAS	BAC
	Wright	Clarion	Patington, Inc.	ISUE-CIRAS	BAC
	Wright	Clarion	Hagie Manufacturing Co	ISUE-CIRAS	TAC
	Wright	Clarion	Hagie Manufacturing Co	ISUE-CIRAS	TAC
	Wright		Wright County Medical Conference	Communities	PWD
	Wright		Wright County	Extension CED	OCOM/ PWD
	Wright	Eagle Grove	Lewright Meats Inc.	Business and Industry	BAC
	Wright	Clarion	Hagie Manufacturing	Business and Industry	TAC
	Wright	Belmond	City of Belmond	County Extension	OCOM
Wright County		25			25
Grand Total		4484			4483

Categories for Reporting of Technology Transfer & Economic Development Activities

1. **Business assistance to companies (BAC)** including market research, business plans, and strategic planning, i.e., the financial side
2. **Business assistance to communities, regions & econ development groups (BCOM)**--'business' here has a broad interpretation, including e.g. community planning
3. **Technical assistance to companies and industry associations (TAC)**--shorter or larger projects, engineering and science oriented, plant lay-out designs, and quality control.
4. **Technical assistance to communities and regions (TCOM)**--road, water, sewer, i.e. mostly infrastructure etc
5. **Facilitation (FAC)**--includes hosting company visits and organizing visits to companies, interacting with economic development groups, industry associations, etc., and coordinating participation in conferences and other events
6. **Other community assistance (OCOM)**, e.g. school, law enforcement groups, healthcare professionals, etc
7. **Professional and workforce development, including distance education for credit and not for credit (PWD)**--includes professional development programs for individuals not at ISU
8. **Technology transfer (TT)** in the narrow sense, i.e. activities related to ISU technology development and licensing.

Start-up companies are of great interest to many who will receive our reports. Therefore we will separate out start-up companies as a sub-category in categories 1, 2 and 3. We define 'start-up company' as any business that has been in existence five years or less. Newly founded or acquired subsidiaries of larger companies fall into this category, if the subsidiary exists for five years or less.

When collecting info, count incidents, not dollars.

IOWA STATE UNIVERSITY GROW IOWA VALUES FUND UPDATE

AUGUST 2007

FY06 FUNDED PROJECTS

Final Reports

Principal Investigator	Project Title	Award Amount
Johnny Wong	Quality Assessment Tools for Colonoscopy	\$75,405
Victor Lin	Enhancing the Soy Biorefinery	\$140,000
Arun Somani	Model-based Reasoning for Software: Advanced Algorithmic Techniques and Prototype Implementation	\$97,573
Atul Kelkar	Pneumatic Continuously Variable Natural Frequency and Damping Isolator for Active Suspensions	\$73,919
Matthew Erdman	Viral replicon particle discovery research for development of improved vaccines for swine	\$104,064

Ongoing Projects

Update period: January 01, 2007 – June 30, 2007

Principal Investigator	Project Title	Award Amount
Surya Mallapragada	Protein Micropatterning on Microsensors to Quantify Cell Cytotoxicity of Adherent and Non-adherent Cells	\$21,525
Byron Brehm-Stecher	Applied Nanotechnology for Label-free Detection of Pathogen-Specific Nucleic Acids	\$99,800
Martha James	Development of Novel Digestion-Resistant Starches from Corn to Combat Human Disease	\$99,400
David Grewell	Retooling Ethanol Industries: Integrating Ultrasonics into Dry Corn Milling to Enhance Ethanol Yield	\$80,519

Quality Assessment Tools for Colonoscopy

Principal Investigator: Johnny Wong

Co-PIs: Wallapak Tavanapong

Industry Partners (company names only): EndoMetric, LLC

Project Goal: To enhance and integrate our proof-of-concept software for objectively measuring the quality of colonoscopy and to test its value in a high volume, world-class colonoscopy practice in preparation for commercialization.

Executive Summary:

Please provide a 300-500 word summary of the final results of the project (text only, 2500 character maximum), including the commercialization status.

We have met and exceeded the milestones outlined in the original proposal.

I. Progress on Software Development

- Arthemis 3.0 (or EndoMetric-Manual--Software for annotating colonoscopy videos): We completed the implementation of the software. Dr. de Groen (domain expert) has used the software to annotate colonoscopy videos.
- Avidense version 2.0 (software that analyzes quality measurements from captured videos generated during colonoscopy): We completed the development of the proof-of-concept analysis software that produces a total of six quality metrics (one extra metric in addition to what we originally proposed) for videos captured from Olympus endoscopes. These metrics are (1) location of maximal intubation; (2) duration of informative frame video segment during withdrawal excluding both biopsy and therapeutic operations; (3) duration of operational episodes; (4) direction of movement and speed estimate of the endoscope during withdrawal; (5) an estimated score of quality of colon mucosa inspection; and (6) number of images with the appendiceal orifice clearly seen. The software has been installed at Mayo Clinic Rochester in September of 2006 and show promising results.

II. Progress on Commercialization

- Increased Visibility. We have demonstrated EndoMetric-Manual at Digestive Disease Week 2006 in May in Los Angeles. Our invention on the automatic quality measurement system also received the 2006 American College of Gastroenterology (ACG) Governors Award for Excellence in Clinical Research. News articles on the award appeared locally and nationally. Oncology Times, IEEE Intelligent Systems, and Gastroenterology & Endoscopy News have articles on our work. Our work has created a significant visibility for the university and the state of Iowa.
- Protection of Key Intellectual Property. Mayo Medical Venture (MMV) has filed patent applications to cover related inventions on behalf of ISU, Mayo, and UTA. The application includes 13 inventions.
- Formation of EndoMetric, LLC, an Iowa-based startup company to commercialize our technology. We have incorporated the company and developed the business plan with the help of the ISU Papajohn Business center. Our business plan was one of the thirty plans selected to compete in the next stage of the 2007 Pappajohn Iowa Business Plan Competition.
- External collaboration. We conducted feedback sessions with endoscopy staffs at UI and IDDC and received verbal agreements to have the two places as test sites.

External Funding:

Please list all of the applications for external funding that you have applied for using the results from this GIVF project, including the status (awarded, denied, pending).

- Automated Reporting System for Colonoscopy. Mayo Clinic Rochester. 01/15/2007 – 12/31/2007. \$50,000. Status: Awarded.

- Enhancement of a Quality Control System for Colonoscopy. Iowa State University Research Foundation. 03/01/07 – 02/28/08. \$25,000. Status: Awarded.
- Evaluation of a Quality Assessment System for Colonoscopy at Iowa Digestive Disease Center (IDDC). Iowa State University Technology Commercialization Acceleration Program. 01/01/2007-06/30/2007. \$10,000. Status: Awarded.
- Evaluation of Quality Assessment Tools for Colonoscopy. Grow Iowa Values Fund. Iowa State University. 07/01/2007-06/30/2008. \$100,397. Status: Pending.
- Computer-Aided Quality Control for Colonoscopy, National Institutes of Health, STTR. 01/01/2008-06/30/2008. \$100,000. Status: Pending.
- III-CXT: Objective Quality Control System for Colonoscopy. National Science Foundation. 06/01/07-05/31/10. \$861,546. Status: Rejected; reason: regarded as an application of techniques developed as part of our current NSF grant.

Intellectual Property

Please list any invention disclosures (ISURF number and one-sentence description) related to the project that existed PRIOR to the start of the project:

ISURF #03305: Intelligent Multimedia Processing and Analysis for Colorectal Tumors (IMPACT)

Please list any invention disclosures (ISURF number and one-sentence description) that were made as a result of the project:

Please indicate if you intend to file future invention disclosures related to this project (one-sentence description):

We have other new algorithms to be filed.

Publications and Presentations

Please list all publications and presentations (published or pending) that included the results of this research:

- P. C. De Groen, W. Tavanapong, J. Oh, J. Wong. Computer-aided Quality Control for Colonoscopy: Automatic Documentation of Cecal Intubation. Digestive Disease Week 2007. ASGE Poster Session Endoscopic Technology Endoscopy: New Image Technology, May 15-24, 2007, Washington DC, USA.

- D. Liu, Y. Cao, W. Tavanapong, J. Wong, J. Oh, and P. C. de Groen. Mining Colonoscopy Videos to Measure Quality of Colonoscopic Procedures. In Proc. of IASTED Int'l Conf. on Biomedical Engineering (BioMed), pages 409-414, Innsbruck, Austria, February 2007. (Oral presentation)

- Y. Cao, D. Liu, W. Tavanapong, J. Wong, J. Oh, and P. C. de Groen. Automatic Classification of Images with Appendiceal Orifice in Colonoscopy Videos. In Proc. of IEEE Engineering in Medicine and Biology Conference, pages 2349-2352, New York City, New York, August 2006. (Oral presentation).

- Danyu Liu, Yu Cao, Ki-Hwan Kim, Sean Stanek, Bancha Dounggratanaex-chai, Kungen Lin, Wallapak Tavanapong, Johnny Wong, JungHwan Oh, and Piet C. de Groen. Artemis: Annotation Software in an Integrated Capturing and Analysis System for Colonoscopy. In preparation for 2nd round review of Computer Methods and Programs in Biomedicine.

Honors and Awards

Please list all honors/awards/special press/etc. related to this project.

Award

- Objective Quality Control for Colonoscopy: Automated Extraction of Endoscopic Metrics from Video Files. 2006 American College of Gastroenterology Governors Award for Excellence in Clinical Research for "The Best Scientific Paper," Oct. 21, 2006.

Articles written by others discussing our work

- New Technology Aims to Improve Colonoscopy by Automatically & Objectively Analyzing Efficacy, *Oncology Times*, Volume 1, Jan 10, pages 24-25.
- Danna Voth. Toward More Intelligent Healthcare, *IEEE Intelligent Systems*, March/April 2007, pages 5-7.
- Best of ACG. *Gastroenterology & Hepatology* Volume 3, issue 1, Jan 2007, pages 41-48.
- Steve Frandzel. New Digital Recording System Measures Colonoscopy Performance Metrics. *Gastroenterology & Endoscopy News*. Volume 58, issue 3, March 2007.

Enhancing the Soy Biorefinery

Principal Investigator: Victor S.-Y. Lin

Co-PIs: George A. Kraus, John G. Verkade

Industry Partners (company names only): Catilin, Inc.

Project Goal: The objectives of this project are to lower the costs of production of biodiesel by refining and engineering a system to deploy new catalyst technologies for converting soy oil or other oil-containing feedstocks to biodiesel, and to refine a process to convert glycerin into 1,3-propanediol (PDO).

Executive Summary:

Please provide a 300-500 word summary of the final results of the project (text only, 2500 character maximum), including the commercialization status.

The goal of this project is to increase the efficiency, expand the product line, and enhance the profitability of biodiesel industry. We are happy to report that we have made some significant progress in taking soy biorefining to the next stage – furthering the value-added utilization of the soybean. Specifically, we have accomplished the following specific goals that we proposed a year ago:

1. Revolutionize the way biodiesel is produced.

We have developed two types of novel solid catalysts that are low cost, heterogeneous, and recyclable, eliminating the “wash and neutralization step” of biodiesel production, which, in turn, significantly lowers the cost of manufacturing biodiesel. We have filed two patent applications on these new catalysts through ISURF. We have received \$3,000,000 from a California-based venture capital firm, Mohr Davidow Ventures, to establish a new start-up company, Catilin, Inc. (www.catilin.com), for the commercialization of these new catalyst technologies.

2. Convert glycerin into value-added chemicals.

We have evaluated the ionic hydrogenation reaction to convert glycerin into 1,3-propanediol. A porous silicon (PSi) material was developed to be a reagent to convert glycerin into 1,3-propanediol. Preliminary results obtained by the Kraus and Lin group show that reduction of glycerol on a gram scale using the PSi produces only 1,3-propanediol in a 55% yield. A patent application was filed through ISURF.

Accomplished Milestones:

Several deliverables generated from this project on the soy biorefinery are:

- Establishment of Catilin, Inc. for the commercialization of our biodiesel catalyst technology.
- New synthetic laboratory at the Innovations Development Facility (IDF) of the Plant Science Institute (Carver Co-Lab) for the scale up synthesis of the biodiesel catalysts
- Collaboration with the Biomass Energy Conversion Center (BECON) for the construction of a biodiesel production pilot plant using our new solid catalyst technology.

Jobs created from this project so far:

- Four full time employees at Catilin for biodiesel catalyst development and commercialization.

External Funding:

Please list all of the applications for external funding that you have applied for using the results from this GIVF project, including the status (awarded, denied, pending).

"Start-up company for commercialization of new solid biodiesel catalysts" \$3,000,000 Mohr Davidow Ventures (awarded)

"Diols from Polyols" \$1,200,000 U.S. DOE/USDA Biomass Research and Development Initiative (denied)

Intellectual Property

Please list any invention disclosures (ISURF number and one-sentence description) related to the project that existed PRIOR to the start of the project:

ISURF #2979 Mesoporous Solid Acid Catalyst for Conversion of Soybean Oil to Biodiesel and Elimination of Fatty Acids

Please list any invention disclosures (ISURF number and one-sentence description) that were made as a result of the project:

ISURF #3196 Selective Reduction of Polyols by Porous Silicon (Conversion of Glycerin to PDO)

ISURF #3280 A new Porous Silica & Calcium Oxide Composite-based Catalyst for Conversion of Vegetable Oils to Biodiesel

ISURF #03503 Cement Kiln Dust-based Transesterification Catalyst for Conversion of Vegetable Oils to Biodiesel

Please indicate if you intend to file future invention disclosures related to this project (one-sentence description):

Publications and Presentations

Please list all publications and presentations (published or pending) that included the results of this research:

1. "Nanoporous Solid Catalysts for Efficient Biodiesel Production" Victor S.-Y. Lin, Thailand-U.S.A. OSTC/NSTDA/MOST/ATPAC Annual Workshop, Biodiesel Symposium: Heterogeneous Catalysis, Columbus, Ohio, August 28-29, 2006 (Invited Talk).
2. "Environmentally Friendly Nanoporous Oxide Catalysts for Biodiesel Synthesis" Victor S.-Y. Lin, Green Chemistry for Fuel Synthesis and Processing Symposium, 232nd ACS National Meeting, San Francisco, CA, September 10-14, 2006 (Invited Talk).
3. "Gatekeeping Effect: Multi-functionalized Mesoporous Silica Nanomaterials for Catalysis and Biotechnological Applications" Victor S.-Y. Lin, Department of Chemistry, University of North Carolina at Chapel Hill, Chapel Hill, NC, September 19, 2006 (Chemistry Seminar).
4. "Gatekeeping Effect: Multi-functionalized Mesoporous Silica Nanomaterials for Catalysis and Biotechnological Applications" Victor S.-Y. Lin, Department of Chemistry, Duke University, Durham, NC, September 20, 2006 (Chemistry Seminar).
5. "Gatekeeping Effect: Multifunctional Mesoporous Silica Materials for Catalysis and Biomedical Applications" Victor S.-Y. Lin, 4th COE 21 International Symposium on Human-Friendly Materials Based on Chemistry, University of Tokyo, Tokyo, Japan, October 10-11, 2006 (Invited Keynote Talk).
6. "Environmentally Friendly Nanoporous Oxide Catalysts for Biodiesel Synthesis" Victor S.-Y. Lin, 9th Annual Chinese-American Frontiers of Science (CAFOS) Symposium, Irvine, California, October 26-28, 2006 (Invited Talk).

6. "Gatekeeping Effect: Multi-functionalized Mesoporous Silica Nanomaterials for Catalysis and Biotechnological Applications" Victor S.-Y. Lin, Department of Chemistry, Michigan State University, East Lansing, Michigan, November 6, 2006 (Chemistry Seminar).
7. "Multifunctional Mesoporous Silica Nanoparticles for Catalysis, Sensor, and Intracellular Controlled Release Applications" Victor S.-Y. Lin, CSR-Catalytic Systems, ExxonMobil Research and Engineering Co., Annandale, New Jersey, December 7, 2006 (Invited Talk).
8. "Gatekeeping Effect: Multifunctional Mesoporous Silica Nanoparticles for Selective Catalysis and Conversion of Bio-based Feedstocks to Biodiesel" Victor S.-Y. Lin, North East Zeolite/Mesoporous Catalytic Materials Symposium (NECZA Symposium), Philadelphia, Pennsylvania, December 8, 2006 (Invited Talk).
9. "Multifunctional mesoporous nanoparticle-based catalysts and controlled release delivery systems for bioenergy applications" Victor S.-Y. Lin, Sustainability of Energy, Food, and Water Symposium, 233rd ACS National Meeting, Chicago, IL, March 25-29, 2007 (Invited Talk).
10. "Functional Mesoporous Metal oxides for Bio-mimetic Cooperative Catalysis and Biodiesel Synthesis" Victor S.-Y. Lin, The Catalysis Club of Philadelphia 2007 Spring Symposium, Holiday Inn Select – Claymont, DE, May 14, 2007 (Invited Speaker).
11. "Multifunctional Mesoporous Silica Nanoparticles for Selective Catalysis and Conversion of Bio-based Feedstocks to Biodiesel and Value-added Chemicals" Victor S.-Y. Lin, the U.S. Department of Energy, Office of Science, Office of Basic Energy Sciences Catalysis Program Contractors' Meeting, Wintergreen, VA, May 23-26, 2007 (Invited Speaker).

Honors and Awards

Please list all honors/awards/special press/etc. related to this project.

Our biodiesel research breakthrough was featured on a public television program (PBS) of "Farmers' Almanac TV." The episode was broadcast on Friday, June 8, on Iowa Public Television (IPTV).

The New York Times published a story about our new biodiesel catalyst technology and the technology transfer from Iowa State University to Catilin, Inc. on July 1, 2007.

Model-based Reasoning for Software: Advanced Algorithmic Techniques and Prototype Implementation

Principal Investigator: Arun Somani

Industry Partners (company names only): EnSoft Corp.

Project Goal: Work with EnSoft to develop the next generation of SimDiff, a tool for differencing control software models.

Executive Summary:

Please provide a 300-500 word summary of the final results of the project (text only, 2500 character maximum), including the commercialization status.

EnSoft, an ISU based software tools company at the ISU Research Park, has developed an innovative tool for users of Simulink software. Simulink is a software modeling tool widely used for developing control systems. EnSoft's tool, SimDiff, analyzes Simulink software models and presents the results in an easy-to-comprehend visual form. An animated demo of the SimDiff tool is available at (<http://www.ensoftcorp.com/>). Initially, SimDiff was developed with partial funding from Rockwell. Initial, objective was to automate auditing of software design models of flight control systems. After its initial development, the scope broadened and eventually SimDiff released by EnSoft in 2005 as a model differencing tool with applications in avionics, automotive, and many other industries that develop complex control software as a critical component of their products.

This project involved research to assist EnSoft in developing the next generation of the SimDiff tool. The work involved developing innovative algorithmic techniques and their prototype implementation. The proposed work was split between work performed at ISU by ISU faculty and students, and some work to be performed at EnSoft.

The SimDiff tool has huge potential for commercialization because of the vast proliferation of software enabled control. Control software is everywhere – in thermostats, watches, cell phones, microwave ovens, cars, tractors, pacemakers, airplanes, spacecrafts, and so on. Control software continues to be harnessed to achieve more functionality and efficiency. Just as imaging technologies allow doctors to look inside the human body to target health treatment, so also the objective of the SimDiff tool and the underlying analysis technology is allow engineers to look inside the highly complex control software so they can target their work and perform more efficiently. Currently, SimDiff is the only tool available in the market to analyze control software models.

Within 18 months of its introduction, close to 200 copies of SimDiff have been licensed by 26 companies in 7 countries including USA, Austria, Germany, England, Italy, Romania, and Japan; and 70 other companies are conducting trials of SimDiff, the vast majority of which are included in the Global Fortune 500. Executives from major car manufacturers in Japan now visit EnSoft to discuss company-wide adoption of SimDiff and the possibility of developing other tools for accelerating designs of new cars.

External Funding:

Please list all of the applications for external funding that you have applied for using the results from this GIVF project, including the status (awarded, denied, pending).

Two proposals were submitted one to NSF and another to the Advanced Technology Program (ATP) within National Institute of Standards and Technology (NIST). The NSF proposal was not funded. The ATP proposal is currently under review.

Intellectual Property

Please list any invention disclosures (ISURF number and one-sentence description) related to the project that existed PRIOR to the start of the project:

Please list any invention disclosures (ISURF number and one-sentence description) that were made as a result of the project:

Please indicate if you intend to file future invention disclosures related to this project (one-sentence description):

While working on this project, we made significant advances in a related area of online software maintenance. We have had preliminary discussions with ISURF and the possibility of filing a patent application is being explored.

Publications and Presentations

Please list all publications and presentations (published or pending) that included the results of this research:

1. Jason Stanek, S.C. Kothari, T.N. Nguyen, Online Software Maintenance for Mission-Critical Systems, 22nd IEEE International Conference on Software Maintenance (ICSM 06), pp. 93-103, Philadelphia, October 2006. (published)
2. Jason Stanek, S.C. Kothari, Software Differencing with a Suffix Tree based Graph Alignment Technique, submitted in May 2007 to the CASCON conference.
3. Jason Stanek, S.C. Kothari, A Graph Alignment Algorithm for Incremental Validation of Simulink Models, submitted in June 2007 to the Automated Software Engineering conference.

Honors and Awards

Please list all honors/awards/special press/etc. related to this project.

Pneumatic Continuously Variable Natural Frequency and Damping Isolator for Active Suspensions

Principal Investigator: Atul Kelkar

Industry Partners (company names only): Vibroacoustic Solutions, Inc.

Project Goal: Advancing the state-of-the-art in vibration isolation technology and accelerating the technology transfer to commercial market for an innovative vibration isolation concept based on active/semi-active purely pneumatic isolation system.

Executive Summary:

Please provide a 300-500 word summary of the final results of the project (text only, 2500 character maximum), including the commercialization status.

The research and development activity from this Grow Iowa Values Funds project has resulted into a joint Intellectual Property disclosure (#03492) between VSI and ISU entitled - "Vibration Isolation System - LCPID (Low Cost Pneumatic Isolation Device)". ISU and VSI were engaged right from beginning with potential end user, namely Link Manufacturing, Sioux City, IA, who are major suppliers of truck cab suspensions to U.S. market. The development of LCPID was focused on addressing the unmet need of the market in the vibration isolation in truck cab/seat suspensions. VSI's intellectual property on Continuously Varying Natural Frequency and Damping (CVNFD) technology combined with the over-the-road field testing conducted by VSI and the performance targets given by Link led to the design of a new "low-cost" purely pneumatic isolation device. This project involved an extensive laboratory testing (simulations and experiments) for several versions of LCPID design including head-to-head comparison with existing truck cab suspension. The orders of magnitude difference in the performance of LCPID lab prototype witnessed by Link rapidly accelerated the project to the field testing. The field tests validated the lab results. Currently, Link is conducting cost analysis and addressing packaging and maintenance issues. The mechanical fatigue issues in LCPID design has led P.I. to further develop the isolation concept which has led to another IP disclosure through ISURF. The follow-on GIVF project if funded will focus on lab testing and commercial prototyping of this new design.

The LCPID technology has numerous other applications including suspension for operator seats in ag and construction equipment, driver seats for trucks and off-road vehicles, wheelchairs for handicaps, and vehicle suspensions. VSI has strong ties with Sear Seating and Mid-American Energy, who are actively looking for suspension solutions for seats and cabs. VSI's suspension division is working with Link for potential commercialization of LCPID in cab, seat, or sleeper bunk applications. VSI is also working with Mid American who is looking for retrofitting a fleet of over 800 trucks with the new suspension designs. Link Mfg. is expecting to introduce their new line of cab suspensions in 2008 with a low cost purely pneumatic revolutionary technology. VSI is planning to introduce LCPID technology in the market either in cab, seat, and sleeper bunk suspensions within next two years.

External Funding:

Please list all of the applications for external funding that you have applied for using the results from this GIVF project, including the status (awarded, denied, pending).

Proposal: "Fundamental Investigation of Active Pneumatic Isolation Concept", Agency: NSF, Amount: \$280,596 (not funded).

Intellectual Property

Please list any invention disclosures (ISURF number and one-sentence description) related to the project that existed PRIOR to the start of the project:

-

Please list any invention disclosures (ISURF number and one-sentence description) that were made as a result of the project:

ISURF# 03492: "Vibration Isolation System - LCPID (Low Cost Pneumatic Isolation Device)"

Please indicate if you intend to file future invention disclosures related to this project (one-sentence description):

The further enhancements to vibration isolation technology emerging from this project are in the process of new Intellectual Property disclosures.

Publications and Presentations

Please list all publications and presentations (published or pending) that included the results of this research:

Presentation to Link Manufacturing - (Sept. 06) "LCPID - Low end version of CVNFD".

(Due to Patent Disclosure on file no public presentations and/or publications were actively pursued.)

Honors and Awards

Please list all honors/awards/special press/etc. related to this project.

None.

(In spite of repeated request from ISU publicity department to showcase LCPID technology through press release due to the Patent Disclosure (#03492) on file no press and or award activity was actively pursued.)

Viral replicon particle discovery research for development of improved vaccines for swine

Principal Investigator: Matthew M Erdman

Co-PIs: Maynard Hogberg

Industry Partners (company names only): Sirrah LLC, AlphaVax Inc

Project Goal: To prove the efficacy of RS and RP vaccines in swine and position Sirrah, LLC as a credible choice for an exclusive field of use license for economically important diseases of swine.

Executive Summary:

Please provide a 300-500 word summary of the final results of the project (text only, 2500 character maximum), including the commercialization status.

This project represents the first time pigs have ever been vaccinated with replicon subunit (RS) or replicon particle (RP) technology. In order to evaluate the effectiveness of these vaccines in pigs we analyzed the antibody response of pigs vaccinated with RP and RS vaccines expressing the hemagglutinin protein of a human strain of influenza virus. The vaccinated pigs had an average antibody titer nearly 1000 times the level needed for protection from disease while the non-vaccinate controls remained antibody negative. These results indicate that RS and RP vaccines can successfully immunize pigs and induce high antibody titers. This proof of concept work supports further development and evaluation of RS and RP vaccines for economically important diseases of pigs including swine influenza virus (SIV), porcine reproductive and respiratory syndrome virus (PRRSV), and porcine circovirus 2 (PCV2).

This project has provided the positive results needed to allow an Iowa startup company to commercialize RS and RP vaccines for swine. Sirrah LLC was founded by Dr. Hank Harris (ISU professor Animal Science) in 2005. The Sirrah management team includes Dr. Harris (Founder and CTO), Dr. Erdman (Director R&D), Stuart Oser (CFO), and Margaret Prahl (Legal Counsel) and has contributed nearly \$205K to the company. Sirrah is operating in the ISU Research Park and has 6 full time employees, including 2 PhDs, and will expand to 10 employees in the coming months.

Based on the results of the project, Sirrah licensed key technology from ISURF and AlphaVax Inc, a human vaccine company in Research Triangle Park, NC. Convinced of the efficacy in swine, AlphaVax exclusively licensed RS and RP technology usage in pigs to Sirrah and has assisted in technology transfer from NC to IA. Sirrah completed exclusive licensure of ISURF #03284 describing the protective antigenic determinants of PRRSV and the basis for Sirrah's first product. Sirrah has started taking orders for RS vaccines and hopes to deliver product in July/August of 2007. These vaccines will be sold under vet-client-patient relationship (CFR107) which allows veterinarians to provide vaccines to animals under their care and prior to USDA licensure. Initial sales are to swine producers located only in Iowa, the top pig producing state in the US. To date Sirrah has sold 32,600 doses of RS vaccine at \$5 per dose totaling \$136,000. Sirrah is concurrently pursuing USDA licensure for RP vaccines to be completed by 2010.

External Funding:

Please list all of the applications for external funding that you have applied for using the results from this GIVF project, including the status (awarded, denied, pending).

GIVF 2007, \$136,000 (pending)

USDA SBIR Phase 1, \$80,000 (funded)

IDED EVA, \$100,000 (funded)

USDA Formula Funds, \$20,000 (funded)

ILHAC, \$25,000 (funded)

NPB, \$133,000 (funded)

Intellectual Property

Please list any invention disclosures (ISURF number and one-sentence description) related to the project that existed PRIOR to the start of the project:

ISURF #03284, Identification of Protective Antigenic Determinants of Porcine Reproductive and Respiratory Syndrome Virus and Uses Thereof.

Please list any invention disclosures (ISURF number and one-sentence description) that were made as a result of the project:

ISURF #03388, Farm Specific Animal Vaccines not Requiring Isolation of the Specific Infections Agent (partial relation to this project)

Please indicate if you intend to file future invention disclosures related to this project (one-sentence description):

Future disclosures are planned that directly describe use of RS and RP technology for other significant diseases of swine including Porcine Circovirus 2, Haemophilus parasuis and Mycoplasma.

Publications and Presentations

Please list all publications and presentations (published or pending) that included the results of this research:

1. Viral replicon particles: a new technology for swine vaccines. Journal submission pending.
2. Immunogenicity of a virus like replicon particle expressing the influenza hemagglutinin protein in pigs. Ames, IA (2007).
3. Vaccines: Present and Future. Proc AASV, Orlando, FL. (2007).
4. Sirrah LLC: Innovative vaccines to improve animal health and productivity. VNI, Des Moines, IA (2006).
5. New vaccine technologies: review and research update. Swine Dis Conf, Ames, IA (2006).
6. Replicon particle co-expression of PRRSV GP5 and M proteins. Proc Int PRRS Symp, Chicago, IL (2006).
7. Immunization of swine with replicon particles: proof of concept. Proc Int PRRS Symp, Chicago, IL (2006).

Honors and Awards

Please list all honors/awards/special press/etc. related to this project.

2nd place Pappajohn business plan competition. Business plan includes the supporting results provided by this GIVF project.

Protein Micropatterning on Microsensors to Quantify Cell Cytotoxicity of Adherent and Non-adherent Cells

PI: Surya Mallapragada

Company: Alan Moy, Cellular Engineering Technologies

Awards received: Big 12 Rising Star award, ISU Mid-Career Achievement in Research Award

External funding applied for (indicate received/denied/pending): NIH STTR grant (submitted April 2007)

Progress report (300 word maximum): We had originally planned to test microstamping appropriate proteins onto the surfaces of the sensors developed by Cellular Engineering Technologies. However, due to delays in fabrication of the sensors and their testing, we had been able to successfully test the microstamping of appropriate proteins only on polymer substrates. In addition, we have also used a protein ink-jet printer to print various proteins directly onto surfaces. Both these techniques give us the ability to selectively immobilize proteins in micron-sized dimensions. Recently, we received indium tin oxide (ITO) coated electrode substrates that we were able to also successfully test these techniques on. In addition, we have successfully developed silanization techniques to attach proteins to the ITO substrates. Using this technique, we have shown that CD34 antibodies can be attached to the ITO electrode substrates covalently, and verified this by atomic force microscopy. In addition, we have cultured CD34+ cells on these substrates and shown good attachment. Our collaborators at Cellular Engineering technologies are now investigating selective cell adhesion using mixtures of two different cell types. We will then pattern different proteins on different parts of the ITO electrodes to enable selective adhesion of different cell types on different regions of the same electrode. We have also submitted a NIH STTR proposal jointly with Cellular Engineering Technologies.

Nanotechnology for Label-Free Detection of Pathogen-Specific Nucleic Acids

PI: Byron Brehm-Stecher

Companies: Bioforce Nanosciences

External funding applied for (indicate received/denied/pending): Pending SBIR for food safety applications of this technology.

Progress report (300 word maximum): Due to unforeseen changes in the intellectual property environment surrounding peptide nucleic acid (PNA) probes, we no longer have access to an assured supply of these key molecules. Therefore, we have modified our original PNA-based approach to include DNA-based probes arrayed to the surface of glass chips using Bioforce Nanoscience's NanoArrayer system. We have evaluated the binding behavior and signal-to-noise ratios for pathogen-specific oligonucleotides functionalized using several different chemistries, including thiol-, biotin- and amino-labeled molecules. In addition to these oligonucleotide attachment chemistries, various means for functionalizing the glass array substrates have also been investigated, including nano-sputtered gold, streptavidin, 3-aminopropyltriethoxysilane (APTES) and Corning GAP II (another amino silane chemistry). It was found that the best attachment chemistry and highest signal-to-noise ratio was given by amino-modified oligonucleotides attached to the array surface using APTES chemistry. A DNA oligonucleotide capture probe targeting the 16S rRNA of *Salmonella* was dual-labeled with an amino modifier at one end and fluorescein at the other end and arrayed to the surface of an APTES-functionalized slide. Arraying quality and extent was monitored via the green fluorescence of fluorescein. Two Cy3-labeled DNA probes, one complementary to the *Salmonella* capture probe and one containing a "nonsense" sequence, were used to assess capture probe functionality at the surface of the chip. After hybridization, the complementary probe bound to the surface of the array, while the "nonsense" probe did not, demonstrating selective, hybridization-mediated capture of the target sequence. A set of primers and probes designed to simultaneously detect multiple pathogens (toxigenic *E. coli*, *Salmonella* spp., *Listeria monocytogenes* and *Staphylococcus aureus*) was adapted from the literature and array-based capture probes specific for these four amplicons designed. The next phase of our work will involve assessing the abilities of these capture probes to selectively bind target amplicons from the multiplex PCR reaction.

Development of Novel Digestion-Resistant Starches from Corn to Combat Human Disease

PI: Martha James, Alan Myers

Publications/presentations based on project:

- 1) Poster presentation: October, 2006, Annual Meeting of the American Association of Cereal Chemists, San Francisco, CA; Claire Moallic, Alan Myers, and Martha James; Development of Novel Slowly Digestible Starches from Maize.
- 2) Oral presentation, May, 2007, ISU Plant Sciences Institute Board of Directors; Diane Birt and Martha James; Healthy Carbohydrates: Slow Release Cornstarch for Preventing Diabetes, Obesity, and Cancer.
- 3) Oral presentation May, 2007, Advanced Food for Health Symposium, Resistant/Slowly Digestible Starch, Ames, IA: Alan Myers, Development of novel, slowly hydrolyzed starches by genetic engineering of maize.

Awards received: None

Invention disclosures:

- 1) Disclosure to ISURF, February, 2007: Short-chain amylopectin starch 1 (SCAPS1)

External funding applied for (indicate received/denied/pending):

Denied: None

Received: USDA special grant to the ISU Center for Designing Foods to Improve Nutrition

PIs: Martha James, Suzanne Hendrich, and Alan Myers

Title: Production and characterization of new slowly digestible starches by genetic modification of specific starch biosynthetic enzyme activities in maize plants

Duration: July 1, 2007 - June 30, 2008

Award: \$30,000

Pending: None

Progress report:

Significant progress was made in this period toward achieving project milestones. Characterization of physical and functional properties of the prototype long-chain amylopectin starch (LCAPS1) was completed. Three types of laboratory analysis confirmed LCAPS1 is digested more slowly (~60% the rate of normal starch) in both the raw and cooked states, which is important because starch typically is cooked when it's incorporated into food. Heritability of the slow digestion trait was confirmed by examination of LCAPS1 produced in plants grown in the winter nursery.

A larger scale wet-milling operation was performed, yielding 2 kg LCAPS1 starch for further testing. Starch-based food products were designed and a pudding-type food was selected for trials based on the nature and number of ingredients, ease of production, and palatability. LCAPS1 and control puddings were produced in the laboratory of ISU Food Scientist Dr. Terri Boylston and human feeding trials were conducted in the laboratory of ISU Food Scientist Suzanne Hendrich. In these trials, 30 male volunteers consumed a pudding made from LCAPS1, control B73 starch, or commercial cornstarch. Blood was drawn every 15 minutes over a two-hour time period. Unfortunately, blood glucose levels were not significantly different following consumption of LCAPS1-based pudding compared with the controls. Consequently, results of this particular *in vivo* test did not agree with results of the *in vitro* tests showing slower LCAPS1 digestibility. Possible problems to be addressed in the next research period include improper design of the food product, insufficient degree of retrogradation of the starch, or insufficient degree of change in the starch chain profile.

Two additional types of LCAPS plants were propagated in the winter nursery and *in vitro* analyses of their starch properties were initiated. These include plants homozygous for the maize *amylose extender* mutation in combination with LCAPS1 (generating LCAPS2) and plants homozygous for the maize *dull1* mutation in combination with LCAPS1 (generating LCAPS3).

Finally, Starch Design, LLC was organized in January 2007 to commercialize the new starches. A business consultant and an attorney were engaged for this start-up phase to assist in the formation of a business plan and licensing of intellectual property.

Retooling Ethanol Industries: Integrating Ultrasonics into Dry Corn Milling to Enhance Ethanol Yield

PI: David Grewell **Co-PIs:** Samir Kumar Khanal and J (Hans) van Leeuwen

Publications/presentations based on project:

Journal Article:

Samir Khanal, Melissa Montalbo, J (Hans) van Leeuwen, Gowrishankar, Srinivasan and David Grewell, Ultrasound Enhanced Glucose Release from Corn in Ethanol Plants, *Biotechnology and Bioengineering (in-press)*.

Conference Papers:

Samir Kumar Khanal, Melissa Montalbo, J (Hans) van Leeuwen, Gowrishankar Srinivasan, David Grewell, Enhanced Glucose Release from Corn in Ethanol Plants by Ultrasonic Pretreatment, International Conference on "21st century challenges to sustainable agri-food systems, Biotechnology, Environment Nutrition, Trade and Policy" 15th- 17th March 2007 in Bangalore, India.

Samir Kumar Khanal, Melissa Montalbo, J (Hans) van Leeuwen, Gowrishankar Srinivasan, David Grewell, Ultrasonic Enhanced Liquifaction and Saccharification of Corn for Bio-Fuels, ASABE Annual International Meeting, 17-20 June 2007, Minneapolis, Minnesota.

Awards received: None

Invention disclosures: None

External funding applied for (indicate received/denied/pending): Typo in Ultrasonics career and Degradation

Status	Title	Sponsor	Amount	PI	Co-PI(s)
Pending	<i>Spectroscopic Analysis during Lignocellulose Degradation by Ultrasonic and Ammonia Treatments</i>	DOE	\$2,130,000	R. S. Houk	Dr. Edward Yeun, Dr. Tae Hyun Kim, Dr. Nicola Pohl, Dr. Klaus Schmidt-Rohr
Pending	<i>Enhanced Enzymatic Digestibility of Cellulosic Biomass for Bio-fuel Production</i>	DOT	\$526,508	D. Grewell	Mike Ladisch, Nathan Moiser, Tae Hyun Kim
Pending	<i>CAREER: Ultrasonic Enhancement of biofuels</i>	NSF	\$517,839	D. Grewell	

Progress report (300 words maximum):

As already noted, the use of ultrasonics enhanced the release of fermentable sugars from corn slurry. In order to gain insight into the fundamentals, experiments were conducted using the best ultrasonic pretreatment conditions identified to date; 20 s at 475 W/35 ml with enzymes and 40 s at 475 W/35 ml without the enzymes. The samples were then saccharified at various time intervals (initially 2 hours) up to 96 hours. As seen in Figure 1, the untreated sample (control) had a maximum glucose yield of 47 g/L and a reaction rate coefficient of 0.0519 1/h. In contrast, when treated for 40 s, the reaction rate coefficient was three-fold higher (0.186 1/h). In addition, the final sugar yield increased from 47 to 57 g/L, corresponding to 21% increase. A similar trend was also seen at the shorter treatment time (20 s with alpha and glucoamylase enzymes), where the yield was again increased but the rate was only slightly improved. There is no conclusive reason for the lower impact on the reaction rate at the lower power setting, but it is believed to be related to the lower energy intensity and cavitation.

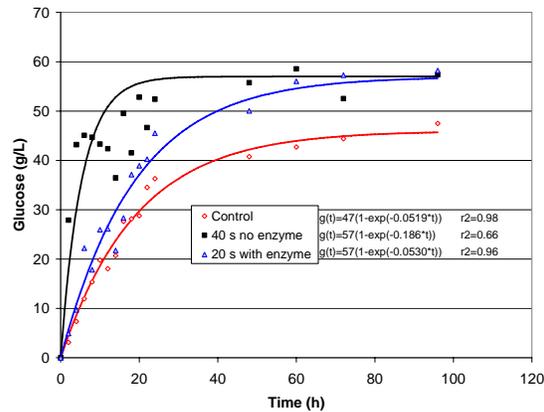


Figure 1 Glucose release as a function of saccharification time with various pretreatments

Selected samples were taken from these experiments prior to saccharification and characterized with SEM. Figure 2(a) shows intact starch crystals for the control group (no pretreatment). In contrast, at the same magnification, it is seen that with 20 s of treatment, there was some evidence of gelatinization where the crystals were grossly deformed. With 40 s of pretreatment (Figure 2(c)), there were no remaining crystal structures visible. It is important to note that the images were taken in an environmental SEM system that allowed imaging of wet samples. At this time, while it appears that the ultrasonic energy promotes gelatinization, additional tests, including DSC studies, are needed to confirm gelatinization. There is the possibility that the structure assumed to be gelatinized starch is dispersed protein.

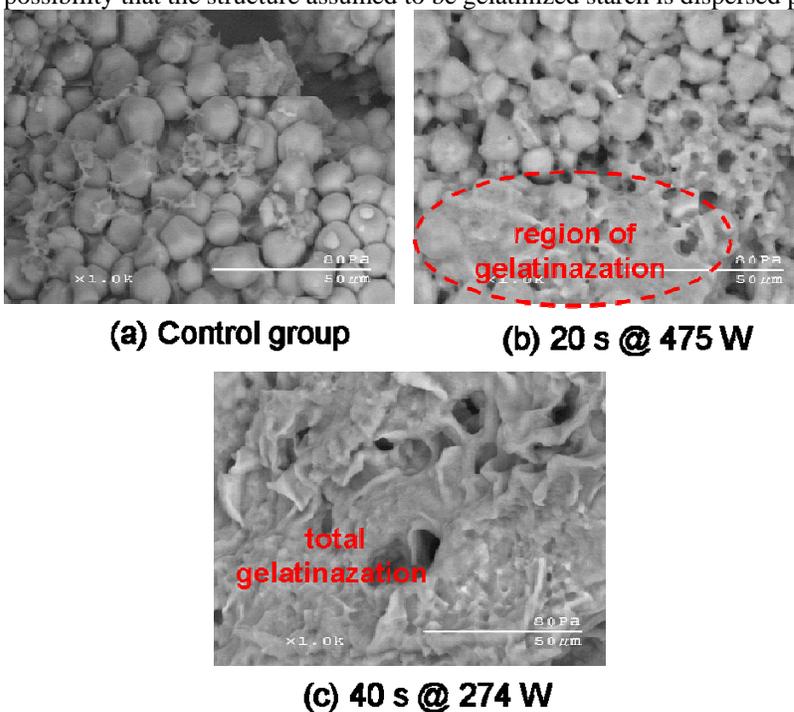


Figure 2 SEM images of starch from ground corn with various pretreatments (x1000)

In summary, the ultrasonic pretreatment appears to promote gelatinization, enhances the rate of starch to glucose conversion and increases the overall yield of sugar from starch. The project is on schedule with beta testing (at ISU) scheduled over the next 3-4 months.

FY07 FUNDED PROJECTS

Update period: January 01, 2007 – June 30, 2007

Principal Investigator	Project Title	Award Amount
Mary Holz-Claus	Corn-Biomass Composite Fuel Pellets: An Industry-University Partnership	\$ 49,380
Samir Khanal	Ultrasonication in Soy Processing for Enhanced Protein and Sugar Yields and Subsequent Nisin Production	\$ 81,977
Vikram Dalal	Collaborative Research on High Performance Stable Amorphous Silicon- Germanium Solar Cells	\$ 63,406
Manjit Misra	Commercialization of a Continuous In-Line Flow Meter	\$ 74,480
Larry Johnson	Commercializing New Fractionated Soy Proteins to Improve Human Health and Food Quality	\$ 167,717
Jay-Lin Jane	Development of Resistance and Low-Caloric Maltodextrins from Cornstarch	\$ 96,273
David Grewell	Ultrasonic Assisted Exfoliation of Bio-Renewable Polymer Nanocomposites with Micro-Cellular Structures	\$ 72,681
Richard Larock	Commercialization of a Corn/Soy Oil-Based Composite Hog Feeder	\$ 96,000
Robert Brown	Gasification Technologies in Support of Biorefineries	\$ 132,247
Jacek Koziel	Purification & Quality Enhancement of Fuel Ethanol to Produce Alcoholic Beverages with Ozonation & Activated Carbon	\$ 81,848
Hand van Leeuwen	Converting Low Value Thin Stillage from Dry Milling Ethanol Plants into High Value Fungal Biomass	\$ 82,070
Pamela White	Designing corn lines with dietary fiber to produce ethnic foods with enhanced health benefits	\$ 67,960
Suzanne Hendrich	Flaxseed lignans for health	\$ 66,960
Ruth MacDonald	Role of complex carbohydrates from soybeans in inflammatory bowel disease	\$ 65,000
Anumantha Kanthasamy	Development of Novel Gene Therapy Approach for Parkinson's disease by Targeting a Cleavage Site of a Proapoptotic Kinase	\$ 50,000
Don Reynolds	Concept paper for Biosafety Level 3 (BSL3) facilities at Vet Med	\$ 38,000

High performance solar cells

PI: Vikram L. Dalal

Publications/presentations based on project:

At ICANS in August 2007

Awards received: Iowa Energy Center

External funding applied for (indicate received/denied/pending):

DOE-BES: Pending; NSF-will be sent in the September and October round; PRF-will be sent in September round; NSF-MRSEC-Preproposal sent to VP Research

Progress report (300 word maximum):

We have continued our collaborative research with Powerfilm, Inc. of Boone, Iowa. The following describe the highlights of our research with them.

1. As we described in an earlier report, we succeeded in improving the current collection efficiency of Powerfilm devices by 14% by using different reflector from what they were using. They have changed the design of their back reflector to implement this improvement into production.
2. We had suggested in our proposal that alternative a-Si with lower bandgap may be a suitable material for use in Powerfilm devices. At that time, we only had preliminary data on film properties, not on devices. Now we have data on devices with the lower bandgap a-Si deposited using a different plasma condition than traditionally used for a-Si devices. The devices work well as PV devices, and thus we have proven our concept of using a lower bandgap a-Si.
3. We had suggested in the proposal that tandem junction cells with the new material, or with (Si,Ge), may be the approach towards higher efficiency than currently possible. Towards this end, we have started research on tandem junction devices. We have successfully deposited standard a-Si tandem junction cells in our reactor, which requires careful design of interfaces between the two cells. We have solved this interface problem, and can make devices with good fill factors and voltages. To make and analyze tandem cells, we had to add several new experimental setups to our laboratory, and we have done that. This preliminary work should be of great help in making the next generation of tandem cells for Powerfilm.

Thus, we are right on target for developing higher performance solar cells that Powerfilm can implement in production a few years down the line. They have already implemented one of our improvements.

Corn-biomass Composite Fuel Pellets: An Industry-University Partnership

PI: Mary Holz-Clause

CoPI(s) Douglas Stokke, Daniel Burden

External funding applied for (indicate received/denied/pending): A USDA Rural Development Pass-Through-Loan-Guarantee application to assist the ongoing expansion of the fuel-stove production facility in Pella, IA, has been submitted by the Iowa Area Development Group.

Progress report (300 word maximum):

A patent application regarding the architecture of the extrusion die has been applied for by LDJ, Landers Machine, and Gary Wobler under the name of Ag Pellet Energy. Additionally, a filing for patent-protection currently is underway on a 100 percent pellet processing system for both fuel and feed applications. Ag Pellet Energy and Landers Machine have introduced this concept to the ethanol industry and are forming a new company, Ag Fuel & Feed, which will be based in Iowa. The “100 percent DDG Pellet and Processing System” is designed to be located at or near ethanol plants. Marketing the technology as a system for sale to ethanol plants was initially proposed by the ISU Extension Value-added Agriculture Project.

Ag Pellet Energy is now focusing on their “100 percent DDG Pellet” to serve both the fuel and feed markets; with the fuel market changing from home and light-industrial application to large-scale power co-generation systems. In March, 2007, a test-burn was conducted at the Wisdom Station power plant, Spencer, Iowa, owned and operated by Corn Belt Power Cooperative, Humboldt, Iowa. The test burn consisted of mixing 10 percent of Ag Pellet Energy’s DDG Pellets with 90 percent coal at the power plant. Although the plant did not achieve full generation output with the fuel blend, a reduction in emissions (percent opacity, which is the measurement of visual emissions coming out of the stack) was obtained.

Cattle feeding tests were conducted under contract with Dr. Dan Loy, Iowa State University, regarding the analysis of the palletized distillers' grains and examining systems for feeding and delivering them to cattle with positive results. Additional contract research with Dr. Loy is looking at market analysis for this product.

LDJ Industries, Pella, has experienced an ash build-up problem with their automatic-feed burner system in their residential light-industrial stove units. Based on testing lab data, this problem was unforeseen and deemed unlikely. However, they currently are considering a redesign of their burner system as well as simply abandoning the DDG-pellet product for the residential light-industrial stove application.

Commercializing New Fractionated Soy Proteins to Improve Human Health and Food Quality

PI: Lawrence A. Johnson

CoPI(s) (name(s) only): Nicolas A. Deak

Publications/presentations based on project:

American Oil Chemists Society annual meeting (Quebec City, Canada):

- Soy Protein Fractionation Using Gas-Supported Screw-Pressed Soybean Meal. (N. Deak and L. Johnson)
- Compositions and Properties of Gas-Supported Screw-Pressed Soybean Meal. (N. Deak, Z. Nazareth, and L. Johnson)
- Effects of Hydrogen Peroxide on Microbial Safety and Functionality of Soy Protein Isolates (N. Deak, N. Winsetel, and L. Johnson)
- Functional Properties of Soy Protein Isolates Made from Gas-Supported Screw-Pressed Soybean Meal. (Z. Nazareth, N. Deak, and L. Johnson)

Awards received:

None

Invention disclosures:

ISURF filed for US patent on April 13, 2007.

External funding applied for (indicate received/denied/pending):

No new applications

Progress report (300 word maximum):

As reported in December, we completed the first two of five objectives of the grant (proof-of-concept and scale-up, and process cost estimation). In the present reporting period, we focused on the third objective, to prepare a catalog of properties for our protein fractions and to compare those properties with those of existing protein products in the marketplace, which will be our competition. We have completed all of the compositional and functional tests and are evaluating and interpreting the results for the fractions produced in the pilot plant. The catalog will be completed by the end of August. We began to develop methods to test sensory (flavor) properties. During the previous reporting period, we provided large amounts of pilot-plant produced samples to SafeSoy Technologies (objective 4) and they have distributed them to TechnoSigma (Japan) and Cargill and they continue their evaluations. In addition, we have met with representatives of Proliant Inc., a well-known Iowa food protein ingredients manufacturer, and discussed our fractionation procedures. Proliant Inc. is interested in learning more once we finish our catalog of properties. SafeSoy Technologies may need an experienced partner in producing protein ingredients and is exploring options to partner with Proliant and Solae. We are identifying potential new applications for these ingredients (objective 5) and developing testing protocols. SafeSoy Technologies continues to evaluate the marketplace and their competitive advantages. We made numerous presentations at international meetings describing our process and products to facilitate market development. We are preparing 5 journal manuscripts for the work conducted on the project. We are largely on or ahead of our proposed schedule and all of our results are confirming commercial potential.

Gasification Technologies in Support of Biorefineries

PI: Robert C. Brown

Co-PIs: Francine Battaglia, Theodore J. Heindel

Publications/presentations based on project: none

Awards received: none

Invention disclosures: none

External funding applied for (indicate received/denied/pending):

GOALI: CFD Modeling and Validation of Biomass Particle Injection in Fluidized Bed Gasifiers, Theodore J. Heindel, Francine Battaglia and John P. Reardon, National Science Foundation. Denied.

Fluidized Bed Modeling and Validation for Gasification and Pyrolysis, Robert C. Brown, Francine Battaglia and Theodore J. Heindel, ConocoPhillips, 04/01/2007-12/31/2007. Received.

Progress report (300 word maximum):

Alternative bed materials are being investigated to find material that behaves similar to fluidized biomass. The goal is to use an alternative material to increase X-ray penetration and resolution to enhance flow visualization in a fluidized bed. An available 9.5 cm diameter fluidized bed was used for this study. Melamine plastic, ground walnut shell, and ground corncob particles were qualitatively compared to glass beads using X-ray computer tomography (CT) imaging and X-ray radiography. The various beds were compared at three different flow rates, and the ratio of superficial gas velocity to minimum fluidization velocity was constant for each bed material. X-ray CT imaging was used to provide a qualitative view of the local time-averaged solids concentration, and clearly showed differences in fluidization between the materials. Computational fluid dynamics (CFD) simulations were used to predict the fluidized bed behavior for glass beads and ground walnut shell, and were compared with the experimental data. Glass beads were used to validate the appropriate grid resolution for the CFD calculations because the material is well characterized in terms of coefficient of restitution and sphericity. Predictions of ground walnut shell were considered because the material fluidizes uniformly. However, walnut shell is not well characterized and factors such as particle sphericity, coefficient of restitution, and calibration of drag coefficients were investigated to determine appropriate parameters to model walnut shell.

Radiographic images from the experiments and corresponding void fraction contours from the simulations qualitatively agreed for the glass bead hydrodynamics, and the mean bed expansion height was in excellent quantitative agreement. The coefficient of restitution study for the walnut shell particles showed that there was no significant difference in the predicted hydrodynamics of the fluidized bed for values between 0.75 and 0.95. The sphericity study showed that as sphericity increases, the bed fluidized more uniformly. It is postulated that irregular shaped particles may agglomerate during fluidization.

A 10.1 cm diameter fluidized bed with capabilities for single particle injection from a side port will become operational in the next 2 months. This new fluidized bed will be used for single particle tracking studies using X-ray stereography, as well as further void fraction studies using CT imaging. Further numerical studies will also be completed and quantitative comparisons will be made between the numerical and experimental data.

Designing corn lines with dietary fiber to produce ethnic foods with enhanced health benefits.

PI: Pam White, Linda Pollak and Sue Duvick

Publications/presentations based on project:

Awards received:

Invention disclosures:

External funding applied for (indicate received/denied/pending):

Hendrich, S., P.J. White, and L.M. Pollak, Screening System for Digestion-Resistant Starch. USDA Special Grants Program. Center for Designing Foods to Improve Nutrition, ISU. \$30,000 funded through 2008.

Hendrich, S., P.J. White, and L.M. Pollak, Screening System for Digestion-Resistant Starch: Effects on Human Fecal Microbes and Short-chain Fatty Acid Production, ISU Plant Sciences Institute. \$50,000 funded through 2009.

White, P.J., J.-L. Jannink, and N. Yao. β -Glucan Structure and Interactions Modulate Physicochemical, Physiological and Sensory Functions of Oats. USDA National Research Initiative, Competitive Grants Program. \$495,229 funded through 2010.

J.-L. Jannink, P.J. White, M.P. Scott, K. Moore, R. Wise, and O. Anderson. Association genetics of β -glucan metabolism to enhance oat and barley germplasm for food and nutritional function. USDA National Research Initiative, Competitive Grants Program. \$500,000 funded through 2011.

Progress report (300 word maximum):

This study aims to develop corn lines with a high concentration of resistant starch (RS) as a dietary fiber that may help control obesity, type II diabetes and gut health, and with quality attributes resembling those of current Latin American corn lines used for Hispanic food products. Resulting corn lines will be used to create healthful food products targeted to the Latin American community. The corn currently being examined is the result of crosses between exotic and high RS Corn Belt lines, aimed to incorporate both the RS and native exotic food quality characteristics. The corn lines are in various stages of growth and development. Some lines were grown in Puerto Rico during Winter 2006-07 and are now being screened to determine RS content. Other lines are being grown during Summer 2007. A procedure for extracting the corn starch and determining the RS percentage has been determined by using the Megazyme Resistant Starch Kit. Analyses of various standards, including commercial high amylose (has high amount of RS) corn starch and normal corn starch, have been completed. These standards also have been analyzed on an instrument called a differential scanning calorimeter, which precisely measures heating characteristics of starches, including a measure of the RS. These standard measurements will be used for later comparison with the exotic crosses. We will be looking at differences between gelatinized (cooked) and ungelatinized starch and the effect of gelatinization on the RS percentage. In the coming months we will complete the initial screening, select the high RS corn lines for further characterization, and finally select lines to use in foods. We also will evaluate attributes present in the corn used in targeted Latin American foods. The last step will be to create a representative Latin American food product that is high in RS.

Development of Resistant and Low-caloric Maltodextrins From Cornstarch

PI: Jay-lin Jane

Publications/presentations based on project: 1

Invention disclosures: 1

External funding applied for (indicate received/denied/pending):

Grow Iowa Values Funding for 2008-09: denied.

Progress report (300 word maximum):

Novel technologies for producing resistant and low-caloric maltodextrins have been developed. Using these technologies, resistant and low-caloric maltodextrin products displaying 50% and greater enzyme resistance have been produced in the laboratory. Products made during the period between January and June, 2007 showed enzyme-resistance ranged from 51% to 97% and the water solubility ranged from 84% to 95%. The weight-average molecular weights of these products ranged from 10^3 to 10^5 Da. These products had white to yellowish color and slight off-flavor. The production process has been successfully scaled-up to kilogram size.

Structures of these and other resistant maltodextrin products have been studied using ^{13}C nuclear magnetic resonance (^{13}C -NMR) spectroscopy. The glycosidic linkages of the laboratory- and commercial-products were characterized on the basis of chemical shifts reported in the literature. Anomeric configurations of the glycosidic linkages in addition to the locations of the linkages, including α -(1 \rightarrow 2), β -(1 \rightarrow 2), α -(1 \rightarrow 3), β -(1 \rightarrow 3), α -(1 \rightarrow 4), and α -(1 \rightarrow 6), have been identified for those products. Alpha and beta configurations can not be differentiated using a traditional methylation method. A 2D NMR combined with enzymatic hydrolysis will be carried out to further understand the structures of the resistant maltodextrins.

One resistant maltodextrin produced in the PI's lab and two developed by Grain Processing Corporation will be tested for their effects on blood glucose response and fermentability in 20 human subjects during July-August 2007. Human subject-study approval has been obtained from ISU, and subjects are being recruited. Final product testing on the resistant maltodextrin developed in the laboratory is being completed by Grain Processing Corp. in early July 2007.

Commercialization of a Corn/Soy Oil-Based Composite Hog Feeder

PI: Distinguished Professor Richard C. Larock

Publications based on project:

Lu, Y.; Larock, R. C. "Fabrication, Morphology and Properties of Soybean Oil-Based Composites Reinforced with Continuous Glass Fibers", *Macromol. Mater. Eng.* 2007, submitted.

Henna, P. H., Larock, R. C. "Rubbery Thermosets Prepared by Ring Opening Metathesis Copolymerization of a Functionalized Castor Oil and Cyclooctene", *Macromol. Mater. Eng.* 2007, submitted.

Presentations based on project:

Larock, R. C. "Development of Novel Plastics from Agricultural Oils," Consortium for Plant Biotechnology Research, Washington D.C., February 13, 2007.

Larock, R. C. "Adventures in Biopolymers, Iodine Cyclizations, and Palladium Annulation and Migration Chemistry," First University of Nevada at Reno Chemistry Graduate Student Association Distinguished Lecture Award, Reno, Nevada, February 16, 2007.

Larock, R. C. "Novel Bioplastics and Composites from Natural Oils," Ag-West Bio and National Research Council Plant Biotechnology Institute Third Plant Bio-Industrial Oils Workshop, Saskatoon, Saskatchewan, Canada, February 27, 2007.

Henna, P. H.; Larock, R. C. "Rubbery Thermosets Prepared by Ring Opening Metathesis Copolymerization of a Functionalized Castor Oil and Cyclooctene", 233th American Chemical Society national meeting, March 25-29, 2007.

Larock, R. C. "Adventures in Biopolymers, Iodine Cyclizations, and Palladium Annulation and Migration Chemistry," Tohoku University, Sendai, Japan, May 23, 2007.

Larock, R. C. "Adventures in Biopolymers, Iodine Cyclizations, and Palladium Annulation and Migration Chemistry," Okayama University, Okayama, Japan, May 29, 2007.

Larock, R. C. "Novel Bioplastics and Composites from Natural Oils", 234th American Chemical Society national meeting, Boston, Massachusetts, August 21, 2007.

Valverde, M., Larock, R. C. "Free Radical Synthesis of Rubbers Made Entirely From Highly Unsaturated Vegetable Oils and Derivatives", 234th American Chemical Society national meeting, Boston, Massachusetts, August 19-23, 2007.

Awards received: N/A

Invention disclosures:

Larock, R. C.; Lu, Y. S. "Bio-based Thermoset Plastic Composite Materials and Methods of Making Same", U.S. patent application 60/839,918 (2006).

Larock, R. C.; Henna, P. H. "Ring Opening Metathesis Polymerization of Vegetable Oils", ISURF Disclosure, (2007).

External funding applied for:

"Development of Bioplastic Composites Using Ag Co-product Fillers", Iowa Biotechnology Consortium-USDA, 9/1/06-8/31/07, funded.

"Biorenewable Composites Reinforced with Under-used Co-products from Ethanol Production", Recycling and Reuse Technology Transfer Center, University of Northern Iowa, 7/1/07-6/30/09, funded.

"Novel Renewable Bio-based Rubber Composites from Plant Oils and Agricultural Co-products", Iowa State University, Plant Sciences Institute, 7/1/07-6/30/09, funded.

"Development and Commercialization of Soy/Corn/Linseed Oil Bioplastics", Consortium for Plant Biotechnology Research, pending.

"Practical Waterborne Agricultural Oil-based Coatings", Consortium for Plant Biotechnology Research, pending.

"Novel Waterborne Coatings from Renewable Resources", Nine Sigma, pending.

"Vegetable Oil Copolymers to Replace Petroleum-Based Matrices in Thermosetting Composites", NIST- ATP, pending.

"Pultruded Window Frames from Agricultural Oils", Grow Iowa Values Fund, denied.

Progress report (300 word maximum): During the last six months, we have made great progress on this project. Our work has focused on optimization of 1) the composition of the vegetable oil-based resin, 2) the ratio of the resin and glass fibers, and 3) the processing conditions, such as cure time, temperature, pressure, etc. So far, we have successfully prepared some very hard composites from several different resins (for example, 50 wt % soybean oil, 25 wt % styrene and 20 wt % divinylbenzene or 25 wt % soybean oil, 25 wt % linseed oil, 28 wt % styrene and 20 wt % divinylbenzene) reinforced with 45-55 wt % glass fibers. The tensile strength and Young's modulus are in the range 100-130 MPa and 2.5-5.0 GPa, respectively. These properties meet the requirements for a viable hog feeder. We have also dramatically shortened the cure time of the composites from 24 hr to 10-20 min, with no reduction in the thermal and mechanical properties. These times are much more suitable for a commercial molding process. In addition, the BF₃ initiator content has been decreased from 5 to 3 wt %, again with no loss in properties. Additional issues, such as molding pressure, shelf life of the product, resin stability at room temperature, and pricing of the resin and composites are being investigated.

Promising new biocomposites from a different tung oil-based resin reinforced with different loadings of DDGS and spent germ (40 to 60 wt %), the by-products from dry and wet mill ethanol

processes, respectively, have also been successfully prepared. These biocomposites exhibit a significant increase in their mechanical properties and thermal stabilities. For example, using spent germ as a filler, the Young's modulus of the resulting composites range from 196-867 MPa and the tensile strengths are in the range 5.0-16.0 MPa. The flexural modulus and flexural strengths are in the range 290-1300 MPa and 5.5-25.0 MPa, respectively. Additional properties are being investigated.

Commercialization of a Continuous In-Line Flow Meter

PI: Manjit K. Misra

Co-PIs: Yuh-Yuan Shyy, Alan Gaul

Invention disclosures: Already patented

Progress report (300 word maximum):

A prototype of the flowmeter was installed and tested in the ISU seed conditioning facility. The test apparatus consists of the prototype, a bucket elevator, a 45-bushel holding bin, calibrated slide gate for flow rate control, two way sample diverter valve, and a PC-based data logger. Seed was recycled from the holding bin to the slide gate, through the flow meter, elevator and then back to the bin during continuous operation. Seed samples were collected and weighed at periodic intervals for comparison with flow meter totalized data. A Visual Basic program was developed for collecting the real-time data from the load cell via the data acquisition board.

Load cell calibration at five different standard weights showed that the readings were repeatable and accurate ($R^2=0.999$ and Error= $\pm 0.13\%$). The suspension system was also redesigned to reduce the stress and residual force at the end of operation, resulting in substantially better raw data quality.

Prior to the above tests, the unit was first calibrated in the laboratory by using a 20-pound hopper and vibration conveyer with an electronic speed control. Both seed corn and soybean were used for the testing, with no obvious internal flow pattern differences and reasonably accurate total weights for each seed type. The unique configuration of flow meter averaged seed weight during measurement, reducing subsequent software based error-reduction.

Seed corn results indicated that seed flows smoothly throughout the system with a maximum capacity of approximately 50 Bu/hr. The data will be compared with real-time samples, and the calibration equation will be generated for predicting the mass flow and total weight.

This unit is ready for demonstration to potential customers for licensing. A meeting has been scheduled with the manufacturing partner to discuss fabrication of a large scale unit (4-inch diameter with 500 Bu/hr capacity) and testing at their facility.

Flaxseed Lignans for Heart Health

PI: Suzanne Hendrich

Progress report (300 word maximum): Tablet formulations have been developed for the 3 supplements (placebo and 2 lignan doses) and tablets are being prepared. Human subjects approval has been obtained and subjects are being recruited according to the approved inclusion/exclusion criteria. The first cohort of 30 subjects is expected to begin the trial in August 2007, with study completion by March 2008.

Converting Low Value Thin Stillage from Dry Milling Ethanol Plants into High Value Fungal Biomass

PI: J.(Hans) van Leeuwen

1. Publications/presentations based on project:

Sindhuja, S., Khanal, S.K., Pometto, A.L. and Van Leeuwen, J. (2007) Sindhuja, S., Khanal, S. K., Pometto, A. L. and Van Leeuwen, J. (2007) Use of microfungi for wastewater treatment and production of high value fungal by-products: A review. *Critical Reviews in Environmental Science and Biotechnology*. (by invitation, in press).

Rasmussen, M., Kambam, Y., Khanal, S. K., Pometto, A. L. and Van Leeuwen, J. (2007) Thin stillage treatment from dry grind ethanol plants with fungi. ASABE Annual International Meeting (AIM), Jun 17-20, Minneapolis, MN.

Awards received: Not yet

Invention disclosures:

ISURF #03387 "Purification of Thin Stillage from Dry Corn Milling with Fungi"

This was covered by a provisional patent until last month and a regular patent application was submitted in June 2007, now patent pending.

External funding applied for (indicate received/denied/pending):

Developing an alternative methodology for stillage treatment and resource recovery based on fungal cultivation, GIVF with Poet assistance – denied

Developing an alternative methodology for stillage treatment and resource recovery based on fungal cultivation, Biomass Research and Development Initiative USDA/DoE \$800,000 with \$200,000 co-funding from Poet - pending

Developing an alternative methodology for Poet's BPX and BFRAC stillage treatment and resource recovery based on fungal cultivation, Poet \$300 to \$400k - pending

Progress report (300 word maximum):

Bioreactors were operated to treat thin stillage, the centrate of the distillation leftovers from a dry-grind ethanol plant, Lincolnway Energy with fungi. The aerated reactors were inoculated with spores of *Rhizopus oligosporus*. Mycelial growth was visible within two days after inoculation. By day 3, the 5-L vessel filled with fungal biomass. The total organic concentration of the thin stillage, characterized as chemical oxygen demand (COD) of 94 g/L, was lowered by 77%, after four days of batch fermentation. Continuous operation could achieve 93% COD removal. Total suspended solids in the samples decreased from 30 to less than 0.1 g/L. Water from thin stillage could be recovered without evaporation, in contrast to current technology, with less loss.

Initial tests were conducted with an airlift reactor, in which the bubbled air itself causes the water and fungi to rise in a draft tube inside the reactor with continuous water recycle in the annulus between the reactor wall and the draft tube. This was done in order to satisfy the oxygen requirements more rapidly. This caused the fungi to grow to large densities within two days and also to grow into pellets, which are denser and readily harvested with mesh screens. It is now possible to operate the reactor with a shorter fungal biomass retention time than the water retention time, facilitating better air transfer and higher production rates.

Ultrasonication in Soy Processing for Enhanced Protein and Sugar Yields and Subsequent Nisin Production

PI: Samir Kumar Khanal

Publications/presentations based on project:

Karki, B, Lamsal, B. P., Grewell, D., Van Leeuwen, J. and Khanal, S. K. Ultrasonication in soy processing for enhanced protein and sugar yields and subsequent bacterial nisin production. ASABE Annual International Meeting (AIM), Jun 17-20, Minneapolis, MN.*

Awards received: N/A

Invention disclosures:

Ultrasonication in soy processing for enhanced protein and sugar yields and subsequent nisin production [US Provisional Patent No. 60/914,502].

External funding applied for (indicate received/denied/pending): N/A

Progress report (300 word maximum):

Several batch sonication experiments were conducted using defatted soybean flakes under controlled temperature conditions. The particle size of sonicated sample decreased by nearly 10 to 15-fold with respect to control at 100% amplitude. The particle size reduction was proportional to power level. The analyses of extract with ultrasound pretreatment under controlled temperature conditions showed improvements in protein yield by 43% and sugar release by 45% with respect to control. These tests showed that temperature did not have significant effect on protein and sugar yields. The effect of sonication on various functional properties of soy protein isolates was also examined. Some preliminary results for ultrasonic treatment at 25% amplitude for 30, 60 and 120 s are presented here. The protein solubility profiles for sonicated and unsonicated (control) soy protein isolates (SPI) were examined. The solubility profiles of all SPIs were typically V-shaped curves with better solubility at either side of protein's isoelectric pH. The samples sonicated for 30 and 120 s at pH 7.0 had protein solubility higher than the controls. The increased solubility of the sonicated SPI over the control was attributed to the production of soluble peptides and increased number of exposed ionizable amino and carboxyl groups during sonication and extraction. The rheological flow behavior was measured using 10% (gram protein/gram water) dispersion. In order to observe the rheological behavior of the sonicated SPI over control, we determined the apparent viscosity profile as a function of shear rate applied. For all samples, increased shear rate was accompanied by decreased viscosity, which was attributed to rearrangement of the molecules in an ordered state and/or to destruction of the original structure. Research is currently underway to examine other important functional properties (e.g. emulsifying properties, protein profile, gel hardness etc.). Evaluation of these functional properties is extremely important to ascertain that ultrasound treatment does not affect the food properties of extracted proteins adversely.

Role of Complex Carbohydrates on Colon

PI: Ruth MacDonald

Progress report (300 word maximum): The goal of the project is to develop a suitable animal model and tissue markers to investigate the role of dietary carbohydrates in colon cell physiology. To address this goal, we have undertaken a series of animal feeding trials using soy-based products. The animal trials have been completed and we are in the process of analyzing tissue samples. In one model, we induced inflammation in the colon that would be similar to that observed in humans with inflammatory bowel disease. The tissues from these animals are being studied for specific markers of tissue damage and changes in cell physiology to determine if the dietary components protected the cells from the insult. We are working on tools to examine cellular changes in the colon of these animals and identifying appropriate biomarkers.

Our long-term goal is to develop a model that will allow us to study a variety of dietary supplements, foods and food ingredients that may be protective of the colon. We anticipate that this model will be suitable for pre-clinical trials of these novel components such that we can work with companies that are developing products for humans.

Development of a Novel Gene Therapy Approach for Parkinson's Disease by Targeting a Cleavage Site of a Proapoptotic Kinase

PI: Anumantha G Kanthasamy

Invention disclosures: In addition to the progress below, we have also formed a small startup company called PK Biosciences. This will foster our efforts to commercialize this and other novel technologies.

Progress report (300 word maximum):

As proposed, we began examining the neuroprotective effect of lentiviruses coding for the PKC δ cleavage motif triplet peptides QDAM₃, DMQD₃ and DMQA₃ in cell culture and animal models of Parkinson's disease. First, we cloned the PKC δ cleavage site sequence in QDAM₃ in LentiTopoV5 vector and then generated lentiviruses coding for the QDAM₃ triplet peptide. LacZ was used as a negative control. To determine the transduction efficiency of the lentiviruses coding for LacZ and QDAM₃, N27 cells were transduced with different titers. Immunocytochemical analysis revealed >80% transduction efficiency. Lentiviruses coding for DMQD₃, and DMQA₃ but not QDAM₃ were found to be protective against MPP⁺-induced proteolytic activation and cell death, confirming their neuroprotective effect in cell culture models of Parkinson's disease.

Next we tested the efficiency of lentiviral vectors in animal models. The lentiviruses coding for LacZ were injected stereotaxically into the substantia nigra (SN). Three or 7 days after injection, the mice were sacrificed, and SN were removed and processed. Immunocytochemical analysis revealed weak expression levels of LacZ. To improve the transfection efficiency in the brain, we tested Adeno Vector AAV2-1CMVeGFP from the Gene Transfer Vector Core (GTVC) facility (University of Iowa). However, adenoviral-mediated delivery into the mouse SN also resulted in low expression. Although these viruses are efficiently transduced in cell culture studies, it appears that the effectiveness of these vectors in animal brain is suboptimal. We also cloned DMQD₃ and DMQA₃ into BamH1 and Mlu1 sites in the PLVPT-tTR-KRAB vector obtained from Addgene.org. This inducible vector has been successfully used for long-term expression of recombinant proteins in the CNS in a tetracycline-regulatable manner without producing toxicity. We have produced the viruses coding for the LacZ, DMQD₃, DMQA₃ and QDAM₃ in HEK 293-FT cells and are currently examining their efficiency in cell culture models before proceeding to animal PD models.

Purification and Quality Enhancement of Fuel Ethanol to Produce Industrial Alcohols with Ozonation and Activated Carbon

PI: Jacek Koziel

Publications/presentations based on project:

- (1) Purification and Quality Enhancement of Fuel Ethanol to Produce Industrial Alcohols with Ozonation and Activated Carbon (2007 ASABE Annual International Meeting, Minneapolis, MN June 2007)
- (2) Purification of Alcohol with Ozonation and Activated Carbon (Institute for Food Safety and Security symposium, Ames, IA April 2007, Air & Waste Management Association Iowa Chapter meeting, Des Moines, IA March 2007, Biorenewable Resources and Technology Research Symposium, Ames, IA April 2007, and Iowa Renewable Fuels Association meeting, Ames, IA March 2007).

Awards received: Grand Prize for Research from the American Association of Environmental Engineers, May 2007

Invention disclosures:

External funding applied for (indicate received/denied/pending):

Progress report (300 word maximum): We are testing a novel approach utilizing ozone gas and granular activated carbon (GAC), to purify fuel grade ethanol to industrial, pharmaceutical and beverage grade. This process replaces traditional distillation or chemical synthesis. Ozone gas is used to react with volatile organic impurities that could be of health concern and/or impart unpleasant tastes and odors.

The following was accomplished since the last report:

- Industrial partners (Dr. Hans van Leeuwen and Rick Wood, MellO3z) have been very active in providing in-kind contributions with their expertise. Rick Wood has started survey of ethanol industry.
- Ozone removed or reduced particular compounds from ethanol samples effectively. However, there was removable limitation by simple ozonation.
- Ozone could produce ozonolysis byproducts. However, with high dosage of ozone, even some ozonolysis products were oxidized again and removed by ozone itself.
- The efficiency of ozone treatment depended on the purity of ethanol sample. It was easy to purify high contaminated ethanol while it was hard with low contaminated ethanol. However, ozone removed some particular compounds which are of health concern very effectively from both ethanol samples.
- Water contain was required to make ozonation effective. Ozone did not work on 200 proof ethanol samples.

The following was continued research from the last report

- The pure feed gas providing setup improved ozone gas quality significantly. However, it was also found that the ozone generator produced impurities in ozone gas during the ozone generating process. To improve ozone gas quality, a new ozone generator was introduced, which is consisted of less ozone reactive materials. Also, our original ozone generator was designed. It is consisted of only non-ozone reactive materials such as stainless steel, glass, and PTFE. It is expected that purer ozone gas provides more precise data of the purification efficiency.

Ultrasonic Assisted Exfoliation of Bio-Renewable Polymer Nanocomposites with Micro-Cellular Structures

PI: David Grewell

CoPIs: Michael Kessler, Howard Van Auken

Publications/presentations based on project:

Journal Article:

Maria Vlad, Gowrishankar Srinivasan, David Grewell, *Improvement of the mechanical properties of soy protein isolate based plastics through formulation and processing*, International Polymer Processing Journal, In Press.

Conference Papers:

Maria Vlad, Gowrishankar Srinivasan, David Grewell, Improvement of the mechanical properties of soy protein isolate based plastics, *Proceedings of the 65th Annual Technical Conference for the Society of Plastics Engineers* (2007), Society of Plastics Engineers, Brookfield, CT

Gowrishankar Srinivasan, Michael Kessler, David Grewell, Casting of Zein Protein Polymers, *Proceedings of the 65th Annual Technical Conference for the Society of Plastics Engineers* (2007), Society of Plastics Engineers, Brookfield, CT

David Grewell, Maria Vlad, Gowrishankar Srinivasan, Improvement Of The Mechanical Properties Of Soy Protein Isolate Based Polymers, The Polymer Processing Society 23rd annual meeting, Salvador, Brazil, May 27-31, 2007

Magazine articles:

David Grewell, Mike Kessler, Maria Vlad, Gowrishankar Srinivasan, *Enhancing Plastic from Naturally Occurring Proteins*, Submitted November 2006, SPG Media Group PLC, Brunel House, London W2 1LA, UK

David Grewell, Michael Kessler, and William Graves, *Protein-based Plastics and Applications*, Bioplastics Magazine, Issue 02/2007 (June).

Awards received: None

Invention disclosures: None

External funding applied for (indicate received/denied/pending):

Status	Title	Sponsor	Amount	PI	Co-PI(s)
Funded	<i>Degradable pots for plants</i>	Horticultural Research Institute	\$14,000	William Grave	David Grewell
Pending	<i>Protein plastics and application development</i>	USDA-CSREES	\$416,875	D. Grewell	Mike Kessler, Deland Myers

Progress report (300 words maximum):

For Zein-based plastic, it was observed that moisture absorption increased with immersion time. However, an unexpected phenomenon of fluctuation in water uptake was observed with both concentrations of nanoclay formulations. It was observed that, initially, water absorption was negative and generally remained relatively low and in some cases remained negative (Figure 1). A possible hypothesis for this observation was that the exfoliated nanoclay distribution acted as a diffusion barrier preventing water from diffusing into the samples.

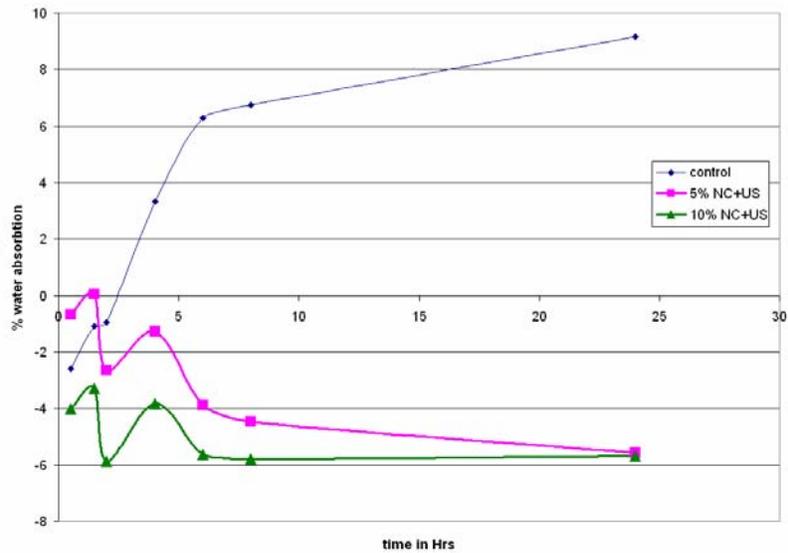


Figure 3 Water absorption by zein sheets (control and nanoclay sheets).

It is further theorized that un-mixed glycerin and ethanol near the surface of the sample dissolved in the water, accounting for the loss in mass. This was based on the observation that the distilled water used for steeping, when evaporated resulted in Langmuir monolayer diffraction patterns on the vessel wall which were believed to be produced by the residuals.

A sprayable formulation of zein protein was developed during this period of the project. Based on discussions with Vermeer Corporation (Co-sponsor of this project), the properties of the final film would likely meet the requirements for hay bale warping. The films are water resistant, non-toxic to cattle and will supplement cattle feed as a source of protein. In August, bales will be coated at Vermeer's test site for beta testing. The tests will involve coating full size bales and visual inspection on a routine basis for film and hay degradation. This task of the project is on schedule.

Several formulations for the replacement of petrochemical plastics of Creative Composites' (Co-sponsor of this project) "lub-sticks" have been developed and characterized. The formulations are injection moldable and relatively strong. However, the compositions are unstable during processing, often resulting in phase separation of the various ingredients. In addition, the tensile strength (1.6 MPa) of the various formulations does not meet the product specifications (~7 MPa). Thus, additional formulations are being developed and characterized. This has prevented initiating prototype testing, resulting in the project being approximately 2 month behind schedule.

Modular BL3 Facility

PI: Don Reynolds

External funding applied for (indicate amount & received/denied/pending):

Kellogg Foundation - \$1 million / Denied

Progress report (300 word maximum):

To date, \$10,785 has been spent on the planning of the BL3 modular laboratory. This planning has resulted in various sites being considered for the BL3 at the VMRI and at the Vet Med complex. It has been revealed that VMRI is at capacity with regard to utilities and adding more facilities is not possible without major expansion of infrastructure which is beyond the scope of this project. The sites located near the Vet Med complex are being considered and planning is under way in preparation for an upcoming CPC meeting.

Commercializing New Fractionated Soy Proteins to Improve Human Health and Food Quality

PI: Lawrence A. Johnson

CoPI(s) (name(s) only): Nicolas A. Deak

Publications/presentations based on project:

American Oil Chemists Society annual meeting (Quebec City, Canada):

- Soy Protein Fractionation Using Gas-Supported Screw-Pressed Soybean Meal. (N. Deak and L. Johnson)
- Compositions and Properties of Gas-Supported Screw-Pressed Soybean Meal. (N. Deak, Z. Nazareth, and L. Johnson)
- Effects of Hydrogen Peroxide on Microbial Safety and Functionality of Soy Protein Isolates (N. Deak, N. Winsetel, and L. Johnson)
- Functional Properties of Soy Protein Isolates Made from Gas-Supported Screw-Pressed Soybean Meal. (Z. Nazareth, N. Deak, and L. Johnson)

Invention disclosures:

ISURF filed for US patent on April 13, 2007.

Progress report (300 word maximum):

As reported in December, we completed the first two of five objectives of the grant (proof-of-concept and scale-up, and process cost estimation). In the present reporting period, we focused on the third objective, to prepare a catalog of properties for our protein fractions and to compare those properties with those of existing protein products in the marketplace, which will be our competition. We have completed all of the compositional and functional tests and are evaluating and interpreting the results for the fractions produced in the pilot plant. The catalog will be completed by the end of August. We began to develop methods to test sensory (flavor) properties. During the previous reporting period, we provided large amounts of pilot-plant produced samples to SafeSoy Technologies (objective 4) and they have distributed them to TechnoSigma (Japan) and Cargill and they continue their evaluations. In addition, we have met with representatives of Proliant Inc., a well-known Iowa food protein ingredients manufacturer, and discussed our fractionation procedures. Proliant Inc. is interested in learning more once we finish our catalog of properties. SafeSoy Technologies may need an experienced partner in producing protein ingredients and is exploring options to partner with Proliant and Solae. We are identifying potential new applications for these ingredients (objective 5) and developing testing protocols. SafeSoy Technologies continues to evaluate the marketplace and their competitive advantages. We made numerous presentations at international meetings describing our process and products to facilitate market development. We are preparing 5 journal manuscripts for the work conducted on the project. We are largely on or ahead of our proposed schedule and all of our results are confirming commercial potential.

IOWA STATE UNIVERSITY BATTELLE UPDATE

AUGUST 2007

ENDOWED CHAIRS PROGRAM

Of the \$2 M allocated for matching funds (\$1public:\$2private) for endowed chairs, \$500,000 in matching funds will be added to \$1M in private gift funds received in April 2007 to create the W. Eugene Lloyd Chair in Toxicology in the College of Veterinary Medicine. The College has not appointed a faculty member to this chair and no expenditures have been made from the endowment.

Numerous proposals for endowed chairs related to the Biorenewables area are pending and matching dollars have been discussed with the donors on a first to be funded will be the first qualified for matching basis.

Commitments on these proposals are expected during the fall to utilize the remaining matching funds.

ANIMAL SYSTEMS PLATFORM

Platform Chair: Max Rothschild

PROJECT GRANTS

Title: Large Animal Genomics Models for Animal and Human Health:
Pig model for bone health

PI(s): Max F. Rothschild

Publications/presentations based on project:

An abstract was submitted to International symposium on Animal Genomics for Animal Health that will be held in Paris during 23-25 October 2007.

SNP DISCOVERY IN GENES AFFECTING LEG HEALTH TRAIT IN PIGS

O.SUNEEL KUMAR, B. FAN, B. MOTE AND M.F. ROTHSCHILD

Department of Animal Science and Center for Integrated Animal Genomics, Iowa State University, Ames, IA 50011, USA

Sow longevity and mortality is often influenced by moderate to severe lameness issues. It has been reported that up to 44 percent of sows have locomotive problems. To date few genome scans or association studies have been conducted to look at genes controlling lameness and other gait issues. In addition to health problems associated with leg and bone disorders the pig has been suggested to be a possible good model for human bone disorders including osteoporosis which is defined as a systemic skeletal disease characterized by loss of bone strength and deterioration of bone micro architecture that often results in fractures. It is a common disease in aged men and women due to chronic corticosteroid use and menopause respectively. Although many bone studies have focused on calcium, phosphorus homeostasis is also a key factor for bone strength. Hence, the present study has

initially focused on over 53 porcine genes affecting phosphorus metabolism and other candidate genes for SNP discovery. A total of over 188 SNPs have been identified to date. These SNPs are being investigated for their associations with gait and locomotion problems in a set of nearly 2067 commercial pigs scored for various leg and locomotion traits.

Awards received: None

Invention disclosures: None

External funding applied for (indicate received/denied/pending): none

Progress Report (300 word maximum):

This grant supports research using the pig as an animal model to predict bone disorders in both pigs and humans. Initially during this period, the work was concentrated on the examining genes which are likely to influence phosphorus metabolism. We performed single nucleotide polymorphism (SNP) discovery in heavy bone and light bone pig lines. In this regard, 28 genes were selected and analyzed for SNPs. This initial phase of work was included in an abstract that was written for International Symposium on Animal Genomics for Animal Health. Later, the selection of genes was expanded in broader categories to include candidate genes affecting the leg structure and back disorders including conformation of a normal vertebral column (dip back). Therefore, to this point a total of 50 genes have been selected and 84 SNPs were found. These SNPs are present in 22 out of the initial 50 genes, and another 9 SNPs in 6 genes are being confirmed using standard validation methods. We have a data set of nearly 2000 commercial pigs with various leg and conformation scores which will be genotyped for our genetic markers. We are in the process of developing specialized formats essential for high throughput genotyping. Among these SNPs, a SNP present in DARC gene has shown a significant difference between heavily boned and light boned pigs. This gene is known to be associated with bone growth in humans and further work to verify its role in the pig is underway. Presently additional genes are being selected based on the signaling pathways affecting the bone development, growth and metabolism.

Platform leader Rothschild has met with new groups concerning expanded commercial activities in Iowa. One appears to be considering a start up company

Title: **Animal Systems: Large Animal Genomic Models for Animal and Human Health - Part V**

PI(s): Michael Spurlock

Publications/presentations based on project:

Awards received:

Invention disclosures:

External funding applied for (indicate received/denied/pending):

Progress Report (300 word maximum):

This study evaluated the effects of high-carbohydrate versus high-fat diets on inflammation located in adipose and skeletal muscle of pigs which are genetically predisposed to obesity. Fourteen Ossabaw swine were housed in an Iowa State University facility and our experienced animal caretaker oversaw the daily feeding and care of the pigs. The swine were divided into two experimental groups, one of which was allowed to eat a commercial swine diet ad libitum. The second group was restricted to a quantity of commercial feed that maintained their body weight but did not promote weight gain. The swine were fed in this manner for twelve weeks, and then their diets were switched to high-fat or high-carbohydrate diets for an additional thirty six weeks. The swine were sacrificed and blood and tissue samples were taken to measure markers of inflammation, including sera insulin, non-esterified fatty acids, total cholesterol, glucose, and triglycerides. RNA was prepared from adipose tissue depots for microarray analysis.

Title: Large Animal Genomic Models for Human and Animal Health

Principal Investigator: Heather Greenlee

Publications/presentations based on project: NA

Awards received: NA

Invention disclosures: NA

External funding applied for (indicate received/denied/pending): NA

Progress Report:

We have not yet expended funds that are targeted for transmissible spongiform encephalopathy project. Transmissible spongiform encephalopathies are diseases that have an extended incubation time. Animals that are intended for this study are at the National Animal Disease Center (a collaborator on this project) have been inoculated, and will be at an appropriate post-innoculation time to begin studies within the next 6 months.

Currently we are working to hire a graduate student (who already has a D.V.M.) to begin these studies.

In addition, we now have in place a confidentiality agreement (CA) with iOptics, LLC, a small company in Iowa City, IA. Our discussions since the CA was signed have been working toward the production of two custom cameras that will be used for these studies. We intend to have the cameras in our possession to begin these studies late this year.

INFRASTRUCTURE GRANT

Title: Large Animal Genomics Models for Animal and Human Health:
Pig model for bone health – Infrastructure.

PI(s): Max F. Rothschild

Publications/presentations based on project:

Same as project update above

Awards received: None

Invention disclosures: None

External funding applied for (indicate received/denied/pending): none

Progress Report (300 word maximum): - infrastructure

The infrastructure grant supported the purchase of a piece of equipment to support the discovery of genes using the pig as an animal model to predict bone disorders in both pigs and humans. The equipment was purchased using the entire funds and has been successfully used for the gene discovery and for the single nucleotide polymorphism (SNP) discovery in heavy bone and light bone pig lines. In this regard, 28 genes were selected and analyzed for SNPs. Later, the selection of genes was expanded in broader categories to include candidate genes affecting the leg structure and back disorders including conformation of a normal vertebral column (dip back). Therefore, to this point a total of 50 genes have been selected and 84 SNPs were found. The equipment is now in Rothschild's laboratory in Kildee hall.

Principal Investigator: Matthew Ellinwood

Publications/presentations based on project:

Awards received:

Invention disclosures:

External funding applied for (indicate received/denied/pending):

Progress Report (300 word maximum):

Infrastructure funds have allowed for the requests of bids through FP&M for the improvement of facilities in the Kildee Hall Animal Facilities to allow expanded housing of canine and feline models. Bids were finalized during this past period, and work was begun and has been substantially finished. Specifically a biosecurity airlock foyer has been constructed, and unsealed concrete floors in a large animal room and the new foyer have been epoxy seeled and walls repainted. Caging for dog housing in the facility has been ordered, and the manufacturer has scheduled delivery for the last week of July, 2007. Animals are predicted to move into the facility in August of 2007.

BIOECONOMY PLATFORM

Platform Chair: Robert Brown

PROJECT GRANT

Title: Task 1: Thermochemical Products: Syngas production and clean-up

PI(s): Robert C. Brown

Publications/presentations based on project: None at present time

Awards received: None at present time

Invention disclosures: None at present time

External funding applied for (indicate received/denied/pending): None at present time

Progress Report

Task Objective:

The objective of this task is to produce syngas with properties that maximize growth and production of chemo-autotrophic microorganisms.

Summary of Progress to Date:

Raw syngas from the gasification of biomass feedstocks contains many condensable liquid compounds that may inhibit growth and even kill in cases the *Rhodospirillum Rubrum* cells being used to convert carbon monoxide to hydrogen. To remove these and other compounds from the raw syngas, a new gas cleanup system has been designed and is being installed. The new gas clean-up system includes a pair of mini-cyclones, a hot gas filter, a tar condenser, an impinger train, a vacuum pump, a pair of toxin filters, and an oxygen filter. The mini-cyclones used in this system are designed to remove 95 to 99% of the char in the raw syngas. The remaining char is removed using either a ceramic thimble or a sinter metal hot gas filter. Tars and condensable compounds with a condensation temperature greater than 105°C are removed in the tar condenser. The impinger train is used to remove water and any remaining aerosols that may not have been removed in the tar condenser. Two activated carbon filters serve as a final toxin filter to ensure that all the toxic compounds were removed in the previous steps. An oxygen filter and indicator provide the last step of protection to ensure that the syngas is free of oxygen. This gas clean-up system is capable of providing 10 L/min of cleaned syngas to the bioreactor containing *Rhodospirillum Rubrum*.

In preparation for evaluating the merits of perspective of feed stock such as: corn stover, switchgrass, corn fiber, and distillers' dried grains work is also being completed to upgrade the gasifier. This work includes the addition of a steam generator and such that the gasifier may be operated in the following modes: i) air blown, ii) air/steam blown, and iii) oxygen/steam blown. The biomass feeder is also being redesigned to reduce the difficulty involved with handling ground switch grass and corn stover. Finally, the gasifier instrumentation is being replaced and repaired to facilitate detailed mass balances.

PROJECT GRANT

Title: Task 2. Thermochemical Products: Enhancing gas-liquid mass transfer

PI(s): Ted Heindel (ME) and Brent Shanks (CBE)

Publications/presentations based on project: None at this time

Awards received: None at this time

Invention disclosures: ISURF # 03452 – CO-Liquid Mass Transfer Enhancement for Syngas Fermentation

External funding applied for (indicate received/denied/pending): None at this time

Progress Report (300 word maximum):

In the past six months, a microreactor was designed, constructed, and used for CO-water mass transfer measurements in which various nanoparticles were added to nanopure water. Preliminary results suggest that the CO-water volumetric mass transfer coefficients ($k_{L,a}$) are repeatable in the microreactor under different conditions (e.g. gas flow rate and stirring speed). Mesoporous silica (MCM41) nanoparticles with spherical morphology and a diameter of ~200 nm have been synthesized. The BET surface area of the MCM41 nanoparticles is ~1400 m²/g. Different organic groups such as methyl, phenyl, mercaptopropyl, carboxylpropyl, nitrilpropyl and aminpropyl were used to functionalize the MCM41 nanoparticles. The $k_{L,a}$ enhancement when the nanoparticles are added to the system has been measured in the microreactor. Results indicate (1) large silica particles (Degussa, Sipernat 160) with a diameter of 7.0 μm showed negligible $k_{L,a}$ enhancement, while MCM41 nanoparticles enhanced the CO-water volumetric mass transfer coefficient by ~55%; (2) the $k_{L,a}$ enhancement as a result of MCM41 nanoparticle addition was influenced by the kind and loading amount of the functionalized groups, as well as the nanoparticle concentration in the solution. At a microreactor stirring speed of 300 rpm, CO gas flow rate of 180 ml/min, and nanoparticle concentration of 0.4 wt%, MCM41 functionalized by 5% mole ratio mercaptopropyl showed the strongest enhancement of ~100% (i.e., $k_{L,a}$ was increased by a factor of 2), which is hypothesized to be due to interactions between CO and the functionalized groups. During the next six months, we will further enhance the mass transfer rate by focusing on the role of the surface hydroxyl group. Other nanoparticle oxides (alumina and/or silica-alumina) will also be synthesized with different hydroxyl groups and tested for mass transfer enhancement capabilities.

PROJECT GRANT

Title: Task 3: Syngas fermentation pilot facility

PI(s): Alan A. DiSpirito

Publications/presentations based on project:

Do YS, Smeenk J, Broer KM, Kisting CJ, Brown RC, Heindel TJ, Bobik TA, DiSpirito AA. 2007. Growth of *Rhodospirillum rubrum* on synthesis gas: Conversion of CO to H₂ and poly-β-hydroxyalkanoate. *Biotechnology and Bioengineering* 97(2):279-286.

Awards received:

Invention disclosures:

External funding applied for (indicate received/denied/pending):

Progress Report (300 word maximum):

Based on previously demonstrated syngas fermentation for the production of polyhydroxy alkanate (PHA) biopolymers, a continuous syngas fermentation facility was designed and is under construction in Black Engineering. When complete, the new facility will have five benchtop scale (10 L) fermenters in parallel to optimize syngas utilization. First fermenter will test biofiltration system to remove potentially toxic organic compounds from syngas. Syngas from this biofiltration system will be used to feed the remaining four bioreactors used to culture *Rhodospirillum rubrum*. A new particulate removal and gas flow control systems are being installed which will allow continuous monitoring of gas mass flow and pressure balance between gasifier and bioreactors. A clean laboratory for wet chemistry is has been designed to provide on site chemical analysis for syngas fermentation. The major components for this system have been ordered or received. Once all the components have been received, construction of the continuous fermentation system will begin.

In addition to the construction of a new fermentation facility, optimization of fermentation conditions have focused on CO utilization and cost reduction. Resent studies have determined the minimal concentration of CO required for optimal growth rates in stirred take reactors. Under these growth conditions approximately 80% of the CO was utilized. When complete the new fermentation facility was designed to allow for the introduction of a biofiltration system to scrub the remaining 20% of the CO, maximizing CO utilization and detoxifying the exit gas. To reduce fermentation costs, the *R. rubrum* have been cultured on syngas in stirred tank reactors that were not autoclaved. The anaerobic conditions, minimal media and high concentrations of carbon monoxide in these fermentations are very selective and microbial contamination has yet to be a problem.

PROJECT GRANT

Title: Task 4: Thermochemical Products: Ethanol production by combined fermentation and chemical synthesis

PI(s): Thomas Bobik

Publications/presentations based on project: (none)

Awards received: (none)

Invention disclosures: IPDR entitled "Ethanol production by combined fermentation and chemical synthesis." was filed with ISURF.

External funding applied for (indicate received/denied/pending):

Extrenal funding received for an expanded project from Conoco-Phillips and Archer Daniels Midland.

Progress Report (300 word maximum): *Escherichia coli* was successfully engineered to co-produce acetaldehyde and hydrogen from glucose. Acetaldehyde dehydrogenase (*ald*) was cloned via PCR amplification and its DNA sequences were verified. This clone was transformed into *Escherichia coli* and its expression verified by enzymatic assay. Genetically modified *E. coli* expressing ALD was grown on glucose and shown to produce 28% more acetaldehyde than the control. An *E. coli adh, ldh* double mutant was constructed by P1 transduction using kanamycin resistance insertions from the KO collection. The *ald* gene was expressed in this double mutant. This increased growth by 20%, enhanced anaerobic production acetaldehyde 195% and elevated hydrogen production 590%. Preliminary HPLC analysis were conducted to identify undesirable by-products that accumulate during co-production of acetaldehyde and hydrogen. This work is ongoing.

PROJECT GRANT

Title: Task 5 - Thermochemical Products: Establish functional genomics of *Rhodospirillum rubrum* metabolism

PI(s): Basil J. Nikolau

Publications/presentations based on project:

Genetic, Biochemical and Physiological Studies Acetyl-CoA Metabolism via Condensation. Huanan Jin and Basil J. Nikolau. Poster presentation, to be made at the American Society of Plant Biology, Chicago, IL, July, 07

Awards received: None to date

Invention disclosures: None

External funding applied for (indicate received/denied/pending):

- Title of project: Annotation of novel enzymatic functions in methanogens
Funding Agency: DOE-GTL
Date submitted: March, 2007
Status: Pending
 - Title of project: Development of metabolomics and metabolic flux technology for production of bioplastics and bioenergy
Funding Agency: Consortium of Plant Biotechnology Research
Date submitted: June, 2007
Status: Pending
-

Progress Report (300 word maximum):

This task has focused on understanding and manipulating the metabolism of *Rhodospirillum rubrum* so as to make this organism more suitable as a platform for the fermentation-based conversion of syn-gas to biorenewable chemicals and biofuels. These manipulations are taking advantage of the genomics platform that is afforded by the fact that this organism's genome is completely sequenced. We have targeted the metabolism of two classes of biorenewable chemicals and fuels: 1) polyhydroxyalkanoate (PHA) as a bioplastic; and 2) monoacyl esters as a biofuel. PHAs are natural products of *R. rubrum* metabolism, which are produced when this organism is grown under a low-carbon nutrition status. Monoacyl esters are not produced by *R. rubrum*, however, such molecules are produced by many other organisms, including plants, algae, some bacteria, and insects and other animals.

For PHA metabolism, we have identified and are characterizing six *R. rubrum* genes that appear to be involved in PHA production. These are labeled:

1. *phaA*, Rru_A0274;
2. *phaB*, Rru_A0273;
3. *phaC*, Rru_A0275;
4. *phaC*-like1, Rru_A2413;
5. *phaC*-like2, Rru_A1816; and
6. *phaJ*, Rru_A2964

Each of these genes has been expressed in *E. coli*, and with the resulting recombinant proteins we have generated antibodies against each gene product. These antibodies will be very useful reagents for authenticating the results of the subsequent genetic manipulations of *R. rubrum*.

Using each of these isolated genes, we have constructed *R. rubrum* strains, which individually over-express each targeted gene. Expression of these transgenes is inducible with carbon monoxide, which makes these strains particularly suitable for use in syn gas fermentation processes. This CO-inducability has been achieved by using the promoter from the *cooFSCTJ*-locus. Finally for each of the targeted genes, we have generated two transgenic strains, which differ from each other relative to the genetic locus at which the transgene has been inserted in the genome; one is at the *cooFSCTJ* locus, the other is at the target-gene locus. These strains are currently being assessed relative to their growth characteristics, and the amount and type of PHAs that are produced.

For monoacyl ester metabolism, we have identified and isolated three monoacyl ester synthase genes from *Arabidopsis*. As with the PHA metabolism genes, these monoacyl ester synthase genes will be manipulated and will be targeted for expression in our *R. rubrum* strains using the *cooFSCTJ* promoter.

PROJECT GRANT

Title: Task 6: Thermochemical Products: Developing stable bio-oils from fast pyrolysis

PI(s): Robert C. Brown & Justinus A. Satrio

Publications/presentations based on project: None at present time

Awards received: None at present time

Invention disclosures: None at present time

External funding applied for (indicate received/denied/pending): None at present time

Progress Report

Task Objectives:

The objectives of this task are to develop capabilities of generating bio-oils under well characterized operating conditions and of characterizing physically and chemically the oil properties that influencing bio-oil stability.

Summary of Progress to Date:

Bio-oil is composed of a complex mixture of oxygenated organic compounds that sometimes yield a product with poor stability over time. The unpredictable stability of the bio-oils is the major impediment in the commercialization of bio-oil utilization. To gain more understanding on the bio-oil generation and parameters that affect the bio-oil stability, in this task a new fast pyrolyzer will be designed and constructed. The new fast pyrolyzer will replace the eight-year old fast pyrolyzer which is difficult to control and requiring excessive maintenance to be operable. The new system will allow carefully controlled experiments to be performed in order to evaluate factors in bio-oil production that affect the stability of bio-oil product. The system will consist of the following sub-systems: a feedstock feeding system, a fast pyrolysis reactor, gas product cleaning and char collection system, a bio-oil product collection system, and a non-condensable gas recycle system. At present time, the fast pyrolysis reactor and the biomass feeding system have been designed and will be constructed. The designs of the remaining sub-systems are currently underway. An air separator system, which uses a PSA technology, is currently being ordered to be used for providing nitrogen for the fast pyrolysis system. It has a capacity of producing 400 L/min (STP) of nitrogen at 99% purity and 120psig. At present, on the average, six large cylinders of liquid nitrogen (at a cost of approximately \$2000) were required to operate the fast pyrolyzer every month. The new air separator will eliminate the need of purchasing these costly liquid nitrogen cylinders.

In addition to the new fast pyrolyzer design and construction, in this task an analytical and instrumentation laboratory facility which is dedicated for analyzing and characterizing biomass and biomass utilization products, such as bio-oils, has been set up. The facility occupies three laboratory spaces in Metals Development building, which is located on Iowa State University main campus and owned and operated by US DOE's Ames Laboratory. Approval for the operation of the laboratory facility has been sought and obtained from the Ames Laboratory's Environmental Health & Safety office. At present the following instrumentations have been installed and operated in the laboratory facility:

1. GC/MS (manufacturer: Varian): to analyze chemical composition bio-oil and its derivative liquid products.
2. Viscometer (Brookfield): to determine liquid viscosity
3. Bomb calorimeter (Parr): to determine materials' heating values
4. Karl-Fischer titrator (KEM): to determine water content of bio-oils and its derivatives
5. Centrifuge (Fischer Scientific): to separate multiphase materials
6. Vacuum distillation apparatus (Kontes): to separate distillable liquids

7. Thermogravimetric analyzer/ TGA (Perkin Elmer): to be used for analyzing reactions/processes involving weight loss from solid/liquid materials.
8. Various glass apparatuses for wet chemical analysis
9. Furnaces of various types: muffle, vacuum, and tubular
10. Analytical balances

The following instruments are currently being ordered:

1. Mercury Porosimeter (Micromeritics): to analyze pore size distribution of chars and other solid materials.
2. MicroGC (Varian): to analyze composition of gas product

PROJECT GRANT

Title: Task7: Oleochemicals: Identifying physical and chemical attributes for improved biobased lubricants and fuels

PI(s): L. Johnson, E. Hammond and T. Wang

Publications/presentations based on project: None

Awards received: None

Invention disclosures: None

External funding applied for (indicate received/denied/pending): None

Progress Report (300 word maximum):

The ISU project team met twice in Spring 2007 with the collaborators (led by Dr. Lou Honary) at the University of Northern Iowa's National Ag-based Lubricants laboratory. Scheduling problems of some of the participants delayed this for several months. We have signed confidentiality agreements agreeable to both institutions so that unimpeded information sharing is possible. UNI has disclosed the problem on which they would like for us to help them and to form the core collaboration. This involves technical concerns about the burning of biodiesel, which causes coke build up and wear in fuel injectors. The technical approach to solving this problem will require more negotiations between the partners. We have identified a graduate student to work on the project and are awaiting issue of a suitable visa prior to putting this student on the payroll. UNI has supplied us with 5 gallons of high-oleic soybean oil and we are determining the best method of purifying oleic acid from this oil to make low-melting oleates that UNI can tests for various uses.

INFRASTRUCTURE GRANT

Principal Investigator: David Oliver, College of Liberal Arts & Sciences (Victor Lin, Nikki Pohl, Emily Smith)

Publications/presentations based on project:

Awards received:

Invention disclosures:

External funding applied for (indicate received/denied/pending):

Victor Lin

Agency: U.S. DOE (DE-FC26-06NT43023)

Duration: 10/2006-09/2009

Amount: \$3,440,615

Title: "Mesoporous Silica-Supported Rhodium Nanocatalysts for Selective Production of Ethanol from Syngas"

Status: Funded.

Agency: U.S. DOE (AL-03-380-011)

Duration: 09/2007-09/2010

Amount: \$1,800,000

Title: Renewal of an Ames Lab Chemical and Biological Sciences project entitled "Selective and efficient catalysis in 3D controlled environment"

Status: Funded

Agency: NSF

Duration: 09/2007-06/2010

Amount: \$1,400,000

Title: (Collaboration with University of Iowa) "NIRT-Self-Assembly of Nanostructures in Silica Based Porous Materials for Biocatalysis and Drug Delivery"

Status: Pending

Agency: U.S. DOE

Duration 10/2007-9/2010

Amount: \$3,000,000

Title: Nanostructured Organic-Inorganic Hybrid Long Range Charge Separation System for Photocatalysis and Photovoltaic Application

Status: Pending

Nikki Pohl – all pending

National Institutes of Health Small Business Technology Transfer Grant (STTR) Phase II
Expected direct costs for PI's lab over 2 years: \$124,568.

Submitted a request with Fluorous Technologies, Inc. (Pittsburgh, PA) for \$1,065,049 total.

“Fluorous Solution-Based Synthesis of Peptides and Oligosaccharides”

7/1/07-6/30/08

Healthy Livestock Initiative Competitive Grant (Iowa State University)

\$20,000 direct costs. Expected direct cost for PI's lab over 1 year: \$5,179.

“The role of surface glycosylation in modulating macrophage and dendritic cell responses to intracellular pathogens”

10/1/07-9/30/10

Department of Energy

\$2,130,000 total costs. Expected direct cost for PI's lab over 3 years: \$80,000.

"Spectroscopic Analysis during Lignocellulose Degradation by Ultrasonic and Ammonia Treatments"

12/1/07-11/30/10

Department of Energy

\$973,084 total costs. Expected direct cost for PI's lab over 3 years: \$50,000.

"High Throughput Methods for Determining Cell Wall Composition of Plants"

Submitted May 2007

National Institutes of Health DP2 (2007 NIH Director's New Innovator Award Program)

Expected direct costs for PI's lab over 5 years: \$980,000.

“Development of Automated Oligosaccharide Synthesis”

Submitted June 2007

Howard Hughes Medical Institute

2008 Investigator Award (Amounts not specified at this stage)

“Chemical Glycobiology and Immunity”

Emily Smith

Funded

“Development of Raman and Fluorescence Imaging Methods for the Study of Cellular Processes and Biological Material in Diverse Applications”, Society of Analytical Chemist of Pittsburg Starter Grant, funded April 2007-April 2008. **\$20,000**

“High-Throughput Raman Imaging Studies of Plant Tissue Arrays for Measuring Cell Wall Content and Degradation”, Plant Sciences Institute and Ames Laboratory (DOE), funded July 2007-July 2009. **\$60,000**

Pending

“Raman Spectroscopy and Raman Imaging Studies of Bifunctionalized Mesoporous Silica Nanosphere Catalytic Systems”, Petroleum Research Fund Type G, submitted March 2007. **\$50,000**

“Unraveling and Inhibiting Advanced Glycation End Products (AGE) *in vivo*” NIH: Director’s New Innovator Award Program (DP2), submitted May 2007. **\$1,500,000**

Denied

“Raman Imaging for the Detection of Latent Fingerprints on Traditionally Hard to Visualize Surfaces and the Measurement of Endogenous Compounds in Fingerprint Residue” Midwest Forensics Resource Center Competitive Research Program Fall 2007, submitted November 2006.

“High-Throughput Raman Imaging Studies of Plant Tissue and Cell Culture Arrays for Measuring Lignin and Cellulose Content” DOE: New Analytical and Imaging Technologies for Multiplexed Screening for Plant Phenotypes, co-submitted with Professor Kan Wang (Department of Agronomy) and Kenneth Moore (Department of Agronomy), pre-proposal submitted January 2007.

Equipment Purchased/Renovations Made:

Progress Report (300 word maximum):

These funds were used to partially renovate research laboratories and to provide essential research equipment for Victor Lin, Nikki Pohl, and Emily Smith in the Department of Chemistry. This support has been essential for these PIs submitting over \$13,450,000 in grant proposals. Of these requests the PIs have already been awarded over \$5,320,000 in support and the rest of the proposals are still pending. They have already generated over \$10 in external funding for each \$1 invested.

Principal Investigator: Chris Williams (Ted Okishii, College of Engineering)

Publications/presentations based on project:

1. McCready, Nicolaus; Williams, R. Christopher, "The Utilization of Agriculturally Derived Lignin as an Anti-Oxidant in Asphalt," Mid-Continent Transportation Research Forum, Ames, Iowa, August 16-17, 2007. (Conference Paper)
2. Williams, R.C.; McCready, N., "Synergistic Opportunities for Bio-Energy Co-Products in Asphalt Materials", Federal Highway Administration, Turner-Fairbank Highway Research Center, August 7, 2007. (Invited Presentation)
3. Zemen, Nicholas, "ISU Evaluates Lignin as Additive in Asphalt Manufacturing," Biomass Magazine, June 2007. http://www.biomassmagazine.com/article.jsp?article_id=1172 (Trade Magazine Article)
4. McCready, Nicolaus; Williams, R. Christopher, "Utilization of Agriculturally Derived Lignin as an Anti-Oxidant in Asphalt," 44th Petersen Asphalt Research Conference, Laramie, Wyoming, July 16-18, 2007. (Conference Paper)
5. McCready, Nicolaus; Williams, R. Christopher, "Utilization of Agriculturally Derived Lignin as an Antioxidant in Asphalt Binder," *The World Congress on Industrial Biotechnology and Bioprocessing*, Orlando, Florida, March 21-24, 2007. (Presentation)

Awards received:

Invention disclosures:

Have established a confidentiality agreement with Grain Processing Corporation of Muscatine, Iowa. A similar agreement is anticipated to be worked out with PureVision Technologies of Fort Lupton, Colorado.

External funding applied for (indicate received/denied/pending):

1. Received
Investigators: Williams and Justinus A. Satrio
Project: Evaluation of Lignin/Phenol Derived from Bio-oil Production for Use as an Antioxidant in Asphalt
Sponsor: Iowa Energy Center
Duration: July 1, 2007 to June 30, 2008
Funding: \$78,802
 2. Pending
Investigators: Williams and Satrio
Project: Utilization of Bio-Energy Co-Products in Asphalt Materials
Sponsor: Federal Highway Administration
Duration: October, 2007 to September, 2010
Funding: \$1,152,280 (\$576,140 of cost share)
-

Equipment Purchased/Renovations Made:

Upgraded a servo-pneumatic testing machine for testing materials associated with bio-energy research.

Progress Report (300 word maximum):

The research team anticipates using the upgraded test equipment in research work that will be under contract within the next 6-12 months. A substantial amount of exposure is being received by the research team associated with utilizing bio-energy co-products in asphalt materials and this equipment will further expand their research capabilities and thus research exposure.

Principal Investigator: Terry Meyer (Ted Okishii, College of Engineering)

Publications/presentations based on project: None

Awards received: None

Invention disclosures: None

External funding applied for (indicate received/denied/pending):

- Conoco-Phillips – Bio-Fuel Sprays and Combustion \$125000 (received)
 - Air Force Research Laboratory – Spray Diagnostics Development \$90000 (received)
 - Air Force Office of Scientific Research – Spray Diagnostics Development \$30000 (received)
 - Air Force Research Laboratory - MHz-Rate Flow Imaging \$125000 (received)
 - NASA - MHz-Rate Temperature Imaging \$106000 (received)
 - Air Force Research Laboratory – Alternative Fuels for Hypersonics Propulsion (denied)
-

Equipment Purchased/Renovations Made: 4-Pulse High-Power Nd:YAG Laser System

Progress Report (300 word maximum):

The funding was used to help purchase a laser system capable of performing planar imaging of sprays and combusting flows. This system is capable of producing 4 pulses of high-energy laser light at a rate of 10 Hz in the infrared, visible, and ultraviolet regions of the spectrum. It is also capable of pumping a dye laser and optical parametric oscillator for generating tunable radiation over a wide range of laser wavelengths for targeting specific molecules of interest. The dye laser and optical parametric oscillator are leveraged under different programs listed above. The laser system is unique at Iowa State and will be used for visualizing bio-oil sprays and for characterizing the bio-oil combustion process in a project currently funded by Conoco-Phillips. It may also be used for studying combustion of gasified biofuels and for studies of biofuel processing (gasification, etc). Two students are currently being funded to work on this project. At this stage the laser is under construction and will be delivered within 8 to 10 weeks. The timing is such that the laser and optical system should be ready for testing in 4 months and will be utilized in the bio-oil sprays and combustion project beginning late 2007 or early 2008. This research is leading to significant interest from other Iowa companies such as Goodrich Turbine Fuel Technologies, who is in the beginning stages of developing fuel nozzles for biorenewable fuels. Finally the equipment will be used to for other spray and combustion related projects targeted at improving efficiency and reducing pollutant emissions of power generation and propulsion systems.

Principal Investigator: Robert Brown

Equipment Purchased and Renovations Made:

Task 3

- Plumbing and flow controller system
- Spectrophotometer
- Fermentation system
- Clean room renovation
- Electrical work

Task 6

- Fabrication of Pyrolyzer
- Mercury porosimeter
- MicroGC
- Nitrogen Separator

Task 8

- Not ordered yet
-

Progress Report (300 word maximum):

The equipment was purchased in support of Tasks 1-8 which are being funded via the Battelle Project funds. Updates regarding the use of this equipment can be found above in the Task reports.

Principal Investigator: Joe Colletti, College of Agriculture

Publications/presentations based on project:

Awards received:

Invention disclosures:

External funding applied for (indicate received/denied/pending):

Equipment Purchased/Renovations Made:

Progress Report (300 word maximum):

Funding was approved for a DNA extractor, a Tetrad PCR, and a mass array liquid handler for use by two new faculty hires, Dr. Beavis and Dr. Lubberstedt who will be joining ISU in August 2007 and September 2007, respectively. Equipment specifications will be determined and orders placed after their arrival.

BIOSECURITY

Platform Chair: Manjit Misra

PROJECT GRANT

Title: Protecting Iowa's Economic Growth Through Animal Traceability and Discovery of Natural Antimicrobials. BioScience Alliance of Iowa. Project 1: Discovery of Natural Antimicrobials

PI(s): **A. L. Pometto, Ph.D.**

Publications/presentations based on project:

Awards received: None

Invention disclosures: None

External funding applied for (indicate received/denied/pending):

- Mendonca, A, and A.L. Pometto III. 2007. Antimicrobial Efficacy of a Novel Antimicrobial Skin Cleanser against Foodborne Enteric Pathogens on a Model Skin Surface. IPRT (\$12,057) and Northern Filtration Media (\$12,065) (Funded)
 - Mendonca, A., A.A. DiSpirito, and A.L. Pometto III. 2007-2010. Methanobactin: Natural Antimicrobial for Foodborne Pathogens. USDA/NRI (Food Safety and Quality, 32.0) \$399,018 (Not funded).
-

Progress Report (300 word maximum):

The Antimicrobial and Prebiotic Discovery Initiative activities continue to develop. Following are the accomplishments:

- Dr. William Colonna was hired as the Assistant Scientist II and started working for the Initiative March 3, 2007.
- Completed the purchase and installation of the analytical and preparative HPLC
- Worked with Mark Reuber in getting the organic solvent spray drier operating
- Established a standard operating procedure (SOP) for determining the minimal inhibitory concentration (MIC) for antimicrobials against a five-*Listeria* cocktail
- The Commercial Partners Advisory Council (Kemin and AgResources) met every two months to provide guidance and to discuss relevant topics including methanobactin research and grape seed extract research performed to date.
- Completed a material transfer agreement with Kemin for methanobactin evaluation.

Also in progress:

- Working with a graduate student on the SOP for evaluating nisin produced from soybean whey
- Working with our collaborating commercial partner Dr. Ifendu Nnanna to build our culture collection of probiotics for prebiotic discovery
- Working with Dr. Paul Domoto in horticulture to evaluate the benefit of the natural phytochemical stimulator and antifungal spray supplied by Dr. Shetty (Amherst BioInnovation [ABI]) for organic grape production
- Working with Dr. George Kraus in the NIH Botanical Center to order a preparative HPLC C18-column for our use

We will continue to characterize methanobactin properties, and scale up protocols for methanobactin production to 100-Liter sequential batch fermentations. Finally several of ABI natural extracts and wine pomace extract antimicrobial properties from ABI extract treated grapes will be evaluated.

Title: Protecting Iowa's Economic Growth Through Animal Traceability and Discovery of Natural Antimicrobials. Project 2: **Iowa Livestock Traceability Project (ILTP)**

PI(s): Dr. H. Scott Hurd, Assoc. Prof., VDPAM, ISU

Publications/presentations based on project: Presentation to the Board of Directors meeting of Biosciences Alliances of Iowa, January 31, 2007

Awards received: None

Invention disclosures: None

External funding applied for (indicate received/denied/pending): None

Progress Report (300 word maximum):

- Identified key barriers to electronic certification, such as reluctance of some auction markets to learn a new system and veterinarians who are not familiar with the latest computer technology.
- Began revising software to on-line from stand alone with system with updates.
- A Team of economists, transportation/logistics experts, and business specialists are working to commercialize business applications and conducting additional data collection.
- Risk mitigation strategies for protecting data integrity and confidentiality were implemented by moving data servers to secure underground location
- Methods to incorporate the ILTP into the Iowa Department of Agriculture and the U.S. National Animal Identification Systems (NAIS) plans are being discussed with IA Department of Agriculture.
- Trained 30 people from multiple veterinary clinics on Internet use and use of the ILTP software.
- Approved for 3 continuing education credits. This training was conducted in partnership with the *University of Northern Iowa's* Educational Technology and Training Institute.

INFRASTRUCTURE GRANT

Title: Protecting Iowa's Economic Growth Through Animal Traceability and Discovery of Natural Antimicrobials. BioScience Alliance of Iowa.

PI(s): A. L. Pometto, Ph.D.

Publications/presentations based on project:

Awards received: None

Invention disclosures: None

External funding applied for (indicate received/denied/pending): None

Progress Report (300 word maximum):

The floor plan for renovation of room 3379 Food Sciences Building to the Biosafety Level II research lab was drawn up and was approved by the Department of Food Science and Human Nutrition. The Iowa State University Facility Planning and Management Office is overseeing and performing the renovation. Mechanical drawing for electrical, air, gas, and water are being prepared. Completion is expected to be during the fall 2007 semester. Additional electrical outlets for the analytical and preparative HPLC, and for the organic solvent spray drier operation in room 1384 Food Sciences Building have been added. Most all the equipment has been purchased. Equipment yet to be purchased, if funding is available after renovation are:

- One preparative HPLC column capable of holding 1-2 gram samples to complement the C18 preparative column purchased by the NIH Botanical Center.
- One anaerobic chamber for culturing *Campylobacter* (food pathogen) and *Brevibacterium* (Probiotic)
- One Growth Curve Bioscreen unit to be located in the anaerobic chamber

The placement of the Bioscreen unit within the anaerobic chamber is being requested by some faculty on campus to provide them with some high throughput equipment for their antimicrobial and prebiotic research with *Campylobacter* and *Brevibacterium*. This would be a unique addition to the Discovery Initiative. Projected completion date is during the Fall 2007 semester.

Principal Investigator: Joe Colletti, College of Agriculture

Publications/presentations based on project:

Awards received:

Invention disclosures:

External funding applied for (indicate received/denied/pending):

Equipment Purchased/Renovations Made:

Progress Report (300 word maximum):

Funding was approved for gene expression equipment, lab renovation, and a field building. To date, none of the Battelle funding has been utilized for the first two items. The field building has been erected with FY07 expenditures totaling \$63,830. Work on fixtures and other improvements necessary to make the building operational are expected to be completed fall 2007 at an additional cost of approximately \$30,000.

ADVANCED FOOD & FEED

Platform Chair: Ruth MacDonald

PROJECT GRANT

Title: Nutrition and Wellness Research Center

PI(s): Ruth S. MacDonald

Publications/presentations based on project: 2 meetings at the NWRC

Awards received: 2 industry sponsored research projects funded, 2 in planning phase

Invention disclosures: none

External funding applied for (indicate received/denied/pending):

Received: \$ 48,000

Pending: TBD

Progress Report (300 word maximum):

A two day symposium, the first annual Advanced Foods for Health Symposium, was held on May 8-9 at the Gateway conference center in Ames. The conference addressed the topic of Resistant Starches in food and health and was attended by over 100 people. The symposium speakers were experts in the field from the industry and academia. The response to the symposium has been very good. Funding was obtained through donations from industry sponsors, both College of Agriculture and Life Sciences, and Human Sciences, ISU centers and from registration fees – overall the costs were covered for the symposium.

The renovations to the Nutrition and Wellness Research Center building were completed in April 2007. A research project, funded by an industry partner, was begun in June 2007 with 2 other projects in preparation. The projects are to evaluate the efficacy of food products in human health and involve human subject participation.

A search for a Director was undertaken with 2 potential candidates interviewed. A search firm, Baker-Parker was retained to assist with identifying suitable candidates in the nationwide search. Negotiations are underway by the Dean of the College of Human Sciences to recruit one of these candidates.

Presentation of the facility was made to the ISU Research Board of Directors, and Senator Harkin's aides, as well as ISU-related groups.

The center has been staffed by a full time secretary, Stephanie Kasper, who has coordinated the facility and organized the many details of opening a new building. Her salary is provided by the Dean of Human Sciences. A part-time technical support staff member has been involved with setting up the labs and kitchens, Jeanne Stewart. Her salary is currently provided by the Center for Designing Foods to Improve Nutrition. We have therefore been able to retain the funding in the Battelle project for the new Director to use according to his/her needs. We have used limited Battelle funds to pay a student worker 20 hours per week to perform settling in details at the building.

INFORMATION TECHNOLOGY

Platform Chair: Jim Oliver

PROJECT GRANT

External funding applied for (indicate received/denied/pending):

“EVO: Virtual Atom Probe Tomography Network,” Krishna Rajan, PI, with ISU Co-PI’s James Oliver, Vasant Honavar and Srinivas Aluru, and David Seidman (Northwestern University). National Science Foundation, Engineering Virtual Organization program, \$200,000, pending.

“Large-Scale Optimization Using Evolutionary Algorithms on GPU Architectures,” Eliot Winer, PI with Co-PI James Oliver, National Science Foundation, \$416,974, pending.

“NIRT: Virtual Reality Environment for Designing Bio-nano Mechanical Components and Machines,” James Oliver, PI, with Co-PI’s Amy Andreotti (ISU) Kazem Kazerounian and Horea Ilies, (University of Connecticut), and Constantin Mavroidis (Northeastern University), National Science Foundation, \$1,400,000, pending.

IIS: Exploratory Investigation of Modular Ontologies. *National Science Foundation*, Vasant Honavar (PI), Giora Slutzki and Doina Caragea (Co-PIs), (2006-2008). \$100,000. Received.

Interactive and Verifiable Composition of Web Services To Satisfy End User Goals. Vasant Honavar (Co-PI), Samik Basu (PI), Robyn Lutz (co-PI). *National Science Foundation* (2007-2010). \$350,000. Received.

Collaborative Research: Learning Classifiers from Autonomous, Semantically Heterogeneous Distributed Data Sources, National Science Foundation, Vasant Honavar (PI) \$449, 000. 2007-2010. Recommended for funding (award pending)

Progress Report:

In January CII principals played a major role in securing ISU’s invitation to join the Great Lakes Consortium for Petascale Computation led by the National Center for Supercomputing Applications (NCSA) at the University of Illinois, Urbana-Champaign. This regional consortium is a finalist in the National Science Foundation’s “High Performance Computing System Acquisition: Towards a Petascale Computing Environment for Science and Engineering” program, a \$500M project to build the ultimate high-performance computer. James Oliver contributed to the proposal and is listed as “Senior Personnel”.

April 25-27 the CyberInnovation Institute (CII) hosted the “Emerging Technologies Conference” ETC 2007. This three-day event featured research progress and economic development activities of all CII’s research centers and attracted more than 450 attendees.

In May the Center for Information Assurance hosted the second annual “Cyber Defense Competition” for regional high school students at the CyberInnovation Institute’s new facilities at 2321 North Loop Drive in Ames. This two-day event was attended by more than 50 students and attracted substantial media attention.

INFRASTRUCTURE GRANT

PI(s): David Oliver, College of Liberal Arts & Sciences (Theresa Windus)

Theresa Windus

Department of Energy (DOE) – ASCR, The Computational Chemistry End Station (ChemES), \$1.98M, pending

Department of Energy (DOE) – Basic Energy Sciences, Nanostructured Organic-Inorganic Hybrid Long-Range Charge Separation System for Photocatalysis and Photovoltaic Applications, \$3M, pending

Department of Energy (DOE) – Basic Energy Sciences, Ames Laboratory Chemical Physics Program, \$3M, pending

National Science Foundation, Simulation of Electronic Non-Adiabatic Dynamics for Reactions with Organic Macromolecules, Liquids and Surfaces, \$2.5M, pending

Equipment Purchased/Renovations Made:

Progress Report (300 word maximum):

These funds were used to purchase a high performance computer system for the Windus group. Windus works on computer modeling of chemical reactions at the quantum level. She has purchased and assembled the system and is writing software to computer model chemical reactions on the system. So far she has applied for nearly \$10,500,000 in external funding. These grants were made possible because of having the high speed computer system funded by this program.

Principal Investigator: Z.J. Wang

Publications/presentations based on project:

1. Z.J. Wang, "High-order methods on unstructured grids for Navier-Stokes equations," Invited review article to appear in *Journal Progresses in Aerospace Sciences*.
2. R. Kannan and Z.J. Wang, "Overset Adaptive Cartesian/Prism Grid Method for Moving Boundary Flow Problems," in press, *AIAA Journal*.
3. J.P. Bons, S.T. McClain, Z.J. Wang, X. Chi and T. I.-P. Shih, "A Comparison of Approximate Vs. Exact Geometrical Representations of Roughness for CFD Calculations Of Cp and St," in press, *Journal of Turbomachinery*.
4. Z.J. Wang, Y. Liu, G. May and A. Jameson, "Spectral Difference Method for Unstructured Grids II: Extension to the Euler Equations," *Journal of Scientific Computing*, in press.
5. Y. Sun, Z.J. Wang and Y. Liu, "High-Order Multidomain Spectral Difference Method for the Navier-Stokes Equations on Unstructured Hexahedral Grids", *Communications in Computational Physics*, Vol. 2, No. 2, pp. 310-333 (2007).
6. Y. Liu, M. Vinokur, and Z.J. Wang, "Discontinuous Spectral Difference Method for Conservation Laws on Unstructured Grids," *Journal of Computational Physics* Vol. 216, pp. 780-801 (2006).
7. Y. Sun, Z.J. Wang and Y. Liu, "Spectral (Finite) Volume Method for Conservation Laws on Unstructured Grids VI: Extension to Viscous Flow," *Journal of Computational Physics* Vol. 215, No. 1, pp. 41-58 (2006).
8. Y. Liu, M. Vinokur, and Z.J. Wang, " Spectral (Finite) Volume Method for Conservation Laws on Unstructured Grids V: Extension to Three-Dimensional Systems," *Journal of Computational Physics* Vol. 212, pp. 454-472 (2006).

Awards received: None

Invention disclosures: None

External funding applied for (indicate received/denied/pending):

1. Air Force Office Scientific Research, PI, "Implicit and p-Multi-Grid Algorithms for High-Order Spectral Difference Method on Unstructured Grid", **\$264,854**, 03/01/2006 – 2/28/2009.
2. Department of Energy, PI, "High-Order Spectral Volume Method for the Navier-Stokes Equations on Unstructured Tetrahedral Grids", **\$360,000**, 05/01/05 – 04/28/08.
3. Air Force Office Scientific Research, PI, "Parallel Simulation of Moving Boundary Flow Using Overset Adaptive Cartesian/Prism Grids and DES", **\$118,080**, 04/01/05- 05/31/06.
4. Rockwell Scientific/DARPA, PI, "Helicopter Quieting", **\$216,000**, 01/01/05 – 11/30/06.

Equipment Purchased/Renovations Made:

- Purchased a computer cluster (DELL with 16 node including 32 processors)

Progress Report (300 word maximum):

- The cluster has been used to secure funding from DARPA, the Department of Energy and the Air Force of Scientific Research. Most of my group's large CFD simulations are being conducted on this cluster.

Principal Investigator: Andrew Hillier

Publications/presentations based on project: Full day symposium entitled “Atom Probe Tomography: Opportunities and Challenges for New Materials Science” held on May 30, 2007. Organized by Krishna Rajan with support from the National Science Foundation, W.M. Keck Foundation and Iowa State University.

Awards received: \$120,000 to Andrew Hillier (and B. Narasimhan, K. Rajan, S. Sundararajan) for purchase of sputtering equipment for W.M. Keck Laboratory for High Throughput Atomic Scale Analysis, CBE Department

Invention disclosures: None

External funding applied for (indicate received/denied/pending): \$1,600,000 received from the W. M. Keck Foundation (with P.I. A.C. Hillier and co-PIs B. Narasimhan, K. Rajan and S. Sundararajan) to purchase Local Electrode Atom Probe and establish the W.M. Keck Laboratory for High Throughput Atom-Scale Analysis.

Equipment Purchased/Renovations Made: On PO I7-54439-00 new combinatorial sputtering system has been ordered. This amount represents the 2007 VPR match for the W. M. Keck Foundation proposal.

Progress Report (300 word maximum):

The \$120,000 is being used to purchase a combinatorial sputtering system to facilitate research being carried out by faculty involved in the Institute for Combinatorial Discovery, as well as other investigators throughout Iowa State University. A competitive bid for the sputtering system was completed in May and the order placed in early June with AJA International for an ATC-1800V Combinatorial Sputtering System. It is anticipated that the sputtering system will be received during late August, 2007. Installation will occur in 3029 Sweeney and this instrument will become part of the W. M. Keck Laboratory for High Throughput Atom Scale Analysis. The capabilities provided by this instrument do not currently exist at ISU. It will allow materials to be created in the form of well-defined thin films, multilayers, and combinatorial array or gradient libraries.

Principal Investigator: Jaeyoun Kim

Publications/presentations based on project: NA

Awards received: NA

Invention disclosures: NA

External funding applied for (indicate received/denied/pending):

Equipment Purchased/Renovations Made:

- Femto™ Plasma Asher
- Wafer Spinner
- COMSOL Multiphysics Software

Progress Report (300 word maximum):

The research focus on the design and simulation of a novel plasmonic waveguide structure for future applications in photonic integrated systems and on-chip optical interconnects. Plasmon waveguides attract an increasing level of research interest largely due to their ability to confine electromagnetic waves on a subwavelength scale which is not achievable in conventional index-contrast waveguides. A number of plasmonic waveguiding structures have been proposed and demonstrated. Many of them require, however, structures with extremely small feature size or high aspect ratio which make their implementation prohibitively difficult. Based on the literature survey and extensive numerical simulations, we invented a new plasmonic waveguiding structure called “quasi-coplanar plasmon waveguide (QCPW).” The results of numerical studies reveal that QCPW has many desirable characteristics. First of all, the fabrication QCPW involves only standard lithographic and deposition processes available from semiconductor industry. Secondly, the QCPW structure supports a wide range of wavelength, especially the important “telecommunication bandwidth” spanning from 1300 to 1550 nm. The size of the propagating mode, another important consideration, turned out to be far below the wavelength scale. In addition, the tolerance of the modal characteristics to the fabrication errors and misalignment are small as well. Currently, we are writing a manuscript reporting the structure. The lab note containing the numerical results and schematics is notarized. During the second half of 2007, we will extend the numerical investigation to time-domain to see the real propagation characteristics and will fabricate initial samples to characterize.

Principal Investigator: Richard LeSar

Publications/presentations based on project

Awards received: NONE

Invention disclosures: NONE

External funding applied for (indicate received/denied/pending): NONE

Equipment Purchased/Renovations Made: 16 nodes of a dual core dual processor opteron computer

Progress Report (300 word maximum):

For the \$80,000, I purchased approximately 16 nodes of a dual core dual processor opteron computer that is managed by the Department of Electrical and Computing Engineering. My students are currently using that computer to perform large-scale parallel computations to model the plasticity of metals in support of new theory development.

Principal Investigator: Krishna Rajan

Publications/presentations based on project:

Awards received: \$50,000 : start up funds---Krishna Rajan

Invention disclosures:

External funding applied for (indicate received/denied/pending):

Equipment Purchased/Renovations Made:

Nanoindenter facility

Progress Report (300 word maximum):

This piece of equipment will permit one to study mechanics of materials at the nanometric scale. The unique aspect of the facility is that we can study the effect of environmental conditions on materials properties such as high temperature and in-situ studies in fluid environments.

Principal Investigator: Aaron Clapp

Publications/presentations based on project: n/a

Awards received: \$31,000 for Equipment for Aaron Clapp, CBE Department

Invention disclosures: n/a

External funding applied for (indicate received/denied/pending):

Denied: Carver Foundation, Beckman Foundation, Ames Lab seed grant, NIH R01

Pending/future: NSF-CRIF, NIH R01

Equipment Purchased/Renovations Made: On PO I7-50307-00, purchased Fluoromax-4; Research spectrofluorometer with 150w ozone free Xe source and power supply.

Also, on PO I7-49358-00, used \$6,653 of the Battelle funding towards the purchase of a unilab antechamber.

Progress Report (300 word maximum):

These funds were used as part of a startup package where the equipment has been in place for approximately 6 months.

The Fluoromax-4 has been invaluable for characterizing the emission spectra of synthesized quantum dot samples. The sensitivity of this instrument will be necessary for developing highly sensitive assays that use very low concentrations of fluorescent nanoparticles. This is the most sensitive fluorimeter system currently on the market and has the potential for future upgrades (plate reader, fluorescence lifetimes, etc.).

The mini antechamber is an integral part of the Unilab glovebox system which allows us to safely handle air-sensitive precursor materials such as diethyl zinc. The antechamber is absolutely necessary for transferring materials into and out of the glovebox system.

Our ability to synthesize and characterize fluorescent nanoparticles is dependent on these two pieces.

Principal Investigator: Andrew Hillier

Publications/presentations based on project: Full day symposium entitled “Atom Probe Tomography: Opportunities and Challenges for New Materials Science” held on May 30, 2007. Organized by Krishna Rajan with support from the National Science Foundation, W.M. Keck Foundation and Iowa State University.

Awards received: \$36,000 to Andrew Hillier for renovating room 3117 Sweeney, CBE Department

Invention disclosures: None

External funding applied for (indicate received/denied/pending): \$1,600,000 received from the W. M. Keck Foundation (with P.I. A.C. Hillier and co-PIs B. Narasimhan, K. Rajan and S. Sundararajan) to purchase Local Electrode Atom Probe and establish the W.M. Keck Laboratory for High Throughput Atom-Scale Analysis.

Equipment Purchased/Renovations Made: Capital Project 502-07-47 created to renovate this research laboratory. Match of W. M. Keck Foundation proposal.

Progress Report (300 word maximum):

Renovations to 3117 are in process to update a laboratory in the 1964 wing of Sweeney Hall. This room is being converted from a storage area into an updated chemical/optical laboratory to provide space for researchers who were displaced by installation of the recently dedicated W.M. Keck Laboratory for High Throughput Atom Scale Analysis. This laboratory will be used to house several of the surface analysis and fabrication equipment used by researchers in the Department of Chemical and Biological Engineering. These include an atomic force microscope, a Langmuir-Blodgett trough, and an imaging ellipsometry/surface plasmon resonance system. Architectural drawings for renovations are complete, blueprints for updated electrical and climate control have been prepared, and cabinets/counters/sinks have been ordered and received. It is anticipated that renovations will be completed by early fall of 2007.

Principal Investigator: Song-Charng Kong

Publications/presentations based on project:

S.-C Kong, "A Study of Natural Gas/DME Combustion in HCCI Engines Using CFD with Detailed Chemical Kinetics," *Fuel*, Vol. 86, pp.1483–1489 (2007).

Awards received:

Invention disclosures:

External funding applied for (indicate received/denied/pending):

"Managing Early Adoption of Biodiesel by Commercial Fleets," Midwest Transportation Consortium, 5/01/2006—06/30/2007 (Received)

"Emissions from Biodiesel Burned in Utility Generator," Iowa Energy Center, 07/01/2006—06/30/2007 (Received)

"CFD/Detailed Chemistry Simulations of Spray Combustion Considering Practical Fuel Components," DOE Ames Laboratory, 07/01/2006 – 12/31/2007 (Received)

Equipment Purchased/Renovation Made:

\$20,000 designated for ISU High Performance Computing Partnership

Progress Report (300 word maximum):

This study continues to develop advanced models that use detailed chemistry with multi-dimensional computational fluid dynamics to simulate fuel combustion in the engine. Improvements in fuel efficiency and emission reduction are imperative to global environments and human health. The fundamental understanding of the engine combustion process will enable more efficient use of biofuel to replace petroleum-based fuels. The goal is to develop a high-fidelity computer model that will be further integrated with virtual engineering tools for designing a cleaner and more efficient combustion system. Simulation results are validated by experimental data. The resulting computer code can also be applied to study the combustion characteristics of various biofuel blends.

Both premixed and direct-injection engine combustion is simulated. A premixed compression-ignition engine using mixture of natural gas and dimethyl ether (DME) was studied. Both natural gas and DME can be produced from renewable sources. Detailed chemical kinetics with 83 species and 360 reactions was used to simulate the combustion chemistry. The model was also applied to simulate direct-injection diesel spray combustion process. Fuel spray dynamics, multiphase flows and combustion chemistry are modeled using an integrated CFD code. The above simulations were validated using experimental data. Continuing efforts of model improvements are being carried out. Future work will also include the combustion chemistry study of different diesel/biodiesel blends in engines.

Principal Investigator: Santosh Pandey

Publications/presentations based on project: One journal paper submitted to Journal of Chemical Physics. Two abstracts are under preparation for an IEEE/NIH Conference.

Equipment Purchased/Renovations Made:

- 1) Semiconductor Integrated Circuit Chips fabricated through MOSIS foundry (\$1,530 + \$1,905).
- 2) Leica Microscope with Camera and Vibration Isolation Table from north Central Instruments (Paid \$4,071.75, To be Paid: \$20,267.85)

Progress Report (300 word maximum):

We have designed and simulated a novel charge-sensing silicon device with very high scaling properties. The design has been fabricated and is being tested at Coover Hall. The microscope and imaging system is being installed. This will be used for testing characteristics of living cells and microorganisms under various levels of electrical fields. Fabrication of other devices is in progress at the Microelectronics Research Center, ISU for the separation of proteins based on their charge and size.

Principal Investigator: James Alleman

Publications/presentations based on project: None

Awards received: None

Invention disclosures: None

External funding applied for (indicate received/denied/pending):

Investigators: Jim Alleman and Tom Cackler
Project: Recycled Materials Resource Center
Sponsor: Federal Highway Administration
Duration: 5/1/07 – 4/30/2011
Funding: \$4,258,532
Denied

Investigator: Jim Alleman
Project: CCEE Learning Community
Sponsor: Target Corp. Campus Grant Program
Duration: 1/1/2007 – 12/31/2007
Funding: \$2,000
Received

Investigator: Jim Alleman
Project: ISU Student Study Lounge Proposal
Sponsor: Mass Electric Construction Co.
Duration: 7/15/06 – 6/30/07
Funding: \$20,500
Pending

Note: The above mentioned proposals are for Dr. Jim Alleman only. He is the recipient of the Battelle funding, however due to this generous gift, all faculty have benefited from the \$6300 donation. Particularly, many more proposals have been submitted, received and/or denied throughout the 6 month project.

Equipment Purchased/Renovations Made:

Dual Core Intel Xeon 5050 Server for the CCEE Department. New server provides the capability of larger memory storage and real-time computer access for an entire research group.

Progress Report (300 word maximum):

This server has benefited several research groups within the CCEE Department, specifically those of Dr. Chuck Jahren and Dr. David White, most recently. The infrastructure is set such that the faculty and research groups can spend their time doing the actual research with real-time data and less time working on data management and maintenance. The server has provided exceptional capabilities than is typically feasible with Departmental budgetary constraints.

ADVANCED MANUFACTURING PLATFORM

PROJECT FUNDS

CIRAS has stopped spending state (Battelle) dollars as we gather information to determine if there is enough interest in this work by Iowa manufacturers. A summary of progress to date is listed below.

An industry Advisory group has been formed using three members of the CIRAS Advisory Council. Members are:

- Jeff Judisch, Quality Assurance Manager, United Equipment Accessories, Inc., Waverly
- Kevin Urban, President, Midwest Metal Products, Cedar Rapids
- Bill Madsen, Manager, Order Fulfillment Integration, Worldwide Supply Chain Management, Deere & Company

CIRAS continues to work with John Deere on a "large" OEM supply chain effort. This work is in concert with the Wisconsin Manufacturing Extension Partnership.

CIRAS staff met with Rockwell staff to determine their interest in a Deere-type approach with Rockwell suppliers.

A meeting was held with an Ag industry OEM to brainstorm what a supplier development program should look like and provide in order to be successful from the perspective of an OEM with fewer than 1000 employees (as opposed to the very large OEMs like Deere and Rockwell). Present at the meeting representing the OEM were the President and the Materials Manager of a mid-sized Iowa company.

CIRAS staff gave a brief overview of three known approaches to supplier development:

- Wisconsin MEP type specialized value stream mapping to reduce manufacturing critical path time (such as JD and others are using in IA) done with individual suppliers
- A lean assessment used to identify weak areas and select improvement area (such as Northrop Grumman is using) done with individual suppliers
- Provide a group training session for suppliers on the basic concepts of the chosen approach – usually Lean – and attempt to motivate suppliers to adopt

We discussed some possible obstacles:

- In cases like JD and Northrop, the OEM is paying for a large portion of the initial engagement/assessment, if not for all of it. Can smaller OEMs mimic that?
- Data and measuring success – sharing of data/confidentiality

The key points brought up were:

- The OEM expressed their #1 need as 'quality' rather than delivery. So they were interested in something that could focus on quality. (FYI - Quality was the number one need that surfaced in the CIRAS survey of 4,000 Iowa manufacturers.)
- Quality is a broad concept; each individual supplier's need is different. As such, they feel a program would have to be customizable to the supplier's need.
- They are relatively small (they have some suppliers like Sauer/Danfoss that dwarf them) so they don't think they will have any traction with those companies.
- They do have smaller suppliers with whom they do have more leverage – probably 15-20 in Iowa.
- Getting an incentive for the supplier to participate may be a challenge. Typically the charge-backs on quality are not huge. Perhaps the ability to benefit from the growth of the OEM might be an incentive. However, it was also noted that they single source most of

these components. Or, perhaps, the supplier might be motivated by the fact that system improvements they make as a result of this project can be used with all the accounts they service.

- Some suppliers will tell CIRAS that the OEM causes some of the quality problems. The OEM saw this as a good opportunity for two-way improvement.

Conclusions:

- “Smaller” OEMs are interested.
- The program would probably have to provide a flexible approach.
- Motivation will be a challenge because the ‘smaller’ OEM does not have much seed money to pay for initial engagements.
- CIRAS needs to develop and present a coherent model before the OEM can give a strong yes or no.
- We should definitely contact additional ‘smaller’ OEMs to discuss/flush out potential approaches and obstacles.

Next actions:

- Meet with the Industry Advisory group prior to the next CAC meeting
- Meet with 1 or 2 more ‘smaller’ OEMs, or tier 1 suppliers that have sufficient supply base to merit such a program.