

Contact: Andy Baumert

GROW IOWA VALUES FUND PROPOSALS

Action Requested: Consider approval of Regent universities' FY 2010 Grow Iowa Values Fund (GIVF) proposals.

Executive Summary: The 2005 Iowa General Assembly appropriated \$5 million annually through FY 2015 to the Board of Regents through the GIVF administered by the Iowa Department of Economic Development. The funds are for *"capacity-building infrastructure in areas related to technology commercialization, entrepreneurship, and business development for the purposes of state economic development."* For FY 2010, the appropriation was reduced to \$4.5 million.

Each of the universities has submitted a proposal for how it will direct a share of these appropriations in FY 2010 which is the fifth year of funding under the program. Appropriations require a one-to-one funding match by the universities. The FY 2010 proposals from the universities total \$4.32 million. An amount of \$180,000 is reserved for the Board to allocate to research and commercialization projects submitted by private colleges and universities.

The \$4.32 million in GIVF funding will be matched by a total of \$4,463,508 from a variety of sources including: private companies participating in projects, university matching funds, client and testing fees, and non-state research grants.

The universities' proposals are summarized in this memo. Complete proposals are included on the website.

Iowa State University: \$1,732,500

Iowa State University proposes to allocate FY 2010 GIVF funds in a manner consistent with that used in FY 2009 in which funds were focused in two primary areas: 1) Infrastructure and Entrepreneurial Culture and 2) Commercialization Competitive Grants.

Infrastructure and Entrepreneurial Culture (\$750,000)

ISU proposes to allocate \$750,000 to further develop the infrastructure that will support the staff and activity required to grow, improve and sustain the technology transfer/commercialization efforts at ISU. Funds will be allocated to the following units:

- Pappajohn Center for Entrepreneurship: \$200,000 to provide private sector consultants and market research for startup companies and to provide staff to assist entrepreneurial efforts by faculty and students.
- ISU Research Park: \$200,000 to provide startup companies with a reduced-cost environment, to market opportunities at ISU to existing technology companies nationwide, and to actively assist growth by current tenant companies.
- Institute for Physical Research and Technology: \$100,000 to provide staff to identify developing technologies with commercial potential.
- Vice-Provost for Research: \$100,000 to the Vice Provost for Research office to fund opportunistic commercialization projects during the fiscal year, to promote collaborative relationships between ISU and Iowa companies, and to coordinate collection of commercialization performance data.

- Post Doctoral Entrepreneurial Program: \$150,000 to support a year-long, immersive program that takes science and engineering students who have just received their PhD degrees and trains them in entrepreneurship. An expectation of the program is that the awardees will start a company during the year of training.

Commercialization Competitive Grants Program (\$982,500)

ISU proposes to allocate \$982,500 to build and sustain a larger pipeline of projects utilizing ISU-developed technology. A Request for Proposals process was used campus-wide to obtain proposals for the development of innovations with commercial potential and to support the expansion of existing companies which will contribute significantly to the Iowa economy. A total of \$823,671 is proposed for seven new projects. \$103,490 is proposed to complete funding of four previously approved projects which had funding reduced in August 2009 when the Department of Economic Development cut GIVF appropriations by 20% to provide funding for flood recovery efforts. \$199,347 is proposed to be allocated later by the Office of Vice President for Research and Economic Development for qualified projects that arise during 2010 which are consistent with the mission of the funding guidelines.

The seven new projects involving Iowa companies have been selected from among those submitted under the RFP and are proposed to be funded:

-\$89,657 to further test the impact of plant-derived Vitamin D compounds in treatment of inflammatory bowel disease. Researchers have isolated Vitamin D compounds which have been shown in mice to reduce IBD symptoms and lesions. As many as one in one thousand Americans suffers from IBD and annual treatment costs are estimated at \$1.5 billion. Further testing is required to provide data to support a patent claim. Two Iowa businesses, Glycomyr, Inc., a startup company owned by an ISU faculty member who is the principal investigator, and Heartland Assays, Inc. are participating and providing project cost-share in the amount of \$138,000.

-\$146,610 for development, evaluation and commercialization of vaccines for swine influenza virus. The project will be conducted in partnership with Harrisvaccines, Inc., an Iowa company with 17 employees, created in part as the result of previous GIVF funding. Technology previously developed enables much more rapid production of vaccines for all subtypes of H1 and H3 influenza viruses. The annual impact of swine influenza virus on the U.S. pork industry is estimated at \$200 million creating a significant economic opportunity for an efficacious vaccine. In addition to \$77,169 in ISU cost share, Harrisvaccines has committed to \$72,770 in cost share.

-\$107,680 for testing and commercialization of a novel transgenic technology that makes plants resistant to invertebrate pests. Researchers have developed a transgenic technology that confers resistance to aphids and propose to test its efficacy against a broader range of invertebrate insects and nematodes. One particular nematode alone causes more than \$500 million in damage to soybean crops worldwide annually. Pioneer Hi-bred International has expressed interest in licensing the technology for possible commercialization. In addition to \$8,090 in ISU cost share and \$26,306 in USDA funding, Pioneer has committed to \$100,000 in cost share.

-\$69,500 for development of a novel genetic test for cattle diseases. The increasing use by beef and dairy producers of advanced reproductive techniques, such as embryo transfer and artificial insemination, has significantly increased the demand for genetic tests which can provide early and rapid identification of the presence of costly genetic diseases. Researchers propose to partner with the Ames Center for Genetic Technologies, Inc., (ACGT) to validate and commercialize a novel genetic testing platform which includes technology licensed from Iowa DNA Technologies of Coralville, Iowa. Researchers expect the new platform will reduce the cost of genetic testing in cattle by five- to ten-fold and will result in capturing a significant share of a market which is already growing by 15-20% per year. In addition to ISU cost-share of \$69,360, ACGT has committed to \$20,000 in cost share.

-\$31,426 for demonstration and scale-up of the use of high-powered ultrasonics to gelatinize corn starch. Researchers have shown at bench-scale that ultrasonics can be used to gelatinize

corn starch. This pre-cooked starch is widely used in food products such as gravies, puddings, soups and pizza toppings. Current industry technology is to use aggressive chemical methods to gelatinize starch. The ultrasonic method would permit the product to be marketed as a “natural” product. Project partner Grain Processing Corporation (GPC) of Muscatine, Iowa estimates annual sales of such a product would reach \$10 million of new sales. In addition to \$6,078 in ISU cost share, GPC has committed to \$25,000 in cost share and Emerson Electric Corporation has committed to \$5,000 in cost share.

-\$106,690 to develop detection systems that can be used to test for pathogens at the farm, food processing and clinical levels. Some important pathogens, such as salmonella or listeria occur at several points in a continuum such as a food production system, making rapid detection capability important at the farm, at food processing plants and in physicians’ offices and clinics. Advanced Analytical, Inc. (AAI), an Iowa company, using patented technology licensed from Iowa State University, has developed the DNA PROFiler system, an instrument capable of very rapid detection of human pathogens. Researchers propose to use this system as the basis for developing market-ready detection assays for pathogens such as salmonella and listeria which can be used at multiple critical control points. In addition to \$27,798 in ISU cost share, AAI has committed to \$120,000 in cost share.

-\$128,100 to test novel protein kinase (PK) compounds for efficacy in treating Parkinson’s Disease. Researchers have identified and patented novel PK compounds that appear to protect neurons in the brain from the degeneration caused by Parkinson’s Disease. Researchers have already formed a startup company, PK Biosciences Corporation, which will collaborate in testing the compounds in preclinical animal models with the aim of developing an effective neuroprotective drug for treatment of PD. The worldwide market for neurological degenerative disease pharmaceuticals is estimated at more than \$5 billion, of which PD treatments account for \$2.5 billion. In addition to \$118,100 in ISU cost share, PK Biosciences has committed to \$10,000 in cost share.

University of Iowa: \$1,732,500

The University of Iowa proposes to allocate \$1.732 million in GIVF funding in a new integrated model of economic development support. In 2009, SUI began to shift the emphasis on the use of GIVF funds from a focus on people and infrastructure to an increasing focus on enhancing technology disclosures, new company formation, commercialization and assisting startups. The new integrated model will involve the Vice President for Research, the University Research Park (UIRP), the Pappajohn entrepreneurial Center and the University of Iowa Research Foundation (UIRF). GIVF funding will be matched on a one to one basis from licensing revenue, industry funding, lab lease rental payments and developer funding.

Specific allocations are proposed as follows:

-\$450,000 to support new company formation and faculty education programs through UIRF with the goal of increasing research that can be commercialized. This new component in faculty education will provide support for all stages of new company formation, from conceptualization at the laboratory through legal entity formation to first equity investment. These efforts will include:

- university-private sector collaboration for proof-of-concept support for commercialization of SUI intellectual property
- gap funding for early stage technologies and startup companies
- use of technology savvy development experts to identify tech transfer opportunities
- Entrepreneurs-in-residence to support spinout companies
- university-private sector formation of startup companies in Iowa

-\$435,000 to support operational and personnel costs of key economic development areas. These funds will support critical functions in the UIRP, the BioVentures Center, Technology Innovation Center and the IOWA Centers for Enterprise.

-\$385,000 to fund expenses at the new BioVentures Building. The building provides critical space and services for life sciences startup companies at the Research Park. The funds will be used to pay construction debt.

-\$272,500 for support of the Office of Vice President of Research and to foster medium to long-range projects such as matching grants to support additional fundraising by new companies at the Research Park.

\$190,000 to support training, consultation and outreach for Iowa entrepreneurs. A new Project Manager will be hired at the John Pappajohn Entrepreneurial Center to identify opportunities and manage projects for existing Iowa companies, and to work with faculty and students in business planning, market research and financial assessment. The funding will also accelerate the creation of student-based ventures. A state-wide distance Certificate in Entrepreneurial Management undergraduate program will be launched. A distance-based entrepreneurial training program will be initiated to be open to all Iowans interested in learning how to write a business plan and start a new business.

Metrics

The University uses the following metrics to evaluate the effectiveness of funding provided to GIVF projects:

- Number of R&D agreements with Iowa companies
- Company matching funds provided
- University matching funds provided
- Number of license or option agreements
- Number of new companies formed and jobs created
- Company revenue created

University of Northern Iowa: \$855,000

The University of Northern Iowa proposes to allocate \$855,000 in five project areas. Each project has achieved substantial outcomes and leveraged private and federal support. Specific details are included for the following five projects:

- Technology transfer and business incubation,
- Rural entrepreneurship,
- Market research,
- Regional development and
- National Ag-Based Lubricants Center.

GIVF funds will be matched on a 1:1 basis.

Project 1: Technology Transfer and Business Incubation \$288,000

UNI continues to advance intellectual property evaluation and protection, commercialization of campus innovations through licensing/strategic partnerships, and new business development. A number of the proposed services directly impact these efforts, including the Innovation Incubator and the UNI MyEntre.Net initiative. Working in tandem, these efforts will result in strong, broad based linkages between the University and the greater Iowa business community.

Specific priorities for FY 2010:

Area 1 - Business Incubation: UNI opened the new Innovation Incubator with a goal of achieving full occupancy by the end of the 2009 fiscal year. The first tenant, with six employees, graduated from the incubator in late 2008. Construction of unfinished shell space began soon afterward and is expected to be completed by late summer 2009. The goal of 2010 is to fill the expanded space with faculty spinoffs and area entrepreneurs. The student business incubator is at full tenancy.

Area 2 - Intellectual Property Development: Through the collaborative efforts of the Office of Intellectual Property and the Office of Sponsored Programs, UNI faculty and staff have generated an average of 16 new, marketable inventions per year over the past three years; adding to this, 14 more inventions were recorded during FY09. The estimated economic benefit to Iowa businesses is approximately \$5 million per year. Though the flood-related reversions of GIVF funding have decreased the number of faculty projects in the past year, UNI hopes to rebuild the pipeline in 2010 and secure 2-3 new license agreements.

Matching Funds: Federal Funds from the Department of Energy and the Small Business Administration, UNI Research Foundation and program income.

Results/Metrics: The overarching target for the Innovation Incubator and Student Business Incubator is to achieve full occupancy by the end of the fiscal year. At least 15 intellectual property disclosures will be received with 2-3 licensing agreements executed under patent or trade-secret provisions and 4-5 new late-stage research projects will be awarded to UNI faculty.

Project 2: Rural Entrepreneurship ♦ \$180,000

MyEntre.Net is an entrepreneurship development system that serves entrepreneurs by linking them with advanced technical and marketing assistance and develops community-based support networks and financial resources to help entrepreneurs create, successfully operate and expand businesses in Iowa. MyEntre.Net regions also receive local capacity building assistance to support entrepreneurial development.

As a result of the 2008 natural disasters, the national economic downturn and improved broadband access in rural regions, new needs have emerged among rural small business owners. MyEntre.Net is evolving in response to these needs.

Specific priorities for FY 2010:

Area 1 – Launch the new MyEntre.Net website: The program will be re-launched as: ***Iowa's Online Community for Small Business and Entrepreneurs***, a first-in-the-nation approach of a peer-to-peer business network, customized for one state. Approximately 3,000 primarily rural entrepreneur registrations have already been transferred to the new site and a new peer-to-peer lending section and an expansion of the "Buy-Sell Iowa Companies" section are envisioned.

Area 2 – Cluster Expansion: In response to requests, MyEntre.Net regions will be expanded into multiple counties surrounding existing regions. The expanded clusters generally follow the Iowa Department of Economic Development's Regional Marketing Clusters. As many as 8-12 new counties may be served through this new approach.

Area 3 - UNI will lead a consortium of 15-20 service provider partners in the delivery of the third annual EntreFest!, a statewide entrepreneurship conference for small business:

Beginning with the first EntreFest in 2008, hundreds of small business owners in Iowa have been reached by this statewide event, many of them business owners who had never attended a business conference before.

Matching Funds: Regional Business Center client fees and Federal funds (SBA)

Results/Metrics: In FY 2010, the MyEntre.Net online community will grow by 25% to 4,000 small business owners. At least 500 owners will attend a regional EntreBash! event. Those owners are expected to generate 125 new or expanded businesses and create 300 new full time jobs. 250 entrepreneurs are expected to attend the EntreFest! Statewide conference in March 2010.

Project 3: Market Research ♦ \$90,000

UNI Strategic Marketing Services (SMS) has seen a substantial increase in the number of individuals exploring the possibility of starting a business. SMS provides these individuals "market intelligence" by gathering and analyzing market data, helping them make better decisions. SMS will use GIVF funds in six primary areas in FY 2010:

Area 1- Market research projects for established Iowa companies: This area will receive priority for funding with project costs to be split between SMS and the client with a maximum of \$10,000 in GIVF funding per client. Priority will be given to companies in the state's target industry clusters.

Area 2 - Market research projects for Iowa associations and local governments: This area of activity will be devoted to communities and organizations seeking to use market research to grow the economic base of their community. GIVF support will be used to cover half the cost of such projects.

Area 3 - Low-cost secondary market research to support Economic Gardening: "Economic gardening" is a concerted effort to grow jobs through entrepreneurial activity as opposed to recruiting jobs from outside of a community. SMS will provide low-cost, secondary market research services to entrepreneurs/small businesses across the state. SMS staff will work in cooperation with existing economic development organizations and business service providers to conduct secondary research on behalf of these organizations' clients. A maximum of five businesses or individuals will be eligible.

Area 4 - Market research consultations, plans, and assessments: SMS will consult with Iowa businesses, entrepreneurs, statewide associations and local governments to assess their market research needs. Where appropriate, market research plans will be developed.

Area 5 - Market research assistance to UNI's technology transfer program: Phase One projects in this area will provide researchers with initial market screening and identification of potential competitors. The UNI Research Foundation (UNIRF) will support 50% of Phase One research and GIVF will support 50%.

Area 6 - Marketing and education: Many Iowa businesses, city governments and organizations are not familiar with market research, i.e., what it is, benefits to be realized, and how it can help grow their business. GIVF funds will be used to develop and implement an educational marketing/public relations effort including articles, case studies, newsletter contributions, and a postcard mailing campaign.

Results / Metrics:

Areas 1 & 2, \$60,000: SMS will complete 6-10 market research projects as described in Areas 1 & 2. Measurement will be based on new/increased sales, new sales leads, new product introductions, product modifications, customer satisfaction measurements, new jobs created, workforce development, physical plant expansions, new market penetration, market expansion, job retention, and focused marketing/operations initiatives.

Areas 3, 4 & 5 \$25,000: 25 consultations, assessments, and market research plans, economic gardening projects or secondary research projects will be conducted.

Area 6 \$5,000: Development and implementation of a public relations/marketing campaign. Participate in or publish at least eight public relations activities/articles across the state. Implement a direct mail campaign consisting of postcards/promotional letters. Develop a poster to be displayed by service providers throughout Iowa.

Project 4: Regional Development ♦ \$117,000

With the shared purpose of expanding and stimulating economic growth across the state of Iowa, the Institute for Decision Making (IDM) continues to implement regional development assistance programs that build capacity regionally and locally to sustain Iowa's regional economies over the long term.

Specific priorities for FY 2010:

Area 1 - Sustainability of regional work and strengthening the collaborative partners: Many of Iowa's organized economic development regional groups continue to benefit from technical and other assistance in sustaining themselves as active regions. Institute for Decision Making (IDM) staff will continue to act as quasi-staff members to one region.

Area 2 – Regional metrics pilot project: IDM will work with the Department of Economic Development to train regions how to effectively collect data and assess regional progress.

Area 3 - Social media as potential marketing tools: IDM will help regions integrate social media into their marketing strategy. These tools can be used to build awareness of the region, attract potential members of the workforce and drive users to local websites.

Area 4 – Economic adjustments and shifts to economic base: IDM has made significant progress researching and documenting practical processes that assist regions in averting or proactively responding to layoffs or plant closings. IDM will formalize training delivery partnerships with Iowa Workforce Development. IDM expects to develop a matching on-line tool that will aid in marketing the region.

Area 5-Regional workforce assessments-Skillsheds: A skillshed is designed to provide economic developers and others with a thorough understanding of the labor skills and knowledge clusters with a region's laborshed. IDM and Iowa Workforce Development (IWD) have been piloting a skillshed analysis. IDM will assist IWD in evaluating and revising the skillshed methodology for future studies in other regions of the state.

Matching Funds: Program income, workforce development grants and Heartland EDC.

Results/Metrics: IDM will solicit and report testimonials and track progress recorded through regional metrics, increase in marketing leads and delivery of training based upon reports from local developers.

National Ag-Based Lubricants (NABL) Center - \$180,000

The National Ag-Based Lubricants (NABL) Center serves the emerging bio-products industry by providing reliable, specialized research and testing services. As one of the best-equipped biolubricant facilities in the US, the NABL Center has secured more than \$5M in federal equipment funding in support of UNI's effort to develop and commercialize biobased lubricant products, while helping to aid the growth of the biobased lubricants industry.

Specific priorities for FY 2010:

Area 1 – Support Iowa's biobased products industry: NABL will continue to participate in activities related to improving test standardization for biobased products.

Area 2 – Fundamental research of vegetable oil based products: This research activity targets new methods of improving the characteristics and properties of vegetable oils. Efforts will be focused on properties that cause serious problems, including lack of oxidation stability and poor cold temperature flowability.

Area 3 – Investigate the stability and cold temperature properties of vegetable based fuel additives: This research area aims to improve the oxidate stability and cold temperature properties of vegetable oils as fuel lubricity additives.

Area 4-Research the potential use of vegetable oils as engine oil additives: This research targets new techniques using vegetable oils and their derivatives as engine lubricants and lubricity additives.

Matching Funds: Federal funding from US Department of Energy and testing fees.

Results/Metrics:

NABL will provide fee-based testing services to at least 15 biofuels and biolubricants industries during FY 09-10 and will complete 3 American Society of Testing Materials Crosscheck programs. NABL will formulate at least two different engine oils. NABL laboratories will complete at least 100 hours of diesel engine testing.