Governing Iowa's public universities and special schools

University of Iowa
Iowa State University
University of Northern Iowa
Iowa School for the Deaf
Iowa Braille and Sight Saving School
Lakeside Lab Regents Resource Center
Quad-Cities Graduate Center
Southwest Iowa Regents Resource Center
Tri-State Graduate Center

BOARD OF REGENTS
STATE OF IOWA

January 14, 2013

The Honorable Terry E. Branstad
Governor's Office

Michael E. Marshall
Secretary of the Senate

Charles Smithson
Chief Clerk of the House

Holly Lyons, Division Director
Legislative Services Agency

Debi Durham, Director
Department of Economic Development

Re: Grow Iowa Values Fund and Regent Innovation Fund

Pursuant to Iowa Code §15G.111(5.c) and 2012 Iowa Acts Chapter 1136 §17, the enclosed annual report includes information from the University of Iowa, Iowa State University, and the University of Northern Iowa, and the allocations to private universities for the Grow Iowa Values Funds and the Regent Innovation Fund.

If there are any questions concerning this report, please do not hesitate to contact us.

Sincerely,

Robert Donley

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Enclosures
cc: Ron Robinson
Legislative Liaisons
Legislative Log

University of Iowa - as of December 31, 2012
Grow Iowa Values Fund Appropriations

	Board of Regents approved September 2011	FY 2012 GIVF Appropriation	$576,000
1	Proof of Concept Funding	$230,000	
2	Entrepreneurial Education and Business Support Programs	$135,000	
3	Infrastructure Investment for Growing Startup Companies	$211,000	

University of Iowa	Project	List of all FY 2012 Revenue Sources	Revenue Dollars for FY 2012	Amount of FY 2012 State Appropriations Expended as of 12/31/2012
	Proof of Concept Funding	FY 2012 State Appropriations (GIVF)	$230,000	$230,000
		FY 2012 Matching Funds (Other)	$230,000	$230,000
Description of Project	Proof of concept funding will be used to move highly promising, but very early stage, technology from faculty inventors that has commercialization and licensing potential.			
Anticipated End Results	Exciting discoveries from University research are, by definition, very early stage and require sustainable sources of funding to take nascent intellectual property to the point where private investment is viable. The funds are used to support the development of innovations with commercial potential, with the result that more UI technology reaches the marketplace as the foundation for new Iowa companies and/or the growth of existing Iowa companies. The funding is intended to support a wide-range of stages in technology development, from initial concept (prior to intellectual property disclosure), to proof of concept, to licensing and commercialization. GIVF fills this critical void and has enabled UI to take advantage of our growing technology pipeline, nurture companies with desired outcome of create new companies and jobs for the State of Iowa.			
Results achieved to Date/Plans	The request for proposals for the GIVF Seed Grant Program using FY12 funds was announced in September 2011. Through a competitive review process, 18 applications were reviewed with awards going to 7 faculty commercialization ideas being funded. Total funds awarded for this competition was $250,000.			

University of Iowa	Project	List of all FY 2012 Revenue Sources	Revenue Dollars for FY 2012	Amount of FY 2012 State Appropriations Expended as of 12/31/2012
	Entrepreneurial Education and Business Support Programs	FY 2012 State Appropriations (GIVF)	$135,000	$135,000
		FY 2012 Matching Funds (Other)	$135,000	$135,000
Description of Project	To support comprehensive student and faculty entrepreneurial education and business programs to help create and sustain University startup companies.			
Anticipated End Results	The John Pappajohn Entrepreneurial Center (JPEC) offers one of the most comprehensive entrepreneurial education and business support programs in the nation. Featured programs supporting economic development include providing business consulting services to small companies located across Iowa through its student field study program; hosting/sponsoring elevator pitch and business plan competitions to support innovation and new venture creation; supporting the creation and launch of student-based business through the Bedell Entrepreneurship Learning Laboratory; and delivering entrepreneurial education through academic courses across campus and online, workshops/seminars, and high school teacher training/curriculum.			
Results achieved to Date/Plans	1) Employed a Project Manager to work with UI faculty / staff / students in the areas of strategic business planning, market research, operations and financial feasibility. Project manager also identified and managed projects for existing Iowa-based companies to work with UI student consulting teams, administers business plan competitions, and provide strategic business development technical assistance. 2) Expansion of Iowa Medical Innovation Group (IMIG) initiative to complete four commercialization projects. IMIG is a highly successful interdisciplinary program involving students from Medicine, Engineering, Business and Law, who are focused on identifying new opportunities for medical devices and technologies. Twenty-two potential projects were identified and currently four projects are being developed further by a group of thirty-two students. 3) JPEC hosted four innovation competitions with 139 aspiring entrepreneurs presenting their new business opportunities. Additionally, JPEC students provided business consulting services to 21 companies in Iowa.			

University of Iowa - as of December 31, 2012
Grow Iowa Values Fund Appropriations

	Board of Regents approved September 2011	FY 2012 GIVF Appropriation	$576,000
1	Proof of Concept Funding	$230,000	
2	Entrepreneurial Education and Business Support Programs	$135,000	
3	Infrastructure Investment for Growing Startup Companies	$211,000	

University of Iowa	Project	List of all FY 2012 Revenue Sources	Revenue Dollars for FY 2012	Amount of FY 2012 State Appropriations Expended as of 12/31/2012
	Infrastructure Investment for Growing Startup Companies	FY 2012 State Appropriations (GIVF)	$211,000	$211,000
		FY 2012 Matching Funds (Other)	$211,000	$211,000
Description of Project	To support incremental infrastructure investment needed to support growing numbers of University startup and technology-based companies, including space and technical assistance.			
Anticipated End Results	The requested funds would continue to invest in technology development infrastructure to strengthen and accelerate commercialization and support critical economic development support functions associated with the UI Research Park, BioVentures Center, Technology Innovation Center and ICE. We will create an innovative, joint venture partnership between the UI, regional economic development leaders and the private sector to expand and develop a new non-laboratory based Incubation Center at the University of Iowa Research Park (UIRP) on the Oakdale Research Campus.			
Results achieved to Date/Plans	1) Request for Qualifications issued to explore developer/partner model for master planning, infrastructure investment, and marketing of the UIRP. 2) Partnership between the UIRP, Iowa City Community School District and Kirkwood Community Center for STEM/career academic center within the UIRP. 3) New position search is currently underway to assist faculty who are considering the creation of a new venture based on their research and innovations. This position will lead a menu of services to faculty as they navigate through early stage business planning and development activities. This includes linking faculty to UI resources, external funding opportunities and identifying industry experts and business mentors. 4) New company recruited to the UIRP and are constructing an 18,000 square ft. building. 5) Partnered with the City of Coralville on a RISE grant to develop critical park infrastructure.			

University of Iowa - as of December 31, 2012

Innovation Fund Appropriations

		FY 2013 Innovation Fund	
Board of Regents approved September 2012		**Appropriation**	**$1,050,000**
1	Proof of Concept Funding	$525,000	
2	Entrepreneurial Education and Business Support Programs	$133,500	
3	Infrastructure Investment for Growing Startup Companies	$391,500	

University of Iowa	**Project**	**List of all FY 2013 Revenue Sources**	**Revenue Dollars for FY 2013**	**Amount of FY 2013 State Appropriations Expended as of 12/31/2012**
1	**Proof of Concept Funding**	FY 2013 State Appropriations (INNOV)	$525,000	$49,981
		FY 2013 Matching Funds (Other)	$525,000	$61,179
Description of Project	Proof of concept funding will be used to move highly promising, but very early stage, technology from faculty inventors that has commercialization and licensing potential.			
Anticipated End Results	Exciting discoveries from University research are, by definition, very early stage and require sustainable sources of funding to take nascent intellectual property to the point where private investment is viable. The funds are used to support the development of innovations with commercial potential, with the result that more UI technology reaches the marketplace as the foundation for new Iowa companies and/or the growth of existing Iowa companies. The funding is intended to support a wide-range of stages in technology development, from initial concept (prior to intellectual property disclosure), to proof of concept, to licensing and commercialization. Innovation Funds fills this critical void and has enabled UI to take advantage of our growing technology pipeline, nurture companies with desired outcome of create new companies and jobs for the State of Iowa.			
Results achieved to Date/Plans	The Iowa Centers for Enterprise provided seed funding designed to expand the commercialization of UI technologies. The funding is intended to develop innovations with commercial potential and support a wide range of technology stages from initial concept, to proof of concept, to licensing and commercialization. All projects are intended to have a clear commercial potential for the state of Iowa, such as growth in Iowa companies, creation of a new Iowa company, or licensing to an existing Iowa company. Awards were made in two rounds between July and December 2012. Pre-proposals were submitted and reviewed by UIRF staff and student teams for the patent and commercial potential. This included financial and market analysis. PIs were mentored through the final project proposal process, and each proposal was reviewed by a committee of university and business members. In November 2012, funding was awarded to 9 faculty projects selected from 20 proposals. Of the 9 awards, 6 investigators went on to form new ventures within the year. In December, funding was awarded to 4 faculty projects selected from 8 proposals. Products being developed range from software, to medical devices and vaccines. Several are "platform" technologies that plan on developing multiple related products and services. Two of the ventures received $150,000 royalty based loans from the Iowa State Demonstration Funds using UIRF awards as matching funds. Other ventures will apply as appropriate. Commercialization projects have stated milestones that are monitored by the UIRF. The goal is to prepare each project for additional investment through SBIRs, grants and private equity.			

University of Iowa	**Project**	**List of all FY 2012 Revenue Sources**	**Revenue Dollars for FY 2013**	**Amount of FY 2013 State Appropriations Expended as of 12/31/2012**
2	**Entrepreneurial Education and Business Support Programs**	FY 2013 State Appropriations (INNOV)	$133,500	$1,000
		FY 2013 Matching Funds (Other)	$133,500	$68,879
Description of Project	To support comprehensive student and faculty entrepreneurial education and business programs to help create and sustain University startup companies.			
Anticipated End Results	The John Pappajohn Entrepreneurial Center (JPEC) offers one of the most comprehensive entrepreneurial education and business support programs in the nation. Featured programs supporting economic development include providing business consulting services to small companies located across Iowa through its student field study program; hosting/sponsoring elevator pitch and business plan competitions to support innovation and new venture creation; supporting the creation and launch of student-based business through the Bedell Entrepreneurship Learning Laboratory; and delivering entrepreneurial education through academic courses across campus and online, workshops/seminars, and high school teacher training/curriculum.			

University of Iowa - as of December 31, 2012

Innovation Fund Appropriations

	Board of Regents approved September 2012	FY 2013 Innovation Fund Appropriation	$1,050,000
1	Proof of Concept Funding	$525,000	
2	Entrepreneurial Education and Business Support Programs	$133,500	
3	Infrastructure Investment for Growing Startup Companies	$391,500	

Results achieved to Date/Plans	In order to support and encourage student, faculty and staff entrepreneurs, JPEC and the Iowa Centers for enterprise sponsored a series of Elevator Pitch Competitions in the fall of 2012. These were launched with a workshop, supported through several group mentoring sessions as well as one-on-one advising and culminated with two competitions that awarded a total of $47,000 in startup seed grants ($30,000 to 16 companies from this funding and $17,000 in matching private support to an additional 9 student companies). In addition, $3,500 in seed funding was awarded to 5 student businesses in the Bedell Entrepreneurship Learning Laboratory and $750 was awarded to the best idea identified at the Iowa City Startup Weekend. In the spring of 2013, JPEC will continue the development of the entrepreneurs who participated in the fall Elevator Pitch Competitions through mentoring as well as by sponsoring Business Model and Business Plan Competitions. Additional seed awards will be available for Bedell Lab students. A Graduate Student / Faculty Technology Entrepreneur Boot Camp will be developed.

University of Iowa	Project	List of all FY 2013 Revenue Sources	Revenue Dollars for FY 2013	Amount of FY 2013 State Appropriations Expended as of 12/31/2012
3	**Infrastructure Investment for Growing Startup Companies**	FY 2013 State Appropriations (INNOV)	$391,500	$186,426
		FY 2013 Matching Funds (Other)	$391,500	$224,483

Description of Project	To support incremental infrastructure investment needed to support growing numbers of University startup and technology-based companies, including space and technical assistance.
Anticipated End Results	The requested funds would continue to invest in technology development infrastructure to strengthen and accelerate commercialization and support critical economic development support functions associated with the UI Research Park, BioVentures Center, Technology Innovation Center and ICE. We will create an innovative, joint venture partnership between the UI, regional economic development leaders and the private sector to expand and develop a new non-laboratory based Incubation Center at the University of Iowa Research Park (UIRP) on the Oakdale Research Campus.
Results achieved to Date/Plans	The Regents Innovation Funds has been used to assist several new University startup and technology-based companies by assisting them in technology development infrastructure to strengthen and accelerate commercialization. The funding has been used to obtain FDA consulting for several faculty projects, legal fees for incorporation, website launch assistance, and to acquire market analysis reports to enhance business planning. New companies that have benefited from this support include: Emmyon, Memcine, Iowa Approach, and NanoMedTrix. Future support will include the purchase of laboratory equipment, full installation of a 3D prototyping printer (partners with the College of Engineering and College of Liberal Arts) and subsidized laboratory rent for Memcine, Inc. as they move into the BioVentures Center (January 2013). In addition, the UI Research Foundation (UIRF) and the UI Research Park (UIRP) have met with several Iowa based service providers to provide one-on-one counseling to our new and existing companies to assist them with HR issues, legal advice, accounting and R&D tax service and marketing support. These workshops will begin mid January 2013. The UIRP and UIRF will hold a Proof of Concept competition for existing incubator tenants in January 2013. The incubator companies will have a chance to submit their proof of concept ideas to a judging panel. They will be judged on their proof of concept, business plan, marketing plan and etc. Awardees of this competition will receive funding to further support their ideas and will be encouraged to continue to meet with our internal economic development team for consultation.

Iowa State University - as of December 31, 2012

Grow Iowa Values Fund Appropriations

	Board of Regents approved August 2010	**FY 2011 GIVF Appropriation**	**$1,459,200**
1	Commercialization Infrastructure and Campus-Wide Entrepreneurial Cult	$500,000	
2	Commercialization Program	$959,200	

Iowa State University	**Project**	**List of all FY 2011 Revenue Sources**	**Revenue Dollars for FY 2011**	**Amount of FY 2011 State Appropriations Expended as of 12/31/2012**
1	**Commercialization Infrastructure and Campus-Wide Entrepreneurial C**	FY 2011 State Appropriations (GIVF)	$500,000	$382,246
		FY 2011 Matching Funds (General Fund)	$335,741	
		FY 2011 Matching Funds (In-Kind)	$200,000	
		FY 2011 Matching Funds (Other)	$0	
Description of Project	See individual projects			
Anticipated End Results				
Results achieved to Date				
Plans				

Iowa State University	**Project**	**List of all FY 2011 Revenue Sources**	**Revenue Dollars for FY 2011**	**Amount of FY 2011 State Appropriations Expended as of 12/31/2012**
2	**Commercialization Program**	FY 2011 State Appropriations (GIVF)	$959,200	$421,482
		FY 2011 Matching Funds (General Fund)	$532,331	
		FY 2011 Matching Funds (Federal Support)		
		FY 2011 Matching Funds (Cash)		
		FY 2011 Matching Funds (In-Kind)	$134,011	
Description of Project	See individual projects			
Anticipated End Results				
Results achieved to Date				

Iowa State University	**Project**	**Total Project Budget**	**Allocated Dollars FY 2011**	**Amount of FY 2011 State Appropriations Expended as of 12/31/2012**
Principal Investigator			$200,000	$82,246
Description of Project	Pappajohn Center for Entrepreneurship			
Anticipated End Results				
Results achieved to Date	Grow Iowa Values Funds provide student and staff support to assist individuals starting and growing businesses. The funds also support on campus entrepreneurship activities to provide students educational and experiential opportunities in entrepreneurship, including participation in a national student entrepreneurship conference, and supporting coordinating experienced entrepreneurs as student mentors.			
Plans				

Iowa State University - as of December 31, 2012

Grow Iowa Values Fund Appropriations

	Board of Regents approved August 2010	**FY 2011 GIVF Appropriation**	**$1,459,200**
1	Commercialization Infrastructure and Campus-Wide Entrepreneurial Cult	$500,000	
2	Commercialization Program	$959,200	

Iowa State University	**Project**	**Total Project Budget**	**Allocated Dollars FY 2011**	**Amount of FY 2011 State Appropriations Expended as of 12/31/2012**
Principal Investigator			$200,000	$200,000
Description of Project	ISU Research Park			
Anticipated End Results				
Results achieved to Date	Grow Iowa Values Funds support efforts to provide support and assistance to companies at the Research Park or prospective Research Park companies. The companies assisted include; 1. Working with technology startup companies and faculty and students considering forming new companies. 2. Assisting technology companies secure the resources they need to be successful and grow. 3. Working with state and local economic development officials to recruit existing technology companies to Iowa.			
Plans				

Iowa State University	**Project**	**Total Project Budget**	**Allocated Dollars FY 2011**	**Amount of FY 2011 State Appropriations Expended as of 12/31/2012**
Principal Investigator			$100,000	$100,000
Description of Project	Vice President for Research			
Anticipated End Results				
Results achieved to Date	Grow Iowa Values Funds support the technology transfer and economic development mission of the Office of the Vice President for Research and Economic Development (VPRED). Specifically, these funds are used to support the Industry Relations effort including salary support and operating budget. The Grow Iowa Values Fund commercialization program is administered in the VPRED office as well as efforts to coordinate industry relations and other tech transfer activities across campus.			
Plans				

Iowa State University	**Project**	**Total Project Budget**	**Allocated Dollars FY 2011**	**Amount of FY 2011 State Appropriations Expended as of 12/31/2012**
Principal Investigator	Diane Janvrin	$40,590	$36,521	$11,736
Description of Project	Market Research for Prioritizing Market Segments for Product Development			
Anticipated End Results	Provide WebFilings management with a broad understanding of potential markets for their product and an in-depth analysis of a single market segment.			
Results achieved to Date	WebFilings is an Iowa based startup company that has developed a cloud-based software application to assist publicly traded companies with developing reports for the Securities and Exchange Commission (SEC). We were asked to identify up to twelve industry segments where significant and perpetual reporting requirements exist for regulators, customers or stakeholders. Based on discussions with WebFilings management, we were then directed to conduct an in-depth market analysis of one market segment. We identified seven industry segments that may be able to use WebFilings' software application and presented our initial (Phase I) results to WebFilings management. After meeting to discuss our results on November 2, 2010, WebFilings management directed us to concentrate on one market segment. During late November and early December, we conducted 17 interviews with chief financial officers for firms in this market segment. The firms we interviewed ranged in revenues from less than $50 million annual sales to greater than $200 million annual sales. We analyzed the results of our interviews and submitted the final report on January 22, 2011.			
Plans				

Iowa State University - as of December 31, 2012

Grow Iowa Values Fund Appropriations

	Board of Regents approved August 2010	**FY 2011 GIVF Appropriation**	**$1,459,200**
1	Commercialization Infrastructure and Campus-Wide Entrepreneurial Cult	$500,000	
2	Commercialization Program	$959,200	

Iowa State University	**Project**	**Total Project Budget**	**Allocated Dollars FY 2011**	**Amount of FY 2011 State Appropriations Expended as of 12/31/2012**
Principal Investigator	Hui Hu	$78,305	$78,305	$18,911
Description of Project	Development of Advanced Flow Diagnostic Techniques to Characterize Next Generation Fuel Nozzles			
Anticipated End Results	The goal of this research project is to develop advanced diagnostics to quantify spray characteristics and to elucidate important processes in spray flows, such as the breakup of liquid jets and sheets, atomization and evaporation of fuel droplets, and air/fuel mixing in order to assist GECD in developing next generation fuel nozzles for maximized energy efficiency while minimizing pollutant emissions, and maintaining the operability requirements.			
Results achieved to Date	Following progresses have been made on this GIVF project since the proposed project was awarded: 1). The system design of the experimental rig needed to carry out the proposed research work has been finished. Some of the hardware parts and test models are being manufactured. 2). The theoretical framework of the proposed advanced flow diagnostic techniques has been finished. The high-energy laser system, high-speed imaging system and associated the optics and optic-mechanic devices have already been allocated for this GIVF project. 3). A comprehensive literature review of previous research work related to this GIVF research project has already been finished. 4). A GECD fuel injector/atomizer nozzle has been already been received for the preliminary measurements. 5). A research team has been formed to conduct the proposed research. The team members include: Dr. Hu Hu-the PI; Dr. Zifeng Yang- Post-doctoral Research Associate; and Mr. Daniel Dvorak - a Graduate Research Assistance. 6). A comprehensive experimental study has been conducted, and PIV measurements of the spray flows have already been performed. 7). The measurement results of the PIV study of the spray flows are being processed and analyzed. 8). A conference paper entitled “Laser Based Measurement of a Counter-swirling Airblast Nozzle Spray Flow” has been submitted to 42th AIAA Fluid Dynamics Conference to be held on 25-28 June 2012 at New Orleans, Louisiana.			
Plans				

Iowa State University	**Project**	**Total Project Budget**	**Allocated Dollars FY 2011**	**Amount of FY 2011 State Appropriations Expended as of 12/31/2012**
Principal Investigator	Patrick Halbur	$83,000	$83,000	$46,715
Description of Project	Development of a Novel Genetic Test for Inherited Bovine Disease and Its Application to Embryos			
Anticipated End Results	Develop and commercialize a panel of molecular diagnostic assays for detection of genetic diseases and production traits sensitive enough to use on biopsies from bovine embryos. This will benefit the Iowa beef and dairy industries by decreasing costs associated with maintaining the pregnancies of genetically diseased animals and accelerating the selection of genetically superior seed stock Iowa cattle producers.			
Results achieved to Date	Our original partner on this grant, Ames Center for Genetic Technologies (ACGT) went out of business in mid 2011. We are now working with a small biotech company called Radix BioSolutions. We have continued to advance the use of the Luminex platform for commercial diagnostic testing. Our embryo biopsy technique has been further adapted and validated to achieve acceptable pregnancy rates following post-biopsy testing and freezing. Embryos were flushed from seventy three cows resulting in recovery of 337 embryos of which 200 were biopsied and frozen. Twenty three frozen and biopsied female embryos were transferred into recipients. A 30% pregnancy rate was archived on the first group of 12. Testing for confirmation of pregnancy in the second group of 11 will be done in late January, 2012. Efforts are ongoing to continue to improve pregnancy rates. In collaboration with Radix Biosolutions we have now successfully adapted the Luminex platform to determine gender of biopsied fetuses. Probe design and test validation for genetic disorders including Complex Vertebral Malformation, Arthrogryposis Multiplex, Neuropathic Hydrocephalus has not progressed due to problems with acquisition of appropriate positive control materials from other researchers and private companies working in this area. Since the major benefit of the Luminex platform is in high throughput multiplexing diagnostic assays, we have redirected use of the Luminex platform to serological assays. Specifically, we are now focusing on an assay for anti-Mullerian Hormone (AMH) that appears to have good potential to predict the fertility and reproductive longevity of heifers prior to selection as breeding stock. If we are able to further develop and validate this assay it could have substantial economic benefit to the livestock industry. We are now investigating and comparing the use of an experimental AMH ELISA and a novel Luminex-based AMH serological assay to predict fertility (number of viable embryos) in heifers being flushed as a part of this project over the next 6 months.			
Plans				

Iowa State University - as of December 31, 2012

Grow Iowa Values Fund Appropriations

	Board of Regents approved August 2010	**FY 2011 GIVF Appropriation**	**$1,459,200**
1	Commercialization Infrastructure and Campus-Wide Entrepreneurial Cult	$500,000	
2	Commercialization Program	$959,200	

Iowa State University	**Project**	**Total Project Budget**	**Allocated Dollars FY 2011**	**Amount of FY 2011 State Appropriations Expended as of 12/31/2012**
Principal Investigator	Rick Sharp	$99,883	$75,314	$38,826
Description of Project	Efficacy of a new delivery system for B-Hydroxy-B-Methylbutyrate			
Anticipated End Results				
Results achieved to Date	Since the last interim report (July 2011), we have completed our statistical analysis which revealed some promising results but which did not reach statistical significance. Further analysis showed that adding an additional eight research participants would improve the statistical power and help to increase our confidence in the findings. Consequently, we have requested additional funding from the company to test an additional eight participants. This testing will be conducted during spring and summer 2012. A manuscript is currently in preparation with an additional manuscript expected once the added participant testing is completed.			
Plans				

Iowa State University	**Project**	**Total Project Budget**	**Allocated Dollars FY 2011**	**Amount of FY 2011 State Appropriations Expended as of 12/31/2012**
Principal Investigator	Byron Brehm-Stecher (no update received)	$106,961	$91,046	$53,752
Description of Project	Advances in food safety: fast fragment analysis for differentiation and tracking of foodborne pathogens			
Anticipated End Results	Develop improved DNA fragment-based analyses using an advanced capillary electrophoresis platform; to apply this approach to practical problems of pathogen ecology in layer hen and related agricultural environments of critical importance to Iowan agribusiness.			
Results achieved to Date	The project is focused on use of AATI's FS-96 instrument for DNA fragment-based detection and characterization of pathogenic bacteria occurring in layer hen production facilities and other environments of critical importance to Iowan agribusiness. The project is being carried out in close consultation with an Iowan company that is a lead supplier of layer hens to world markets. Additional collaboration in support of this project's technology transfer goals includes partnership with Dr. Hongwei Xin, Director of Iowa State University's Egg Industry Center. In addition to the above list, important milestones for the project include: • Took delivery of FS-96 instrument, valued at $70,000. • Accepted Zongyu Zhang, FSHN PhD student – began work in my lab in May, 2011 This project has served as an essential backdrop for high-visibility collaborative work between the Brehm-Stecher Rapid Microbial Detection and Control Laboratory and Advanced Analytical Technologies, Inc., Specifically: • We have been invited by the editors of Journal of Visualized Experiments to co-author (with AATI) a video article on application of the FS-96 instrument for DNA-fragment-based analyses of Salmonella spp. Experiments for this paper are currently underway. • AATI personnel presented data from this project during the LabAutomation2011 meeting in late January 2011 in a session on high-throughput methods for the analysis of foods, chaired by Dr. Brehm-Stecher. • Dr. Brehm-Stecher was invited to speak at the "Advances In Biodetection & Biosensors" conference to be held in Hamburg, Germany (July, 2011). The conference was held within the greater European Lab Automation meeting. Visit was coordinated with Lutz Büchner, Director of European Operations for Advanced Analytical Technologies. Met with Lutz Büchner and Steve Lasky, CEO of Advanced Analytical Technologies, Inc. during this visit. My talk helped drive interest in AATI's technology, leading to increased traffic to their booth. This visit has enabled us to maximize exposure of our GIVF-funded work with the FS-96 system to potential AATI customers in Europe.			
Plans				

Iowa State University	**Project**	**Total Project Budget**	**Allocated Dollars FY 2011**	**Amount of FY 2011 State Appropriations Expended as of 12/31/2012**
Principal Investigator	Sri Sritharan	$109,000	$106,784	$28,471
Description of Project	Design Verification and cost evaluation of UHPC towers for enhancing Iowa's wind energy production			
Anticipated End Results				
Results achieved to Date	Over the past few months we have been working closely with Clipper, one of our industry partners, to make the tower suitable for commercial use. With new information provided on tower loads and dimension limitations and the request from Clipper to keep the overall cost down with less emphasis on long term performance issues, the tower needed to be redesigned twice. One of the more significant changes that has been made is the transition from Ultra-High Performance Concrete (UHPC) to High Performance Concrete in the tower columns. This dramatically reduces the overall cost of the tower making it much more competitive with other design options available to Clipper. The design still consists of UHPC, but it is used in different components of the tower. In addition, a plan for connecting the tower to the turbine as well as the foundation has been established. A complete computer model of the tower has been developed, and is currently being used to analyze stresses within the tower under extreme and operational loads. After analyzing the results, scaled models will be created in the lab and tested to verify the proposed design. Due to the financial difficulties, Iowa Prestressed Concrete (IPC) has informed us they will not be able to provide the committed support for the project. This has caused delays in the project. We are now talking another precaster in Omaha, Nebraska. We hope to get the necessary support from them to make the experimental phase of the project completed.			
Plans				

Iowa State University - as of December 31, 2012

Grow Iowa Values Fund Appropriations

	Board of Regents approved August 2010	**FY 2011 GIVF Appropriation**	**$1,459,200**
1	Commercialization Infrastructure and Campus-Wide Entrepreneurial Cult	$500,000	
2	Commercialization Program	$959,200	

Iowa State University	**Project**	**Total Project Budget**	**Allocated Dollars FY 2011**	**Amount of FY 2011 Allocation Expended as of 12/31/2011**
Principal Investigator	Vasant Honavar (no update received)	$109,243	$109,243	$22,934
Description of Project	Data mining tools for healthcare informatics			
Anticipated End Results	To demonstrate the feasibility of applying statistically based artificial intelligence algorithms for improving the quality of healthcare.			
Results achieved to Date	No funds have yet been spent on this project because the start of the project was delayed in part because of delay on the part of Collaborative Health Solutions (CHS) in gathering some of the patient data and making it available to the ISU team working on the project and in part because of the delay in obtaining an account number for the project. The account for the project was set up on June 28, 2011.			
Plans				

Iowa State University	**Project**	**Total Project Budget**	**Allocated Dollars FY 2011**	**Amount of FY 2011 State Appropriations Expended as of 12/31/2012**
Principal Investigator	Ayman Fayed	$117,944	$99,665	$95,282
Description of Project	Battery life enhancement in portable and remotely deployed systems using spread-spectrum switching power regulators			
Anticipated End Results	The development of energy-efficient buck switching power regulators using innovative random spread-spectrum control schemes to convert their switching output noise into an analog/RF friendly noise spectrum. This will enable using them to directly power sensitive analog/RF modules in battery-operated portable electronic devices, hence eliminating energy inefficient linear regulators and/or expensive noise filtering. This new technology can result in significant reduction in system power consumption, which translates in extended battery life or reduced number of batteries needed by the system in both military and commercial applications.			
Results achieved to Date	In the past 6 months, we have and received and characterized the testchip we designed for achieving the same low-noise performance we previously accomplished but at light-load conditions. Measurement results demonstrated excellent low-noise performance even at very low-load current. This new controller along with our original high-load controller will enable our converter to achieve very low-noise performance with high efficiency across all load current extremes, which makes our proposed design a viable industry-quality product. The new results have been described in a new manuscript that is currently under review. Furthermore, 2 papers on using the proposed technology with RF and Analog types of loads have been published in the past 6 months. The papers have been well received by the industrial and academic communities and the PI has been invited to present the technology to several companies including National, Texas Instruments, Skyworks, and Micrel.			
Plans				

Iowa State University	**Project**	**Total Project Budget**	**Allocated Dollars FY 2011**	**Amount of FY 2011 State Appropriations Expended as of 12/31/2012**
Principal Investigator	Sanjeevi Sivansankar	$120,075	$107,433	$38,181
Description of Project	Commercialization of an integrated single molecule atomic force microscope-fluorescence microscope for academic and industrial applications			
Anticipated End Results	The objective of this proposal is to build a highly integrated and modular single molecule Atomic Force Microscope-Fluorescence Microscope (smAFM-FM) for academic and industrial applications.			
Results achieved to Date	Since award of the GIVF funding, we have made significant progress in four areas. 1. We have refined the smAFM-FM instrument by introducing a feedback system that improves measurement accuracy. We have also built and tested an instrument module that permits simultaneous AFM-spectral measurements . We have upgraded to a closed-loop AFM to minimize mechanical drifts. 2. We have performed “proof of concept” simultaneous single molecule AFM-spectral measurements. In these experiments, we used smAFM-FM to measure the force dependent of optical properties of CdS/CdSe tetrapod, a technologically important semiconductor nanocrystal. We were able to demonstrate, for the first time in the world, that a single tetrapod changes its optical properties when subjected to an external force. 3. We have begun working with Novascan Technologies to integrate their VErtigo AFM platform on the single molecule fluorescence microscope. When this integration is complete, we will acquire data that will be used for generating sales and marketing material to commercialize the instrument 4. We have recently invented a novel technology, Single Molecule Probe-scanning Standing-wave Optical Nanometry (SiMPSON) for axial localization of a single fluorophore with sub-nanometer accuracy. In a conventional fluorescence microscope, resolution along the z-axis is limited to approximately 500 nm. SiMPSON is an easy to implement technique developed using GIVF funding that can be used to obtain sub-nanometer resolution. We have used SiMPSON to measure the orientation of DNA of different lengths, grafted on surfaces with different functionalities which is important for DNA microarrays and gene sequencing experiments. We have submitted a manuscript based on this work to Nature Methods (the top journal in this field) and are preparing an invention disclosure for ISURF.			
Plans				

Iowa State University - as of December 31, 2012

Grow Iowa Values Fund Appropriations

	Board of Regents approved August 2010	**FY 2011 GIVF Appropriation**	**$1,459,200**
1	Commercialization Infrastructure and Campus-Wide Entrepreneurial Cult	$500,000	
2	Commercialization Program	$959,200	

Iowa State University	**Project**	**Total Project Budget**	**Allocated Dollars FY 2011**	**Amount of FY 2011 Allocation Expended as of 12/31/2011**
Principal Investigator	Arun Somani / Suraj Kothari (no update received)	$77,388	$76,268	$21,892
Description of Project	A programmable software pattern analyzer (PSPA); Critical safety improvement for transportation control systems			
Anticipated End Results	The project is aimed at developing the Programmable Software Pattern Analyzer (PSPA). The PSPA will be useful to discover underlying programming patterns and use those to validate mission-critical software. Specific applications are targeted at two areas of software: (a) the safety-critical control system software such as the flight control software, (b) operating systems at all levels from small systems for smart devices to large systems for cloud computing. The PSPA will offer the programming capability to perform thousands of program analysis instances in few seconds as opposed to several hours it currently takes to do a single instance.			
Results achieved to Date	A query-based programming environment for analyzing software patterns has been developed. To demonstrate the powerful software analysis capability being developed through this project, we did a case study to validate six versions of the Linux kernel for its safety properties. This is the first validation study of this kind that takes into account various complexities including multi-threading and interrupt processing. We have developed a graph-theoretic modeling capability which combined with the programmable analysis capability has enabled a complete validation of highly complex software. This type of validation, as cited in our original proposal, was considered intractable so far. This research is currently being documented through three journal papers. It also helped us in securing a four million dollar grant from DARPA.			

Iowa State University	**Project**	**Total Project Budget**	**Allocated Dollars FY 2011**	**Amount of FY 2011 State Appropriations Expended as of 12/31/2012**
Principal Investigator	Matt Frank	$50,000	$22,626	$22,626
Description of Project	Innovative methods for the manufacturing of patient specific bone implants			
Anticipated End Results	To develop methods for bone implant manufacturing, provide pilot testing results, and move toward commercialization of a software product for surgery planning and rapid implant production.			
Results achieved to Date	This project officially ended in the summer of 2011; however, the above mentioned paper, award, and funding is directly attributed to the GIVF program. In addition to the items above, we have two notable accomplishments in moving toward commercialization. Second, we continued to move forward in forming a company. As of June 2011, FxRedux Solutions, LLC was filed with the State of Iowa and the IRS. Dr. Matt Frank will serve as a co-owner, along with 5 collaborators at the University of Iowa. As of January 1st, 2012, an Operating agreement is in place for the FxRedux Solutions LLC company.			
Plans				

Iowa State University	**Project**	**Total Project Budget**	**Allocated Dollars FY 2011**	**Amount of FY 2011 State Appropriations Expended as of 12/31/2012**
Principal Investigator	Peter Keeling (new project)	$73,000	$73,000	$22,155
Description of Project	Furanics based biorenewable Chemical			
Anticipated End Results	Development of a method for the selective dehydration of glucose and starch to produce furan derivatives such as 5-hydroxymethylfurfural (HMF).			
Results achieved to Date	The proposed project will enable studies of scale-up batch-reactor issues and polysaccharide feedstock evaluation. The results will lead to a detailed business development plan and set-the-stage for second year studies of the techno-commercial potential. These are summarized in the following milestone statements and supporting milestones chart. 1. Comparison of glucose and starch versus fructose catalysis with solvent extraction per Dumesic methods. 2. Kinetics understood and optimized for the conversion of glucose to HMF in a batch reactor system. 3. Kinetics understood and optimized for the conversion of glucose to HMF in a flow reactor system. 4. Build the business development plan. 5. Demonstration of a solid acid catalyst for the conversion of monosaccharides and oligosaccharides to HMF. 6. Evaluation of techno-commercial potential by estimating costs of production in optimized system. 7. Build the business case for a $10m investment in a pilot plant.			

Iowa State University - as of December 31, 2012
Grow Iowa Values Fund Appropriations

Board of Regents approved September 2011 — **FY 2012 GIVF Appropriation** — **$576,000**

1	Commercialization Infrastructure and Campus-Wide Entrepreneurial Culture	$76,000
2	Commercialization Program	$500,000

Iowa State University	Project	List of all FY 2012 Revenue Sources	Revenue Dollars for FY 2012	Amount of FY 2012 State Appropriations Expended as of 12/31/2012
1	**Commercialization Infrastructure and Campus-Wide Entrepreneurial Culture**	FY 2012 State Appropriations (GIVF)	$76,000	$61,668
		FY 2012 Matching Funds (General Fund)	$29,600	
		FY 2012 Matching Funds (In-Kind)		
		FY 2012 Matching Funds (Other)	$26,000	
Description of Project	Infrastructure funds for programming in the ISU Research Park ($26K), Pappajohn Center ($25K and Industry Relations function ($25K) in the VPRED office.			
Purpose	These funds are used to support the general operations of the Research Park, Pappajohn Center and Industry Relations function, including salary support, travel, hosting companies and providing services to entrepreneurs and small businesses located at the research park.			

Iowa State University	Project	List of all FY 2012 Revenue Sources	Revenue Dollars for FY 2012	Amount of FY 2012 State Appropriations Expended as of 12/31/2012
2	**van**	FY 2012 State Appropriations (GIVF)	$500,000	$171,641
		FY 2012 Matching Funds (General Fund)	$120,920	
		FY 2012 Matching Funds (Federal Support)		
		FY 2012 Matching Funds (Cash)		
		FY 2012 Matching Funds (In-Kind)	$105,074	
Principal Investigator	Peter Keeling		$100,000	$20,068
Description of Project	Catalytic Conversion Platform for Furan Derivatives			
Anticipated End Results	The general goal is to evaluate technologies for converting monosaccharides and oligosaccharides to HMF leading to understanding the separation requirements for pre-pilot scale-up.			
Results achieved to Date	Research has focused on examining several purification strategies of 5-hydroxymethylfurfural (HMF) from the organic phase of the biphasic reactor system. Care was taken to only research purification strategies that were potentially feasible at an industrial production scale. After reviewing pertinent literature and examining the chemical properties of the HMF versus the organic extraction phase, humins, and other contaminants, the decision was made to focus on the three means of purification; distillation, adsorption onto a solid phase, and liquid-liquid extraction. We were able to achieve moderate success employing distillation and adsorption separation strategies. With HMF reactivity at high temperatures, the removal of a low boiling point organic extraction solvent proved to be the best distillation option. A scheme was devised for purification of HMF using adsorbent polar resins. This strategy must be developed further before it can become a practical process at scale. The third means of HMF purification was by liquid-liquid extraction with water from the post reaction organic extraction phase. HMF has high solubility in pure water. The salts and solvents used during the glucose to HMF dehydration reaction helps to facilitate the separation of the liquid phases and lower the solubility of HMF in the aqueous phase. All three purification strategies could be viable options at production scale. Other factors in the production process of HMF will undoubtedly dictate the direction of HMF separation research.			

Iowa State University - as of December 31, 2012
Grow Iowa Values Fund Appropriations

Board of Regents approved September 2011 — **FY 2012 GIVF Appropriation** — **$576,000**

1 Commercialization Infrastructure and Campus-Wide Entrepreneurial Culture $76,000
2 Commercialization Program $500,000

Principal Investigator	Anumantha Kanthasamy	$29,000	$12,281
Description of Project	Small Molecule Non-receptor Tyrosine Kinase Inhibitors as Novel Neuroprotective Agents		
Anticipated End Results	We propose to develop an orally active neuroprotective drug for the treatment of Parkinson's disease in humans. The goals of this high impact exploratory study are to identify one or more novel RM108 derivatives that have low-nanomolar potency, minimal off-target effects, metabolically stable and drug-like properties to initiate future advanced preclinical studies.		
Results achieved to Date	Review panel in July 2012 suggested that the Fyn kinase target for Parkinson's disease should be further validated by testing the lead Fyn kinase inhibitor RM108 in the Fyn kinase knockout mouse model. This will help us to determine any potential off target effect of our lead compound in animal models of PD. The results from this pilot study revealed that Fyn (-/-) knockout were significantly resistant to MPTP-induced neurotoxicity compared to Fyn (+/+) mice. Further, RM108 improved MPTP-induced a) motor deficits (Fig. b) restored dopamine depletion, and c) rescued TH neuronal loss in Fyn (+/+) mice. On the other hand, RM108 did not have any protective in MPTP-treated Fyn (-/-). In summary, results from this PCI funded pilot study revealed that RM108 may primarily mediates all its neuroprotective effect via Fyn kinase and not possibly via other closely related non-receptor kinases in MPTP animal PD model. These results also strongly support Fyn kinase as a valid therapeutic target in PD. Although RM108 interrupts disease mechanisms, rather than just treat disease symptoms, it's poor physical properties and clear. Experiments are in progress to synthesis additional analogs that would have low-nanomolar potency, minimal off-target effects, metabolically stable and drug-like properties to initiate preclinical studies. Commercialization: 1. A provisional patent application is currently being filed by the inventors. 2. PK Biosciences is in process of forming a scientific and business advisory board which will assist by reviewing and advising on primary development decisions as the company moves forward to discuss with VCs and pharmaceuticals.		
Principal Investigator	Arunkumar Asaithambi	$93,406	$41,875
Description of Project	Identification and Characterization of Diabetes Drug Candidates for Type I Diabetes		
Anticipated End Results	Identifying lead candidates for type 1 diabetes treatment		
Results achieved to Date	We have made good progress in our studies to identify potential drug candidates for type 1 diabetes. Our data so far have shown that drug candidates rationally designed against key drug targets slows down type 1 diabetes (T1D) in preliminary pre-clinical animal models. We see reduction in hyperglycemia, pancreatic beta cell death and weight loss in widely used acute T1D mouse models etc. Studies are currently being undertaken to characterize the efficacy of these screened candidates in another key FDA approved pre-clinical animal model. Further, preliminary specificity, selectivity and toxicity of these candidates are also being tested. These studies will complete the specific aims listed in the GIVF proposal. The goal of this GIVF project is to facilitate Signal Therapeutics to rise early stage funding and move these drug candidates towards commercialization. We are in active discussions with several early stage angels and VCs to obtain series A financing for Signal Therapeutics Inc. If successful, Signal will move towards further advancement of these drug candidates towards FDA application. We also have started communications with Juvenile Diabetes Research Foundation (JDRF) regarding possible collaboration. Overall, we are having a steady progress towards achieving our research and financial objectives.		
Principal Investigator	Zhiyou Wen	$50,000	$43,315
Description of Project	Development and Optimization of a Pilot-Scale Revolving Algal Biofilm Photobioreactor		
Anticipated End Results	To develop a novel attached algal culture system (Revolving Algal Biofilm Photobioreactor, RABP) for facilitating algal biomass harvest during algal biofuel production process.		
Results achieved to Date	This project is focused on developing a novel biofilm based photobioreactor (Revolving Algal Biofilm Photobioreactor, RABP) which can be widely adapted by the algae industry for producing fuels and high value products. The RABP reactor can facilitate algal biomass harvest by reducing the harvest cost, which is a major bottleneck in the commercialization of algal biofuel production. In the reporting period, we have performed a thorough lab-scale study optimize the RABP operational conditions, so the algal biomass production yield can be reached to maximum. First, we evaluated a total 64 types of materials in terms of their capability of attaching algal cells, and found that duct cotton is the best materials because this material can attach the highest amount of algal cells on its surface and its excellent durability. Then, using the duct cotton as the attaching materials, we optimized the rotation speed of the RABP system, the algal biomass harvest frequency, and the CO2 concentration used in the RABP system. Those optimization works lay the ground for developing a pilot scale RABP system for evaluating its commercial potential. In the development of the pilot-scale RABP system, we constructed a green house in the BioCentury Research Farm in the reporting period, so the RABP system can be accommodated in the greenhouse for a year round operation. The greenhouse was a high premium facility with all the utilities and temperature control by a geothermal unit. Four RABP systems was then fabricated and assembled in the greenhouse. So far we have tested the operation of these pilot RABP systems using water as testing medium. The result shows that the pilot scale RABP system can replicate the conditions used in the lab-scale study. In the remaining project period, we will test the real algal culture using the pilot scale RABP system.		

Iowa State University - as of December 31, 2012
Grow Iowa Values Fund Appropriations

Board of Regents approved September 2011 **FY 2012 GIVF Appropriation** **$576,000**

1	Commercialization Infrastructure and Campus-Wide Entrepreneurial Culture	$76,000
2	Commercialization Program	$500,000

Principal Investigator	Rick Sharp	$99,844	$24,521
Description of Project	Nutritional Intervention for Age-Related Muscular Function and Strength Losses		
Anticipated End Results	Examine the effectiveness of vitamin D plus hydroxyl-methylbutyrate dietary supplementation in promoting muscle strength and functionality improvements in older adults during 12 weeks of a strength		
Results achieved to Date	Our original proposal was to recruit and test 50 research participants (25 men, 25 women) above 60 yr of age from the central Iowa area. At present, we have completed 32 individuals. Because this research involves dietary supplementation, the interventions must be conducted double blind. Consequently, we must wait until all participants have completed the protocol before evaluating effectiveness. We continue to recruit participants using targeted mailings to households in Ames, Boone and Gilbert. We anticipate completing this data collection phase by May, 2013. At this time, we will be able to analyze results, publish papers and begin the Phase II project with full support from the NIH (Phase II has received preliminary approval from NIH).		
Principal Investigator	Tom McGee	$92,074	$29,582
Description of Project	Osteoceramic Bone Graft Pre-Clinical Evaluation for FDA Approval		
Anticipated End Results	Determine the effect of OsteoCeramics ceramic implant (OC-Ceramic) on bone regeneration in a rabbit tibial defect model through the use of plain radiography, pqCT, histology, and mechanical testing.		
Results achieved to Date	OC-Ceramic has potential for use as artificial off-the-shelf bone grafts to replace currently used materials and has advantages of being able to help guide bone growth and bone promote attachment to the implant to prevent mechanical failure seen with current implants. FDA approval will be required before the OC-Ceramic material can be used in humans. This GIVF project is directed at pre-clinical evaluation on rabbits performed at the Bone Healing Research Lab-Iowa Spine Research Center (BHRL/ISRC), Department of Orthopaedics and Rehabilitation, University of Iowa Carver College of Medicine. The evaluation includes two time points (6 and 8 weeks) in a rabbit tibial defect model. Preliminary results from the 6 week time point indicate that the OC-Ceramic material has better strength than control material (natural bone graft taken from the patient). Results from the 8 week time period are being tabulated, and it is anticipated that the results from these two time points will provide the evidence necessary to submit a proposal to the FDA for 510(K) approval. Because of the promising results obtained to date, a submission of a proposal to the FDA is planned for January 2013.		
Principal Investigator	Eliot Winer	$35,000	$0
Description of Project			
Anticipated End Results			
Results achieved to Date	This project was just recently funded and is being supported by both GIVF and RIF funds. No report was provided due to the recent implementation		

Iowa State University - as of December 31, 2012
Innovation Fund Appropriations

	Board of Regents approved September 2012	**FY 2013 Innovation Fund Appropriation**	**$1,050,000**
1	Commercialization Infrastructure and Campus-Wide Entrepreneurial Culture and SBDC	$350,000	
2	Commercialization Program	$500,000	
3	Infrastructure Projects and Programs	$200,000	

Iowa State University	**Project**	**List of all FY 2013 Revenue Sources**	**Revenue Dollars for FY 2013**	**Amount of FY 2013 State Appropriations Expended as of 12/31/2012**
1	**Commercialization Infrastructure and Campus-Wide Entrepreneurial Culture**	FY 2013 State Appropriations (INNOV)	$350,000	$122,323
		FY 2013 Matching Funds (General Fund)	$66,511	
		FY 2013 Matching Funds (In-Kind)		
		FY 2013 Matching Funds (Cash)	$8,531	
Description of Project	See Individual Projects			
Plans				
Iowa State University	**Project**	**Total Project Budget**	**Allocated Dollars FY 2013**	**Amount of FY 2013 State Appropriations Expended as of 12/31/2012**
Unit	ISU Research Park		$75,000	$74,847
Purpose	Support for the operations of the ISU Research Park.			
Iowa State University	**Project**	**Total Project Budget**	**Allocated Dollars FY 2013**	**Amount of FY 2013 State Appropriations Expended as of 12/31/2012**
Unit	ISU Pappajohn Center		$100,000	$46,458
Purpose	Provide Support fo the entrepreneurial programs at Iowa State including services for start-up companies			
Iowa State University	**Project**	**Total Project Budget**	**Allocated Dollars**	**Amount of FY 2013 State Appropriations**
Unit	Biobased Foundry Piilot Project		$50,000	$0
Purpose	Foster entrepreneurship on campus by engaging graduate students in an immersive entrepreneurial experience. The course is offered in the Spring			
Iowa State University	**Project**	**Total Project Budget**	**Allocated Dollars FY 2013**	
Unit	Vice President for Research		$20,000	$0
Purpose	These funds support the general operations of the industry relations function at Iowa State such as efforts related to the regional marketing effort s with Ames and Des Moines, support for trade show booths/materials/attendance, company visits, association membership fees, etc.The Regents Innovaiton Fund commercialization program is administered in the VPRED office as well as efforts to coordinate industry relations and other tech transfer activities across campus.			
Unit	Small Business Development Center		$105,000	$15,242
Purpose				

Iowa State University - as of December 31, 2012
Innovation Fund Appropriations

	Board of Regents approved September 2012	**FY 2013 Innovation Fund Appropriation**	**$1,050,000**
1	Commercialization Infrastructure and Campus-Wide Entrepreneurial Culture and SBDC	$350,000	
2	Commercialization Program	$500,000	
3	Infrastructure Projects and Programs	$200,000	

Iowa State University	**Project**	**List of all FY 2013 Revenue Sources**	**Revenue Dollars for FY 2013**	**Amount of FY 2013 State Appropriations Expended as of 12/31/2012**
2	**Commercialization Program**	FY 2013 State Appropriations (INNOV)	$500,000	$0
		FY 2013 Matching Funds (General Fund)		
		FY 2013 Matching Funds (Federal Support)		
		FY 2013 Matching Funds (Cash)		
		FY 2013 Matching Funds (In-Kind)		
Principal Investigator	Byron Brehm-Stecher		$50,000	$0
Description of Project				
Anticipated End Results				
Results achieved to Date	This project was recently implemented			

Iowa State University	**Project**	**Total Project Budget**	**Allocated Dollars FY 2013**	**Amount of FY 2013 State Appropriations Expended as of 12/31/2012**
Principal Investigator	Anumantha Kanthasamy		$50,000	$0
Description of Project	Small Molecule Non-receptor Tyrosine Kinase Inhibitors as Novel Neuroprotective Agents (Continuation)			
Anticipated End Results				
Results achieved to Date	Phase II of the GIVF FY12 funded project, newly implemented			

Iowa State University	**Project**	**Total Project Budget**	**Allocated Dollars FY 2013**	**Amount of FY 2013 State Appropriations Expended as of 12/31/2012**
Principal Investigator	Eliot Winer		$15,000	$0
Description of Project				
Anticipated End Results				
Results achieved to Date	This project was recently implemented and funds were allocated from both GIVF FY12 and RIF FY13			

Iowa State University	**Project**	**List of all FY 2013 Revenue Sources**	**Revenue Dollars for FY 2013**	**Amount of FY 2013 State Appropriations Expended as of 12/31/2012**
3	**Infrastructure Projects and Programs**	FY 2013 State Appropriations (INNOV)	$200,000	$0
		FY 2013 Matching Funds (General Fund)		
		FY 2013 Matching Funds (Federal Support)		
		FY 2013 Matching Funds (Cash)		
		FY 2013 Matching Funds (In-Kind)		
Principal Investigator				
Description of Project				
Anticipated End Results				
Results achieved to Date	Due to a change in VPRED at Iowa State, no funds have been allocated from this. We anticipate allocating funds soon.			

University of Northern Iowa - as of December 31, 2012
Regents Innovation Fund

		FY 2013 RIF Appropriation - $900,000	
1	Economic Gardening and Entrepreneurship Outreach	$300,000	
2	Technology Transfer and Business Incubation	$300,000	
3	Regional Development	$100,000	
4	Competitive and Market Intelligence	$50,000	
5	National Ag-Based Lubricants (NABL) Center	$150,000	$900,000.00

University of Northern Iowa	Project	List of all FY 2013 Revenue Sources	5907 Revenue Dollars for FY 2012-2013	Amount Expended as of 12/31/2012
1	Economic Gardening and Entrepreneurial Outreach	FY 2013 Regents Appropriations (RIF)	$300,000	$85,863
		FY 2013 Federal Support		$16,502
		FY 2013 Other		$91,195
Description of Project	UNI Entrepreneurship Outreach proposes to launch a statewide Economic Gardening (EG) program in Iowa to address a compelling need among smaller, locally-owned employer firms for actionable business intelligence and support. UNI will create and certify a strategic research team in accordance with the National Center for Economic Gardening to provide Stage II companies (those with 9-99 employees) with secondary market research and business intelligence.			
Anticipated End Results	The Iowa Economic Gardening Network will be formalized, participating organizations certified, and 50-75 Stage II clients identified for service delivery during calendar year 2013. At least 12 companies will receive expert research team services during the pilot phase between January and June of 2013. Three of MyEntre.Net's entrepreneur resources will be transformed into customizable technology modules increasing overall small business use from 2,000 annually to 2,500. Dream Big Grow Here will expand to ten contests and attract 250 contestants.			
Results Achieved to Date	A pilot program for Economic Gardening has been launched as an advance effort for a statewide program. A Strategic Resource Team has been certified and twelve economic development organizations from throughout Iowa have been trained in EG and have begun referring Stage II business clients for services. Given the smaller pilot scale, approximately 12 companies will be served before June 30, 2013 with EG services and networked services formalized through the pilot. Ten Dream Big Grow Here contests were hosted in the fall of 2013. An additional four regional hosts were placed on a waiting list. The ten contests served entrepreneurs in 66 counties, attracted 225 contestants and generated 100,000 online votes and comments over a four week period. Regional winners will complete in a Pitch-Off event during EntreFest in 2013 in Cedar Rapids, Iowa. Work continues on scaling three MyEntre.Net resources. The Dream Big Grow Here technologies are fully scaled and two others are underway.			
Plans	Economic gardening projects will be conducted for 15 stage II companies in collaboration with local economic developers. MyEntre.Net resources will be reconfigured into stand alone program modules. These will include Dream Big Grow Here, Business Concierge and Webinars. The sixth annual EntreFest will be held in Cedar Rapids, Iowa on March 7th and 8th, 2013.			

University of Northern Iowa - as of December 31, 2012
Regents Innovation Fund

		FY 2013 RIF Appropriation - $900,000	
1	Economic Gardening and Entrepreneurship Outreach	$300,000	
2	Technology Transfer and Business Incubation	$300,000	
3	Regional Development	$100,000	
4	Competitive and Market Intelligence	$50,000	
5	National Ag-Based Lubricants (NABL) Center	$150,000	$900,000.00

University of Northern Iowa	Project	List of all FY 2013 Revenue Sources	5906 Revenue Dollars for FY 2012-2013	Amount Expended as of 12/31/2012
2	Technology Transfer and Business Incubation	FY 2013 Regents Appropriations (RIF)	$300,000	$50,411
		FY 2013 Federal Support		
		FY 2013 Other		$122,629
Description of Project	UNI continues to advance intellectual property disclosures, protection and commercialization across campus. Strategies for commercialization include licensing, strategic partnerships and new business development. The Innovation Incubator has created a hub facility, coalescing the existing strength of Intellectual Property disclosures and University research with quality business services to support business incubation and growth. The incubator and support facilities offer a physical link between the Iowa business community, campus innovators and faculty researchers to enhance technology transfer. UNI will be forging a formal agreement with the ISU Research Foundation to assist and guide commercialization activities and starting discussions with the University of Iowa Research Foundation.			
Anticipated End Results	UNI expects ten disclosures, two patent applications and two license agreements. UNI's incubator will remain full and graduate 4-5 businesses into the regional economy and launch 15 student businesses in the JPEC student Business Incubator. Five late stage faculty research projects will also be assisted. Formal agreements with ISURF and UIRF will be completed.			
Results Achieved to Date	During the first half of FY 2013, five disclosures were received with two moving toward commercialization. UNI has begun active collaboration with the ISU Research Foundation, receiving due diligence technical assistance on four technologies. The Innovation Incubator is full and three companies have recently graduated into the regional economy with one of the companies a former tenant in the Student Business Incubator. The Innovation Incubator conducted a regional BarCamp event, which attracted more than 100 participants to the incubator and led a joint Cedar Valley/UNI Innovation Day with the announcement of the Dream Big Grow Here winner. Another faculty spin-off was started in the past 6 months and a license agreement has been signed with an Iowa company.			
Plans	UNI will continue to focus on commercialization initiatives, including license negotiations and business start ups. At least ten intellectual property disclosures will be received with two licensing agreements executed under patent or trade-secret provisions and UNI will conduct a faculty research grant competition. In addition, the Student Business Incubator and Innovation Incubator will remain full, generating spin-off companies for the Iowa economy. UNI will also expand its corporate research and development program to assist existing businesses in Iowa.			

University of Northern Iowa - as of December 31, 2012
Regents Innovation Fund

		FY 2013 RIF Appropriation - $900,000	
1	Economic Gardening and Entrepreneurship Outreach	$300,000	
2	Technology Transfer and Business Incubation	$300,000	
3	Regional Development	$100,000	
4	Competitive and Market Intelligence	$50,000	
5	National Ag-Based Lubricants (NABL) Center	$150,000	$900,000.00

University of Northern Iowa	Project	List of all FY 2013 Revenue Sources	5909 Revenue Dollars for FY 2012-2013	Amount Expended as of 12/31/2012
3	Regional Development	FY 2013 Regents Appropriations (RIF)	$100,000	$47,925
		FY 2013 Federal Support		$3,402
		FY 2013 Other		$45,158
Description of Project	IDM will lead an effort to assess and structure Iowa's regions for economic growth. This will include asset mapping to determine regional strengths and linkages and thereby outline the most appropriate regional boundaries. In partnership with the Iowa Economic Development Authority (IEDA), Regent universities, community colleges, utilities, Professional Developers of Iowa (PDI) and the Iowa Department of Education, IDM will enhance the Business Expansion & Strategic Trends (BEST) of Iowa program.			
Anticipated End Results	Making recommendations for reorganizing Iowa's Regions focusing on mapping regional strengths and linkages, propose new regional boundaries and suggest best practices for overall structure and leadership. Outline key benefits of regional development and assist Professional Developers of Iowa with communications and implementation.			
Results Achieved to Date	IDM has helped organize Regionalism 2.0 and conducted multiple planning meetings with PDI and steering committee members. In addition, regional asset mapping is underway. IDM worked with IWD to complete regional asset maps for four regions. IDM partnered with utility companies and economic development service providers to update the Synchronist existing industry survey and helped local development organizations conduct more effective existing industry programs. Entrepreneurial community projects were launched in two regions to integrate entrepreneurship into the regional economy.			
Plans	IDM will lead a process for developing a new set of economic boundaries to help restructure and reenergize regions across the state. IDM will continue supporting regional targeting, marketing, organizational management and planning efforts as requested. IDM will participate in the Business Expansion and Strategic Trends (BEST) of Iowa program and expand the Entrepreneurial Communities Project to enhance and increase entrepreneurship initiatives in regional economic development. Working with the BEST of Iowa Partnership, IDM will enhance the data collection and analysis process.			

University of Northern Iowa - as of December 31, 2012
Regents Innovation Fund

		FY 2013 RIF Appropriation - $900,000	
1	Economic Gardening and Entrepreneurship Outreach	$300,000	
2	Technology Transfer and Business Incubation	$300,000	
3	Regional Development	$100,000	
4	Competitive and Market Intelligence	$50,000	
5	National Ag-Based Lubricants (NABL) Center	$150,000	$900,000.00

University of Northern Iowa	Project	List of all FY 2013 Revenue Sources	5910 Revenue Dollars for FY 2012-2013	Amount Expended as of 12/31/2012
4	Competitive and Market Intelligence	FY 2013 Regents Appropriations (RIF)	$50,000	$25,339
		FY 2013 Federal Support		
		FY 2013 Other		$25,410
Description of Project	Strategic Marketing Services (SMS) will develop and manage a competitive and market intelligence program for mid-sized Iowa companies. The purpose of devoting RIF investments to competitive and market intelligence projects is to expand economic growth across Iowa by stimulating business expansion opportunities. Accurate information is needed to make sound market entry or expansion decisions. Gathering and using data to make decisions is what SMS provides. Established businesses will be required to pay at least one-half of their project cost. SMS expects to assist at least five Iowa companies with advanced competitive and market intelligence projects. Priority will be given to businesses in the state's target industry clusters.			
Anticipated End Results	SMS will complete five competitive intelligence projects to expand market share, increase profitability and expand the workforce and market research projects for smaller Iowa companies and new startups and five market feasibility assessments for technology transfer.			
Results Achieved to Date	So far this year SMS has used $10,000 of RIF dollars to conduct a project for IMT in Garner, Iowa that has a total project cost of $26,856. SMS is currently conducting a project for Xmicrobials which has changed its name to Clean Water Technologies. Total project cost is $15,682 of which $7,841 will be paid with RIF dollars. A third project was for a startup technology company - iTracking Research Inc. where $5,000 of RIF funds were used to match a $5,000 investment by the company. SMS also developed a market research plan for Casey's General Stores at a cost of $2,000 to RIF.			
Plans	SMS will continue to consult with Iowa businesses, entrepreneurs, statewide associations and local governments to conduct competitive intelligence and develop market research plans. In some cases, the client may wish to undertake some or all of the research activities on their own, utilizing the market research plan as a guide. The final piece of competitive and market intelligence assistance will be devoted to phase one market research feasibility assessments for the technology transfer process.			

University of Northern Iowa - as of December 31, 2012
Regents Innovation Fund

		FY 2013 RIF Appropriation - $900,000	
1	Economic Gardening and Entrepreneurship Outreach	$300,000	
2	Technology Transfer and Business Incubation	$300,000	
3	Regional Development	$100,000	
4	Competitive and Market Intelligence	$50,000	
5	National Ag-Based Lubricants (NABL) Center	$150,000	$900,000.00

University of Northern Iowa	Project	List of all FY 2013 Revenue Sources	5908 Revenue Dollars for FY 2012-2013	Amount Expended as of 12/31/2012
5	National Ag-Based Lubricants (NABL) Center	FY 2013 Regents Appropriations (RIF)*	$150,000	$0*
		FY 2013 Federal Support		$15,000
		FY 2013 Other		
Description of Project	NABL will evaluate and enhance microwave lubricant production technology by partnering with Cedar Rapids-based companies (Marion Mixers and AMTek) to investigate the effectiveness and economics at pilot-scale production levels of a new microwave-based lubricant production technology. NABL will conduct fundamental research activities including ongoing development of a Continuous Oil Recirculation System (CORS) incorporating biobased oils and derivatives into the diesel engine crankcase. NABL will support Iowa's biobased products Industry through active participation with industry organizations and provide appropriate standardized testing methods and industry compliance to help prevent sub-par products from entering the marketplace, thus protecting consumers, end-users and producers.			
Anticipated End Results	NABL will refine the microwave lubricant production technology, provide fee-based testing services to at least five biolubricant and/or biofuels industry clients and develop or enhance at least three vegetable oil base products.			
Results Achieved to Date	To date, NABL has provided oil testing services to three industry clients, leading to two ongoing product development research relationships with major biofuels and agriculture industry partners. NABL's patent pending microwave-based grease processing technology has been licensed to Marion Mixers in Marion, Iowa and the technology has been refined. Progress is being made in the CORS diesel engine test cell set up and configuration with key support from a major agriculture equipment manufacturer. Local code review and engineering drawings are currently in progress. NABL led working groups at national and international-level lubricants industry association conferences to advocate for biobased lubricant product standards and industry acceptance.			
Plans	The NABL Center will continue to collaborate with industry partners on development of full-scale microwave-based biolubricant manufacturing processes and equipment, measure and evaluate final product quality differences and identify major cost drivers in vegetable lubricant processes for comparison of microwave vs. traditional methods. New research work investigating the isolation of specific fatty acids such as lubricant feedstocks, coupled with new derivatives of soybean and other oilseeds, will continue and shows potential for expanded value-added activities in Iowa's biobased products manufacturing industry. NABL will participate with industry organizations to provide appropriate standardized testing methods and compliance.			

*NABL is finalizing a grant extension with the US Department of Energy. Regents Innovation Funds will be used as a match when the grant is approved. All RIF funds will be expended by the end of the fiscal year.

GIVF Contracts Summary sheet

			FY Award	Board Approval Date	Date Contract Signed	Exhibit B Total Project amount	Contract Amount	Exhibit E Reimbursements to Date	Remaining Award	Match to Date	Remaining Project	Exhibit C Semi-Annual Report 1 Due	Semi-Annual Report 1 Recvd	Exhibit C Semi-Annual Report 2 Due	Semi-Annual Report 2 Recvd	Exhibit C Semi-Annual Report 3 Due	Semi-Annual Report 3 Recvd
Drake University	Jayne M. Smith, Director, Sponsored Programs	jayne.smith@drake.edu	FY 2011	Dec-10	2/23/2011	$ 362,000.00	$ 112,000.00	$ 76,008.64	$ 35,991.36	$ 250,000.00	$ 35,991.36	08/15/11	N/A	02/15/12	02/13/12	08/15/12	N/A
Luther College	Bradley Chamberlain, Assistant Professor	chambr01@luther.edu	FY 2011	Dec-10	5/16/2011	$ 129,044.00	$ 40,000.00	$ 40,000.00	$ -	$ -	$ 89,044.00	08/15/11	N/A	02/15/12	N/A	08/15/12	N/A

			FY Award	Board Approval Date	Date Contract Signed	Exhibit B Total Project amount	Contract Amount	Exhibit E Reimbursements to Date	Remaining Award	Match to Date	Remaining Project	Exhibit C Semi-Annual Report 1 Due	Semi-Annual Report 1 Recvd	Exhibit C Semi-Annual Report 2 Due	Semi-Annual Report 2 Recvd	Exhibit C Semi-Annual Report 3 Due	Semi-Annual Report 3 Recvd
Central College	Russell Benedict	BenedictR@central.edu	FY 2012	Feb-12	6/11/2012	$ 33,041.00	$ 10,000.00	$ 1,722.40	$ 8,277.60	$ -	$ 31,318.60	08/15/12	08/13/12	02/15/13		08/15/13	
Grand View	Corbin Zea	CZea@grandview.edu	FY 2012	Feb-12	4/9/2012	$ 97,831.00	$ 45,900.00	$ 41,066.00	$ 4,834.00	$ 50,000.00	$ 6,765.00	08/15/12		02/15/13		08/15/13	

Drake University	**Award**	**$ 112,000.00**	**Budgeted Match**	**$ 250,000.00**	**Project Budget**	**$ 362,000.00**
Total GIVF Reimbursements Approved:		$76,008.64	**Reported Match:**	$250,000.00	**Project Total**	$326,008.64

amendment to ending date of 12/31/2012

Expenses Submitted

Date Submitted	Amount Requested	Amount Approved	Date Approved
02/13/12	$1,120.70	$1,120.70	11/10/11
04/10/12	$1,050.01	$1,050.01	04/10/12
06/18/12	$54,880.41	$54,880.41	06/18/12
08/13/12	$3,525.31	$3,525.31	08/13/12
11/13/12	$15,432.21	$15,432.21	11/13/12

Match Funds Reported

Date Reported	Match Amount
2/15/2012	$ 250,000.00

Reporting Period	Total Reported
	$251,120.70
	$1,050.01
	$54,880.41
	$3,525.31
	$15,432.21
Total Reported	**$326,008.64**

In December 2008, Drake University received a $60,000 GIVF grant to establish the Pharmacogenomics Training and Research Laboratory (PTRL). Pharmacogenomics is a discipline of health science related to the manner in which genes affect individual responses to drugs, presenting an opportunity to customize treatment or therapies for diseases such as breast cancer and leukemia. The PTRL will serve as a central facility for Drake faculty involved in research, and on a fee basis for organizations outside the University. The facility is intended to foster the development of intellectual property as a result of the research conducted.

This proposal will expand the technical capabilities of PTRL for training current and future health care professionals in the identification and characterization of protein biomarkers for application in personalized medicine.

Luther | **Award** | **$ 40,000.00** | **Budgeted Match** | **$ (40,000.00)** | **Project Budget** | **$ -** | New Corn-Based Plastics from Two Different Polymerization Technologies

Total GIVF Reimbursements Approved: $40,000.00 | **Reported Match:** $0.00 | **Project Total** $ 40,000.00

Expenses Submitted

Date Submitted	Amount Requested	Amount Approved	Date Approved
07/21/11	$8,884.60	$8,884.60	07/21/11
10/27/11	$10,204.46	$10,204.46	10/31/11
01/27/11	$4.67	$4.67	02/01/12
04/20/12	$112.46	$112.46	04/20/12
07/24/12	$20,793.81	$20,793.81	07/24/12

Match Funds Reported

Date Reported	Match Amount	Reporting Period	Total Reported
			$8,884.60
			$10,204.46
			$4.67
			$112.46
			$20,793.81
		Total Reported	**$ 40,000.00**

The proposal seeks funds for research into the use of cyclodextrins as a new and potentially less expensive method of detecting furans, diozanes and polychlorinated biphenyls which can pollute water systems. The researcher believes a low-cost, effective detection method could be commercialized and, once proven, could be expanded to detect other forms of chemical pollutants. The research indicates that the results of the project will be shared with environmental regulatory agencies.

Central College	**Award**	**$ 10,000.00**	**Budgeted Match**	**$ 23,041.00**	**Project Budget**	$ 33,041.00
Total GIVF Reimbursements Approved:		$1,722.40	**Reported Match:**	$0.00	**Project Total**	$ 1,722.40

Expenses Submitted

Date Submitted	Amount Requested	Amount Approved	Date Approved
11/07/12	$1,722.40	$1,722.40	11/07/12

Match Funds Reported

Date Reported	Match Amount	Reporting Period	Total Reported
			$1,722.40
			$0.00
			$0.00
		Total Reported	**$ 1,722.40**

Prairies for Agriculture Project

This proposal seeks to reconstruct an endangered ecosystem in a manner that provides economic opportunities for farmers, ranchers, and other members of the public. The research team will examine and demonstrate the benefits of restoring prairie ecosystems within the agricultural landscape by planting over 375 plots with different combinations of prairie plants. The broad goal of the research is to determine which specific mixes of plants provide the most biomass for fuel/forage production while simultaneously producing the most agricultural and environmental benefits. The research site will also be used for demonstration purposes to educate agricultural producers, business people, government officials and the public on the potential of prairies.

The Prairies for Agriculture Project has worked with the Tallgrass Prairie Center at the University of Northern Iowa to ensure that this proposed project will compliment and not duplicate research currently being done at UNI. The research team will also collaborate with Iowa State University by sending Central College students to ISU to study the use of pyrolysis to convert biomass into energy.

Grand View	Award	$ 45,900.00	Budgeted Match	$ 51,931.00	Project Budget	$ 97,831.00
	Total GIVF Reimbursements Approved:	$41,066.00	Reported Match:	$50,000.00	Project Total	$ 91,066.00

Expenses Submitted

Date Submitted	Amount Requested	Amount Approved	Date Approved
06/06/12	$49,940.96	06/06/12	

Match Funds Reported

Date Reported	Match Amount	Reporting Period	Total Reported
8/13/2012	$50,000.00		$91,066.00
			$0.00
			$0.00
		Total Reported	$ 91,066.00

Proposal: Probing Substrate Level Inhibition of Phosphorylase *b*: Implications Toward Diabetes Regulation

This proposal will seek the synthesis of novel oligosaccharide-4 phosphate derivatives which will provide a better understanding of substrate inhibition for glycogen degradation in phosphorylases. It is anticipated that the outcomes of this research will make a substantive contribution to the design of active site inhibitors of phosphorylase *b*. This will lead to a better understanding of how to design inhibitors to control glycogen degradation and new treatments for diabetes.