

**Contact: Keith Saunders**

**2010 ECONOMIC DEVELOPMENT AND TECHNOLOGY TRANSFER REPORT**

**Actions Requested:** Consider recommending the following to the Board:

- 1) Receive the report.
- 2) Direct that this report and copies of complete institutional reports be forwarded to the Secretary of Senate, the Chief Clerk of the House of Representatives, the Legislative Services Agency, and the Office of the Governor and the Director of the Iowa Department of Economic Development pursuant to Iowa Code Chapters 262B.3, HF 809 (2005 Session) and HF 2459 (2006 Session).

**Executive Summary:**

The Regents universities promote the economy of Iowa most notably by providing higher education to the people of the state. The universities also make a significant contribution to the Iowa economy by conducting academic research that results in intellectual property and applications available to the marketplace and by providing expertise and assistance directly to Iowa's people, industry and communities. The University of Iowa (SUI), Iowa State University (ISU) and the University of Northern Iowa (UNI) thus support the economy of Iowa primarily through their core missions, and their economic contributions to the state are fundamentally linked to their overall academic excellence.

This core mission was supported by \$896.7 million in funding sponsored by federal and corporate sources in FY 2010. This funding provided the basis on which the Regents universities conducted a wide variety of economic development programs that produced the following results in the past year:

- 189 new intellectual property disclosures
- 141 patent applications
- 129 new patents awarded
- 121 new license and option agreements on intellectual property
- 400 total license and option agreements yielding income
- \$36.5 million in royalty and fee income
- \$62.7 million in revenue generated by Iowa companies as a direct result of university technologies
- 2,829 Iowans employed at 135 companies at the SUI, ISU and UNI research parks and incubators

State funding of ongoing economic development programs at the universities has declined by 55% comparing FY 2001 to FY 2010. Grow Iowa Values Fund appropriations to the universities in FY 2010 are 10% lower than the original FY 2005 authorization.

**Selected 2010 Economic Development and Technology Transfer Highlights**

Occupancy has reached nearly 60% for SUI's new BioVentures Center, a 35,000 square foot state-of-the-art biosciences incubator providing laboratory facilities to support companies commercializing faculty research. The University of Iowa's Technology Innovation Center, which provides office space and a nurturing business environment to new technology companies that do not need wet lab space, has an occupancy rate of 83%.

Companies licensing technologies originated at ISU reported sales of \$58 million as a result of those technologies.

UNI's three incubator/accelerator programs and MyEntreNet helped start or expand 179 ventures, creating 263 jobs.

The SUI Research Park reports 2,010 employees living in 100 communities in 29 Iowa counties with an annual payroll of nearly \$100 million, generating \$5.7 million in state income taxes.

Companies receiving technical assistance from ISU's Institute for Physical Research and Technology reported that over the last five years, \$11.6 million in increased sales, increased investments or reduced operating costs as a result of the assistance. The companies also estimated over thirty jobs were created or retained each year from 2005-2009, with 14 jobs retained or created from projects surveyed in the past year when many employers were cutting jobs.

More than 1,100 entrepreneurs attended one or more of UNI's webinars or entrepreneurial workshops.

The SUI John Pappajohn Entrepreneurial Center was again rated as one of the Top 25 programs in the nation by *Entrepreneur* magazine.

In FY 2010, 1,161 businesses from 97 counties in the state received assistance from ISU's Center for Industrial Research and Service and reported 5,254 jobs created or retained, \$261 million in sales gained or retained, and \$20 million in costs avoided.

UNI's MyEntreNet program now lists more than 6,500 actively engaged users across the state.

2,782 clients in 99 counties received 14,306 hours of business counseling from the Small Business Development Centers. They also conducted 313 training workshops in which 3,827 individuals participated

UNI involved 208 faculty members and nearly 2,100 students in the delivery of its services to Iowa businesses and communities.

### **Engagement**

Many organizational units at the Regents universities are engaged with Iowa's people, industry and communities for the promotion of the state's economic development. Key economic development efforts include: research, intellectual property development and technology transfer, business incubation and acceleration, direct technical assistance to local and regional economic development groups, technical assistance and counseling to businesses, market research for Iowa companies and attracting and retaining businesses in the state. These activities are also highly coordinated with the economic development efforts of the Governor, the Iowa General Assembly and state agencies including the Iowa Department of Economic Development.

### **State Funding for Economic Development and Technology Transfer**

State funding in FY2010 was provided in three primary economic development program areas:

#### **1. Ongoing Economic Development and Technology Transfer Programs: FY 2010 \$3.18 million**

In FY 2010, the state provided \$3.18 million for several ongoing programs which include the research parks at SUI and ISU, the Institute for Physical Research and Technology, the Small Business Development Centers, the Institute for Decision Making, the Metal Casting Center and the Center for Advanced Drug Development. For FY 2011, state support of the Small Business Development Centers was increased by \$100,000 to expand their outreach and state support for the MyEntreNet program at UNI was increased by \$125,000 to expand its reach across Iowa. Total state support for these programs now stands at \$3.41 million for FY 2011. This is a decline of 55% below the \$7.63 million provided in FY 2001.

2. Grow Iowa Values Fund (GIVF): FY 2010 \$4.5 million

In FY 2005, the General Assembly authorized a ten-year annual appropriation of \$5 million under the GIVF to the Regents universities for purposes of supporting the human and physical infrastructure needed to effectively develop and transfer technology discoveries and to fund development projects involving existing companies and start ups.

Many of the GIVF-funded projects involve multi-year research and development efforts with private companies. A number of projects funded in earlier years are now being completed and are demonstrating a significant impact on job and wealth creation. For example, 18 startup companies whose projects received GIVF funding through ISU in FY 2006 and FY 2007 report \$26.3 million in new investment and cost savings and \$12.8 million in sales increases. That compares to a total of \$3.6 million in GIVF funds invested by ISU in FY 2006 and FY 2007.

For FY 2010 the General Assembly approved \$4.5 million in GIVF funding, of which \$4.32 million was allocated for the three universities and \$180,000 was allocated for projects submitted by Iowa's independent colleges and universities. The FY 2011 GIVF appropriation was reduced again to \$3.8 million. The Board of Regents approved the universities' FY 2011 proposals at the August, 2010 board meeting. The universities and companies involved in GIVF projects have identified \$3.8 million in matching funds for the projects. Examples of projects included:

- \$300,000 to support new company formation and faculty education programs through the University of Iowa Research Foundation 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.
- \$99,883 to evaluate and test an improved, patented form of delivering a dietary supplement called HMB (B-hydroxy-B-methylbutyrate) which researchers say diminishes muscle damage and inflammation resulting from exercise stress. The company partner, Metabolic Technologies, Inc. of the ISU Research Park, has already been successful in marketing a form of HMB as a medical nutritional supplement used in wound-healing products such as Juven marketed nationally by Abbott Nutritional Laboratories. The company projects that sales in the larger nutrition supplement market could reach \$20 million to \$30 million within five years supporting 10 to 20 full time jobs. The company has committed to \$85,785 in cash and in-kind matching funds; ISU will provide an additional \$45,748 in cost share.
- \$160,000 for the National Ag-Based Lubricants (NABL) Center to provide support for the growth of the state's bio-based products industry. In the past year, NABL has moved into the Cedar Valley Tech Works (CVTW) as the anchor tenant. From this location NABL is ideally positioned to offer assistance in bio-based product development and bio-lubricant testing to encourage further development of the State's bio-lubricants industry. NABL has also partnered with AMTek Inc., a locally-owned company in Cedar Rapids, Iowa to develop a microwave-based bio-grease production plant.

Private College Grant Program

Of the \$4.5 million in FY 2010 GIVF funding, \$180,000 was awarded by the Board of Regents at the February 2010 meeting to three independent universities and colleges for economic development and technology transfer projects. The three projects include \$182,552 in matching funds.

- Luther College received \$40,000 for a proposal to conduct further research into the use of cyclodextrins as a new and potentially less expensive method of detecting furans, dioxanes and polychlorinated biphenyls which can pollute water systems. Researchers hope to show that a low-cost, effective detection method could be commercialized and, once proven, could be expanded to detect other forms of chemical pollutants. Researchers intend to share the results of the project with environmental regulatory agencies.
- Clarke College received \$84,721 for a proposal to continue work previously granted GIVF funding that created a web-based analysis library and software tool/portal for clinicians and medical researchers gathering HIV data. The project is a collaboration among faculty at Clarke, UIHC, the University of Wisconsin Hospitals and Clinics, Stanford University School of Medicine and physicians at Dubuque Internal Medicine. The additional funding will allow Clarke to use the software, hardware and research tools developed to design and implement an Iowa clinical ontology in collaboration with a Dubuque clinician. The ontology will enable patients and clinicians to obtain statistical analysis related to patient health conditions by taking advantage of electronic medical records. The researchers believe the proposal will enhance the development of health informatics services in Iowa and plan to license the software product. The researchers propose to work with the Small Business Administration to develop a strategy promoting a medical informatics center in Iowa.
- Upper Iowa University received \$55,279 for a proposal to accelerate a business development program funded in part by the University's Upper Iowa Business Development (UIBD) grant program. The UIBD is a \$570,000 endowment created in 2007. The program supports economic development initiatives including a grant program for entrepreneurs interested in starting or expanding a business in Fayette, Iowa. Local business applicants are evaluated based on their business plan, growth potential, impact on job creation, and sales and taxes generated. Applicants are provided business development assistance and entrepreneurship mentoring through the University's e-Center and are advised about other sources of funding or tax credits. Funding provided the applicants may be used for research and development or commercialization of a product, marketing or advertising or construction and renovation expenses. Applicants are evaluated by a UIBD Grant Advisory Committee which includes representatives of local and regional economic development organizations. Applicants are required to provide a minimum of 20% cash match.

The Board will review FY 2011 proposals from private colleges at the December 2010 meeting. A total of \$152,000 will be available for these projects.

### 3. Battelle Economic Development Appropriations:

The Iowa General Assembly authorized \$20 million in FY 2007 funding to the Regents universities for economic development activities in three key platform areas of biosciences, advanced manufacturing and information technology. Of the total, \$5 million was designated to be used for endowed chairs and faculty salaries, \$6.8 million for related physical infrastructure and \$8.2 million for general support of projects in the key platform areas. The Board of Regents approved the universities' proposals in September of 2006. The universities provide regular progress reports on the Battelle-funded projects at Regents board meetings. No new Battelle funding has been provided by the Iowa legislature since the 2006 Session.

Nearly all of the projects include matching funding, either from businesses, the universities or federal agencies, even though matching funding for platform projects is not required by the legislation. The platform funding provided funding for 23 projects with research participation or investment by more than 40 companies and entrepreneurs to create new products and technology services. The aggregate amount of

industry/university/federal matching funding for all three universities was \$49.5 million, resulting in a better than 5 to 1 matching ratio with the \$8.2 million in Battelle platform funding provided.

Many of the projects funded are multi-year initiatives at various stages of development or completion. Highlights of the success achieved with the Battelle funding include:

- Battelle funds used to create an endowed chair at SUI were instrumental in retaining a key faculty member who has since obtained \$15 million in federal research funding for research in macular degeneration and has created a company which has obtained \$37 million in venture capital investment.
- Private fundraising has now been completed for all four new endowed chairs at ISU. The new chairs created include two in veterinary medicine, one in engineering and one in biorenewable energy science and technology.
- A UNI project involves development of advanced technology to replace heavy castings with high performance titanium castings. The resulting technology is available to the Rock Island Arsenal and is available for licensing by commercial firms throughout the Midwest.
- Battelle funds were used to attract a professor to the University of Iowa who is internationally known for his research in neurology of the inner ear and joins the world class research group at the UI Cochlear Implant Clinical Research Center.
- Battelle funds were used to foster the continued growth of the Nutrition and Wellness Research Center (NWRC) at ISU. The NWRC is working to engage interdisciplinary research teams to pursue integrated lines of research related to nutrition, physical activity and other health and wellness issues including obesity.
- A collaborative project between UNI's Metal Casting Center and ISU is in the process of developing advanced manufacturing methods for lightweight steels for use in the wind energy generation industry.

**Full Reports Available**

The full annual reports from the universities are available at the Board of Regents website and will be provided to the General Assembly, the Governor's Office, the Legislative Services Agency and the Iowa Department of Economic Development.

**Table 1: Intellectual Property, Technology Transfer, and External Support FY2008-2010**

Indicators	FY 2008				FY 2009				FY 2010			
	ISU	SUI	UNI	Regents Totals	ISU	SUI	UNI	Regents Totals	ISU	SUI	UNI	Regents Totals
1. Number of disclosures of intellectual property	87	68	16	171	95	70	12	177	111	70	8	189
2. Number of patent applications filed	53	109	8	170	40	128	6	174	26	107	8	141
3. Number of patents awarded	27	65	5	97	23	116	4	143	29	97	3	129
4. Number of license and option agreements executed on institutional intellectual property in total	62	22	4	88	84	18	3	95	97	21	3	121
5. Number of license and option agreements executed on institutional intellectual property in Iowa	13	4	4	21	32	2	3	37	32	6	2	41
6. Number of license and option agreements yielding income	250	143	12	405	121	135	13	269	260	129	11	400
7. Revenue to Iowa companies as a result of licensed technology <sup>1</sup>	\$84 million	\$1.23 million	\$3.8 million	\$89 million	\$103 million	\$1.71 million	\$3.2 million	\$107.9 million	\$58 million	\$2.03 million	\$2.7 million	\$62.7 million
8. Number of startup companies formed, in total (through licensing activities)	2	2		4	1	2		3		3		75
9. Number of startup companies formed, in Iowa (through licensing activities)	2	2		4	1	2		3		3		75
10. Number of start up companies formed through UNI MyEntrene/IIncubator			59	59			74	74			72	30
11. Number of companies in research park/ incubators	71	51	17	139	62	50	34	146	59	46	30	135

Indicators	FY 2008				FY 2009				FY 2010			
	ISU	SUI	UNI	Regents Totals	ISU	SUI	UNI	Regents Totals	ISU	SUI	UNI	Regents Totals
12. Number of new companies in research parks and incubators	12	7	9	28	16	6	23	45	11	3	11	25
13. Number of employees in companies in research parks and incubators	923	1962	33	2918	854	2029	65	2948	758	2010	61	2829
14. Royalties and license fee income	\$9.5 million	\$23.6 million	\$47 thousand	\$33.1 million	\$9.3 million	\$42.9 million	\$117,000	\$52.3 million	\$9.4 million	\$27 million	\$118,849	\$36.52 million
15. Total sponsored funding (\$ million)	\$274 million	\$386 million	\$36 million	\$696 million	\$305.2 million	\$429.5 million	\$39.7 million	\$774.4 million	\$388.2 million	\$466.5 million	\$42 million	\$896.7 million
16. Corporate-sponsored funding for research and economic development <sup>2</sup> in total (\$ million)	\$24.4 million	\$36.3 million	\$1.5 million	\$62.2 million	\$22.4 million	\$38.6 million	\$1.35 million	\$62.35 million	\$21.1 million	\$30.8 million	\$1.55 million	\$53.45 million
17. Corporate-sponsored funding for research and economic development <sup>2</sup> in Iowa (\$ million)	\$13 million	\$3 million	\$1.5 million	\$17.5 million	\$12 million	\$1.5 million	\$1.35 million	\$14.85 million	\$11 million	\$1.8 million	\$1.55 million	\$14.35 million

<sup>1</sup>Aggregate sales reported by Iowa companies of products and services based on licensed inventions.

<sup>2</sup>Excludes corporate philanthropy