

Contact: Mary Braun

**ANNUAL ECONOMIC DEVELOPMENT AND TECHNOLOGY TRANSFER REPORT**

**Action Requested:** Receive the report.

**Full Reports Available:** The full annual reports from the Regents 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 Economic Development Authority as required by law.

**Executive Summary:** Iowa's three public universities collaborate with business and industry and with each other to foster success for all economic development and entrepreneurship efforts in Iowa. They demonstrate to the public the value of research and significantly impact economic development in Iowa on a daily basis in three primary ways:

1. Offering research-based expertise and business assistance directly to Iowa's people, industry, and communities in all 99 counties.
2. Conducting academic research that results in intellectual property, discoveries and innovations available to business, industry, and the marketplace.
3. Providing an educated workforce as more than 77,800 students are pursuing academic excellence at the University of Iowa (UI), Iowa State University (ISU) and the University of Northern Iowa (UNI).

The Regents universities research and economic activities outlined in their reports meet the Board of Regents Strategic Plan, Priority 2, Objective 2.3: The Regent Enterprise will build strategic collaborations among universities and with outside entities to foster opportunities for innovation and economic development. Each institution shall report annually on significant partnership and/or collaboration activities. This includes both quantitative and qualitative metrics that demonstrate the impact of these activities.

**FY 2018 Highlights:**

The Regents universities work diligently to develop breakthroughs that help to improve Iowa's economy. The statistics on the next page reflect excellent performance when compared to similar institutions. These numbers fluctuate on an annual basis, but generally reflect an upward trend over several years. These numbers also only tell part of the story. First, the value added by providing assistance to licensees and startup companies as they take these (usually) early stage research ideas and turn them into revenue is not reflected. In addition, information on revenue from licensed patents is only collected during the patent term, which results in an underreporting of revenue generated from products that contain university technology.

The combined statistics for the three universities for FY 2018, compared to FY 2016 and FY 2017, are on the next page. See the chart at end of docket item for details from each Regents university.

<b>Companies</b>	<b>FY 2016</b>	<b>FY 2017</b>	<b>FY 2018</b>
Total startup companies formed through licensing activities	28	29	7
Startup companies formed, <b>in Iowa</b> through licensing activities	21	21	5
Startup companies formed through UNI Incubator	142	134	96
Companies in research parks and incubators	162	185	179
New companies in research parks and incubators	35	66	60
Employees in companies in research parks and incubators	3,460	3,493	3,673

<b>Licenses, Intellectual Property and Patents</b>	<b>FY 2016</b>	<b>FY 2017</b>	<b>FY 2018</b>
Patent applications filed	348	203	245
Patents awarded	84	59	117
Disclosures of intellectual property	304	234	299
Total license and option agreements executed on institutional intellectual property	125	145	104
License and option agreements executed on institutional intellectual property <b>in Iowa</b>	66	59	32
License and option agreements yielding income	290	330	322

<b>Income and Funding</b>	<b>FY 2016</b>	<b>FY 2017</b>	<b>FY 2018</b>
Royalties and license fee income	\$4.94 M	\$5 M	\$6.24 M
Total sponsored funding	\$1,016.8 M	\$1,099.1 M	\$1,102.7 M
Sponsored funding from federal grants	\$490.2 M	\$465.6 M	\$518.2 M
Total Corporate-sponsored funding	\$129.7 M	\$145.7 M	\$143.7 M
Corporate-sponsored funding <b>in Iowa</b>	\$21.2 M	\$25.7 M	\$23.1 M

State Appropriations. In FY 2018, the Iowa General Assembly appropriated \$8.7 million in total funding for economic development, technology transfer, and commercialization of research to the three Regents universities. The money comes from the \$66 million Skilled Worker and Job Creation Fund, which the General Assembly created for FY 2014 to centralize funding for job creation, job training, and job learning opportunities. The money allocated to the Board of Regents, which hasn't changed since creation of the fund, is divided as follows:

- \$3 million to the Regents Innovation Fund, which is used in the areas related to technology commercialization, marketing, entrepreneurship, business growth, and infrastructure projects and programs needed to assist in implantation of activities under Iowa Code chapter 262B (Commercialization of Research). The Regents universities invest the funds received from the legislature in opportunities that yield successful startups, innovative business assistance, and critical research leading to commercialization. The universities are required to match the funding on a one-to-one basis from non-state resources. Research grants, private investors or companies interested in a project, and other

university funds are often used as match dollars. The legislation divides the funding: 35% to UI, 35% to ISU, and 30% to UNI.

- \$2.4 million to ISU for small business development centers, the ISU Research Park and the Center for Industrial Research and Service. At least \$735,728 must be allocated for purposes of funding small business development centers. ISU is to direct expenditures for research toward projects that will provide economic stimulus for Iowa and emphasize providing services to Iowa-based companies. The industrial incentive program must focus on Iowa industrial sectors and seek contributions and in-kind donations from businesses, industrial foundations, and trade associations, and that moneys for the Center for Industrial Research and Service industrial incentive program can only be allocated for projects which are matched by private sector moneys for directed contract research or for nondirected research. The match required of small businesses for directed contract research or for nondirected research shall be \$1 for each \$3 of state funds. The match required for other businesses for directed contract research or for nondirected research shall be \$1 for each \$1 of state funds. The match required of industrial foundations or trade associations shall be \$1 for each \$1 of state funds.
- \$2 million to UI for the purpose of implementing the entrepreneurship and economic growth initiative. The appropriation is used to expand public/private partnerships and programming through the Pappajohn Entrepreneurial Center.
- \$209,000 to UI for the UI Research Park, Technology Innovation Center, and UI Pharmaceuticals (formerly Advanced Drug Development program). UI must direct expenditures for research toward projects that will provide economic stimulus for Iowa and emphasize providing services to Iowa-based companies.
- \$1.07 million to UNI for the Metal Casting Center, the MyEntreNet internet application, and the Institute for Decision Making. UNI must allocate at least \$617,638 for purposes of support of entrepreneurs through the university's Center for Business Growth and Innovation and Advance Iowa program. UNI must direct expenditures for research toward projects that will provide economic stimulus for Iowa and emphasize providing services to Iowa-based companies.

### **FY 2018 Economic Development and Technology Transfer Highlights**

**University of Iowa:** After the departure of the Vice President for Research and Economic Development in October 2017, UI decided to focus the office's mission on finding fresh and innovative ways to support research and scholarship in a rapidly shifting academic landscape. Efforts in economic development will be led by a new Chief Entrepreneurial Officer reporting to the Vice President for External Relations with a dotted-line report to the President. Of the eight UI organizations that contribute to economic development efforts, five will be re-located from the Vice President of Research to the Chief Entrepreneurial Officer. The university's new Innovation Center, including the Chief Entrepreneurial Officer and the organizations reporting to the officer, will be in an ideal position to contribute to the Innovation Center's efforts to foster innovation and entrepreneurship across campus.

The University of Iowa, for the second year in a row, has been cited as one of the 100 most innovative universities in the world by Reuters. This recognition is indicative of the impact the university can have upon the economy of Iowa and is why economic development is a component of the university's strategic plan. As the university looks to implement its strategic plan through

specific strategies, it is important to note that the university is focused on supporting the translation of intellectual work into applications to enhance economic development. This strategy will be implemented through:

- Exploring increased opportunities for entrepreneurial education, new venture creation, technology transfer, and innovation; and
- Connecting faculty, staff, and students to organizations to solve social, technical, and business problems

Their annual report provides a description and the activities of eight of the UI's key initiatives in the economic development space:

1. Protostudios, a state-of-the-art, rapid-prototyping facility that works with UI researchers, researchers from other Iowa universities, and community members to develop fully functional prototypes of product ideas, allowing innovators to test, redesign, and determine manufacturing paths and demonstrate usability to investors.
2. UI Research Park, home to a world-class business incubator program that has nurtured over 100 UI start-ups and other new ventures since its founding. Incubator tenant companies can draw on both the research and business resources of the university, including access to UI libraries, hazardous waste management services, support for SBIR/STTR grants (Small Business Innovation Research/Small Business Technology Transfer federal grants), educational seminars, networking opportunities, and shipping/package handling.
3. Translational Research Incubator, serves as the wet-lab counterpart to Protostudio's dry-lab program. The TRI space is a complement to the UI Research Park as it can house up to four early-stage research-based biomedical or life science companies focused on commercializing technology developed at the university.
4. UI Research Foundation, assists UI faculty researchers in the transfer of technology from the laboratory to the marketplace. The office manages a wide variety of intellectual properties arising from research programs throughout the university, and it is the resource for faculty and staff researchers in the areas of patent prosecution, innovation marketing, and licensing.
5. UI Ventures, assists university faculty and staff in creating new companies based upon their research. It facilitates connections between the faculty and outside mentors, services and investors and serves as a liaison between the company and university services. In addition, UI Ventures manages the TRI incubator and operates the MADE program to encourage faculty and staff innovation and entrepreneurship throughout campus.
6. MADE, is a manufacturing and e-commerce initiative launched in FY18. Iowa MADE is a first of its kind program, in the nation, whose mission is to encourage and facilitate the UI community to bring innovative, need-based products to market with the goal of enhancing economic development at the university as an extension of research and scholarship.
7. John Pappajohn Entrepreneurial Center, offers nationally recognized comprehensive entrepreneurial education programs to all Iowans. Iowa JPEC and its university partners play an important role in the development of Iowa-based technology and high-growth start-up companies. Whether providing one-on-one consulting services and group training, working with start-up companies on technology transition, directing UI students on advanced field study projects, or providing training and seminars to business executives, Iowa JPEC seeks to support the next generation of entrepreneurs and business leaders.

8. In FY18, the UI Center for Advancement (UICFA) expanded its involvement in the university's economic development efforts. The mission of the center is to advance the UI through engagement and philanthropy, and its Corporate and Foundation Relations group promotes economic development through connecting corporate partners with the UI's strengths. In addition, the UICFA is a key player in tapping UI's extensive alumni base to support entrepreneurship and technology commercialization through monetary resources and, equally important, advice and expertise.

**Iowa State University:** ISU promotes economic growth in Iowa by providing business and technical assistance to existing companies, supporting the creation of new companies, helping attract new companies and entrepreneurs to Iowa, creating intellectual property and moving research ideas to the market, and contributing to workforce and entrepreneurial development.

Iowa State pioneered the first statewide Extension Service in 1906. The extension experiment – universities actively transferring their research and expertise to every corner of every state – was immensely successful across America and remains so today. Each year, more than a million Iowans directly benefit from ISU Extension and Outreach programs. ISU Extension and Outreach, in collaboration with ISU colleges, impacts economic development in the state through all of its programs – Community and Economic Development, as well as Agriculture and Natural Resources, Human Sciences, and 4-H Youth Development.

The Office of Economic Development and Industry Relations (EDIR) consists of the following key university economic development units that provide integrated and comprehensive business, technical, entrepreneurial support, and educational services to Iowa State's clients and partners:

1. The Center for Industrial Research and Service works with business and industry to enhance their performance through service offerings in five general areas: technology, growth, productivity, enterprise leadership, and workforce.
2. The Small Business Development Center, administered by Iowa State, consists of 15 regional centers serving all 99 counties in Iowa. SBDC assists individuals interested in starting new companies and provides business services and counsel to existing companies across Iowa to solve management problems, to improve operations, to seek financing, and to pursue new opportunities. Iowa State also operates two regional centers.
3. Pappajohn Center for Entrepreneurship serves entrepreneurs, provides entrepreneurial opportunities for students including a student accelerator, hosts statewide and local business plan and pitch competitions, and participates in university-wide academic programs in entrepreneurship, including an interdisciplinary minor in entrepreneurial studies, graduate courses, a major in entrepreneurship for business students, and a PhD program in entrepreneurship.
4. ISU Research Foundation and Office of Intellectual Property and Technology Transfer protects, manages, markets, and licenses the intellectual property of ISU researchers and implements agreements related to research collaborations with industry.
5. ISU Research Park provides a resource-rich environment including close proximity and easy access to Iowa State University for its tenant companies, which include start-ups and established companies that range from growing entrepreneurial ventures to global corporations. The Research Park offers high quality labs and office space, as well as numerous services and amenities that support the efforts of science- and technology-based organizations.

EDIR also serves as the gateway or portal to the university's expertise, capabilities, resources, and facilities that support and enhance economic development throughout the state. Thus, EDIR works very closely with other university units that contribute to the university's economic development efforts and impact, including the Office of the Vice President for Extension and Outreach, the Office of the Vice President for Research, and the academic colleges.

Their annual report provides a description and activities for these programs and centers.

**University of Northern Iowa:** The University of Northern Iowa (UNI) provided economic development assistance throughout all of Iowa's 99 counties for the 19<sup>th</sup> consecutive year. UNI's economic development outreach programs are housed in the Business and Community Services (BCS) division and work toward supporting the UNI strategic goal of contributing to the economic vitality of the state. Since 2000, BCS has engaged the entire university community in its outreach efforts, including faculty, staff, students, and alumni – all of whom play a critical role in *Building a Better Iowa*.

Specific areas of service offered by UNI BCS include: entrepreneurship, community and economic development, market research, environmental research, sustainability, advanced manufacturing, metal casting, and additive manufacturing.

#### FY 2018 Overall

- Provided service in all 99 counties to nearly 3,370 unique business, community, and local government clients including an additional 49,000 unique visitors to MyEntre.Net/IASourceLink
- Reached more than 406,000 Iowans through BCS programs and projects
- Engaged 216 faculty members and 356 students in the delivery of BCS services and another 3,240 students were reached by BCS programs
- Leveraged each \$1 invested by the state with \$5 in private grants, fees, or federal funding

Their annual report provides a description and the activities of the 12 programs located within Business and Community Services (<https://bcs.uni.edu/>):

1. Advance Iowa
2. Center for Business Growth & Innovation
3. Center for Energy and Environmental Education
4. Geoinformatics Training, Research, Education and Extension Center (GeoTREE)
5. Institute for Decision Making
6. Iowa Waste Reduction Center
7. John Pappajohn Entrepreneurial Center
8. Metal Castings Center and Center for Additive Manufacturing
9. Recycling and Reuse Technology Transfer Center
10. Small Business Development Center
11. Strategic Marketing Services
12. Tallgrass Prairie Center

Indicators	FY 2016				FY 2017				FY 2018			
	ISU	SUI	UNI	Regents Total	ISU	SUI	UNI	Regents Total	ISU	SUI	UNI	Regents Total
1. Number of disclosures of intellectual property	143	151	10	304	130	93	11	234	145	143	11	299
2. Number of patent applications filed	49	297	3	348	50	148	5	203	89	153	3	245
3. Number of patents awarded	15	67	2	84	15	42	2	59	42	74	1	117
4. Number of license and option agreements executed on institutional intellectual property <b>in total</b>	84	40	2	125	85	58	2	145	51	51	2	104
5. Number of license and option agreements executed on institutional intellectual property <b>in Iowa</b>	45	19	2	66	39	18	2	59	21	9	2	32
6. Number of license and option agreements yielding income	153	128	9	290	199	122	9	330	185	127	10	322
7. Revenue to Iowa companies as a result of licensed technology	\$5.2 million	\$1.26 million	\$3.1 million	\$9.56 million	\$9.9 million	\$0.5 million	\$3.7 million	\$14.1 million	\$36.9 million	\$1.24 million	\$3.6 million	\$41.74 million
8. Number of startup companies formed, <b>in total</b> (through licensing activities)	6	22	--	28	9	20	--	29	2	4	1	7
9. Number of startup companies formed, <b>in Iowa</b> (through licensing activities)	5	16	--	21	8	13	--	21	2	2	1	5
10. Number of startup companies formed through UNI Incubator	--	--	142	142	--	--	134	134	--	--	96	96
11. Number of companies in research parks and incubators	74	59	29	162	115	46	24	185	118	41	20	179
12. Number of new companies in research parks and incubators	17	4	14	35	43	7	16	66	40	6	14	60
13. Number of employees in companies in research parks and incubators	1,709	1,635	116	3,460	1,702	1,704	87	3,493	2,178	1,429	66	3,673
14. Royalties and license fee income	\$3.3 million	\$1.62 million	\$21,722	\$4.94 million	\$3.3 million	\$1.67 million	\$35,050	\$5.0 million	\$4.3 million	\$1.72 million	\$21,500	\$6.24 million

Indicators	FY 2016				FY 2017				FY 2018			
	ISU	SUI	UNI	Regents Total	ISU	SUI	UNI	Regents Total	ISU	SUI	UNI	Regents Total
15. Total sponsored funding	\$425.8 million	\$551.9 million	\$39.1 million	\$1.0168 billion	\$503.6 million	\$557.7 million	\$37.8 million	\$1.0991 billion	\$509.2 million	\$554.0 million	\$39.5 million	\$1.1027 billion
16. Sponsored funding from federal grants	\$229.5 million	\$240.3 million	\$20.4 million	490.2 million	\$219 million	\$224.4 million	\$22.2 million	\$465.6 million	\$235.6 million	\$260.5 million	\$22.1 million	\$518.2 million
17. Corporate-sponsored funding in total	\$43.8 million	\$85.5 million	\$435,000	\$129.7 million	\$45.3 million	\$99.5 million	\$875,000	\$145.7 million	\$51.3 million	\$91.6 million	\$803,000	\$143.7 million
18. Corporate-sponsored funding in Iowa	\$11.9 Million	\$8.9 million	\$435,000	\$21.2 million	\$14.3 million	\$10.5 million	\$875,000	\$25.7 million	\$7.8 million	\$14.9 million	\$400,000	\$23.1 million