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ANNUAL ECONOMIC DEVELOPMENT AND TECHNOLOGY TRANSFER REPORT

Action Requested: Receive the report.

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 Economic Development Authority as required by law.

Executive Summary: Iowa's three public universities collaborate with businesses 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. In FY 2017 alone, Iowa companies generated \$14.1 million in revenue as a direct result of university discoveries.
3. Educating Iowa's workforce. Today, more than 80,000 students are pursuing academic excellence at the University of Iowa (UI), Iowa State University (ISU) and the University of Northern Iowa (UNI).

In FY 2017, the Iowa General Assembly provided \$8.8 million in total funding for economic development, technology transfer and commercialization of research to the three Regents Universities, which is the same as FY 2016. In addition, Iowa's three public universities received \$1.1 billion in total sponsored funding. As a result:

- Revenue to Iowa companies as a result of licensed technology increased from \$9.56 million in FY 2016 to \$14.1 million in FY 2017. There were a total of 234 disclosures of intellectual property and 145 license and operation agreements were executed on institutional intellectual property with 59 of them being in Iowa.
- The number of new companies in the research parks and incubators nearly doubled from 35 in FY 2016 to 66 in FY 2017. A total of 3,493 individuals were employed by the 185 companies located at the UI, ISU and UNI research parks and business incubators in FY 2017.
- A total of 29 startup companies were formed at UI and ISU with 21 of them in Iowa. UNI formed a total of 16 startup companies through their incubator.
- 203 patent applications were filed with 59 patents awarded.

Selected FY 2017 Economic Development and Technology Transfer Highlights

University of Iowa: Their report highlights the activities of six of their key initiatives in the economic development space – UI Research Foundation (UIRF), Protostudios, UI Research Park (UIRP), Translational Research Incubator (TRI), UI Ventures, and John Pappajohn Entrepreneurial Center (JPEC). While all six of these economic development initiatives can act

independently of each other – for example, a start-up company in the UI Research Park may not need the university’s assistance in company formation or a student in the JPEC program might be working on an innovation that he or she developed outside of the university’s research enterprise – they are designed to provide maximum impact when they work together. UIRF takes the lead in outreach to faculty researchers, staying abreast of the discoveries coming out of UI labs and helping researchers identify innovations that could be commercialized. If that innovation could serve as the foundation of a start-up company, UIRF puts in place an intellectual property strategy and a licensing plan appropriate for such a company and brings UI Ventures in to assist the faculty member in company formation and early-stage company strategy. UI Ventures leverages the talent and support of the students in JPEC, providing those students with a real-world entrepreneurial experience and providing the start-up company with motivated and talented advisors at little to no cost. Start-ups in need of wet lab space can work in TRI, and those in need of prototypes can work with Protostudios. Once the start-up has outgrown campus space, it then can locate in the UIRP and expand its operations there.

Highlights of UI’s economic development activities in FY 2017, Impact on economic growth of Iowa: job creation and wealth:

- The UIRP is home to 42 companies: 15 in the Bio Ventures Center, 14 in the Technology Innovation Center, and 13 in other facilities in the Park. There are over 1,700 employees overall.
- UI Ventures currently supports 44 companies and 32 additional groups contemplating company formation. In FY2017, 9 companies received SBIR/STTR funding totaling over \$4 million and over \$8 million was raised from private investors.
- JPEC:

o Start-up Companies Served (New Business Starts)	240
o Program, Seminar & Workshop Participants	18,470
o Estimated Job Creation	322
o Hours dedicated to Clients	12,512
o Total Clients (Individuals receiving assistance)	895
o Total Youth Impacted (K-12)	30,447
o Seed Money Awarded	\$125,500
o Total Participants Across All Programs (Including Academic, Outreach, and Youth)	+51,000

Iowa State University: ISU promotes economic growth in Iowa in a number of ways. They provide business and technical assistance to existing companies, support the creation of new companies, help attract new companies and entrepreneurs to Iowa, create intellectual property and help move research ideas to the market, and contribute to workforce and entrepreneurial development.

ISU had a record-setting year in FY 2017 with total sponsored funding of more than \$500 million, including \$244 million for research. Businesses, corporations and commodity organizations accounted for \$51 million of sponsored funding. ISU researchers submitted 130 disclosures of intellectual property, and their technology transfer office filed 50 patent applications. Additionally, ISU technologies resulted in 85 license and option agreements worldwide with 39 in Iowa. ISU currently has 199 license and option agreements yielding income. Iowa companies earned \$99.9

million revenue from ISU licensed technologies in calendar year 2016, and nine startup companies based on ISU technologies were formed in Iowa.

During FY 2017, the Center for Industrial Research and Service (CIRAS) staff or partners provided assistance to 1,616 businesses from 96 counties on projects or attendance at educational workshops. Companies responding to surveys reported \$679 million in total economic impact – \$600 million in sales gained or retained, \$44 million in new investments, and \$35 million in costs saved or avoided. Company executives stated that 5,741 jobs were added or retained as a result of the assistance they received from CIRAS and its partners.

The America's Small Business Development Center (SBDC) Iowa, which consists of 15 regional centers serving all 99 counties in Iowa, provided business assistance to a total 4,442 clients and 15,134 counseling hours. As a result of this counseling, 279 new businesses were started and 1,689 jobs were created. Additionally, SBDC assistance was credited by clients with increasing their capital infusion by more than \$70.4 million and increasing their sales by more than \$68.8 million. This translates into 4+ new jobs every day, a new business every 31 hours and an increase of \$188,755 in sales each month.

The ISU SBDC regional center and the Mid Iowa SBDC regional center, in partnership with the ISU Pappajohn Center for Entrepreneurship, provided 2,651 hours of counseling assistance to startup and existing companies; served 798 clients with one-on-one counseling; educated 184 attendees through workshops; provided advice to several hundred clients via telephone and e-mail; and advised a number of technology companies in the areas of licensing, equity-based financing, market entry and numerous operational areas. The centers documented 64 new business starts with 358 new jobs created that have generated over \$13 million in capital infusion.

Fifteen new companies and affiliates and 30 pre-incubator companies joined the ISU Research Park in FY 2017, bringing the historical total to 325 companies and 5,029 employees for current and former tenants that are still in existence worldwide. Currently, there are 82 companies and research centers and 13 affiliates located in the Research Park, employing 1,702 and 153 people, respectively. There are 25 pre-incubator companies that remain in StartUp Factory space.

University of Northern Iowa: UNI provided economic development assistance throughout all 99 counties for the 18th consecutive year in FY 2017. Since 2000, UNI's Business and Community Services (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.

Overall

- Provided service in all 99 counties to nearly 3,000 unique business, community and local government clients including an additional 29,000 unique visitors to MyEntre.Net/IASourceLink
- Reached more than 419,000 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

Some exceptional recognition and milestones in the past year include:

- UNI won the American Association of State College and Universities (AASCU) Excellence and Innovation Award. Led by BCS' Institute for Decision Making (IDM) and supported by BCS' Center for Business Growth and Innovation (CBGI), the Regional Entrepreneurship Project won the national award for leadership in regional and economic development. In just four years, UNI's Regional Entrepreneur Project has positively impacted 17 counties in five economically challenged regions by providing entrepreneurial development assistance to local and regional development organizations.
- The UNI Metal Casting Center (MCC) and Additive Manufacturing Design Lab was awarded national runner up for casting of the year by the American Foundry Society. It was awarded this recognition for creating a 3D printed core for an innovative military project. This is a new award for 3D printed cores and molds. MCC is recognized as a nationwide leader 3D printed sand cores and molds.
- UNI served as the host institution for the Green Iowa AmeriCorps project. BCS' Center for Energy and Environmental Education (CEEE) was recognized as a top site by Green Iowa AmeriCorps for completing 1,316 residential energy projects, including energy assessments and efficiency projects, across seven Iowa communities in the past year.
- IDM and the Iowa Waste Reduction Center (IWRC) celebrated their 30-year anniversaries. Since 1987, IDM has provided economic development assistance to more than 800 communities across all regions of Iowa. IWRC has conducted more than 6,000 environmental on-site reviews for small businesses across Iowa. Both programs have adapted and helped communities and small businesses adapt to the changing economy over the last three decades.

Indicators	FY 2015				FY 2016				FY 2017			
	ISU	SUI	UNI	Regents Total	ISU	SUI	UNI	Regents Total	ISU	SUI	UNI	Regents Total
1. Number of disclosures of intellectual property	130	147	11	290	143	151	10	304	130	93	11	234
2. Number of patent applications filed	36	148	3	187	49	297	3	348	50	148	5	203
3. Number of patents awarded	31	50	3	84	15	67	2	84	15	42	2	59
4. Number of license and option agreements executed on institutional intellectual property in total	108	40	2	150	84	40	2	125	85	58	2	145
5. Number of license and option agreements executed on institutional intellectual property in Iowa	61	13	2	76	45	19	2	66	39	18	2	59
6. Number of license and option agreements yielding income	157	135	8	300	153	128	9	290	199	122	9	330
7. Revenue to Iowa companies as a result of licensed technology	\$8 million	\$1.62 million	\$2.7 million	\$12.32 million	\$5.2 million	\$1.26 million	\$3.1 million	\$9.56 million	\$9.9 million	\$0.5 million	\$3.7 million	\$14.1 million
8. Number of startup companies formed, in total (through licensing activities)	4	15	--	19	6	22	--	28	9	20	--	29
9. Number of startup companies formed, in Iowa (through licensing activities)	4	11	--	15	5	16	--	21	8	13	--	21
10. Number of startup companies formed through UNI Incubator	--	--	94	94	--	--	142	142	--	--	134	134
11. Number of companies in research parks and incubators	70	55	31	156	74	59	29	162	115	46	24	185
12. Number of new companies in research parks and incubators	11	6	11	28	17	4	14	35	43	7	16	66
13. Number of employees in companies in research parks and incubators	1580	1966	57	3603	1709	1635	116	3460	1702	1704	87	3493
14. Royalties and license fee income	\$3 million	\$1.87 million	\$12,776	\$4.9 million	\$3.3 million	\$1.62 million	\$21,722	\$4.94 million	\$3.3 million	\$1.67 million	\$35,050	\$5.0 million

Indicators	FY 2015				FY 2016				FY 2017			
	ISU	SUI	UNI	Regents Total	ISU	SUI	UNI	Regents Total	ISU	SUI	UNI	Regents Total
15. Total sponsored funding	\$424.9 million	\$565 million	\$38.9 million	\$1028.8 million	\$425.8 million	\$552 million	\$39.1 million	\$1016.9 million	\$503.6 million	\$557.7 million	\$37.8 million	\$1099.1 million
16. Corporate-sponsored funding for research and economic development in total	\$39.6 million	\$91.7 million	\$575,000	\$131.8 million	\$43.8 million	\$75.9 million	\$435,000	\$120.1 million	\$51.1 million	\$83.3 million	\$875,000	\$135.3 million
17. Corporate-sponsored funding for research and economic development in Iowa	\$16.5 million	\$2 million	\$575,000	\$19 million	\$11.9 million	\$1.9 million	\$435,000	\$14.2 million	\$14.3 million	\$2.0 million	\$875,000	\$17.2 million