

The University of Iowa
FY18 Annual Economic Development Report

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

A robust plan incenting economic development, on a campus like the University of Iowa, is key to moving the ideas that are generated on campus to life changing impact for Iowans.

A change in UI leadership, in the Office of the Vice President for Research and Economic Development during FY18, provided the university with an opportunity to examine its efforts in promoting statewide economic development, and this report begins with a summary of that effort.

Subsequently, this report provides a description of eight of the UI's key initiatives in the economic development space—Protostudios, UI Research Park, Translational Research Incubator, UI Research Foundation, UI Ventures, MADE, Center for Advancement, and John Pappajohn Entrepreneurial Center.

I. Aligning for Impact – Research and Economic Development

After the departure of the Vice President for Research and Economic Development in October, 2017, the university—led by a search committee of broad campus representation—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 listed below that contribute to economic development efforts, five will be re-located from the Vice President of Research to the Chief Entrepreneurial Officer: Protostudios, UI Research Park, Translational Research Incubator, UI Ventures, and MADE. As the university's new Innovation Center (to be

housed in the former Art Building on campus) develops 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.

II. University of Iowa Economic Development Initiatives

UI Research Foundation CATALYZING DISCOVERY AND INNOVATION

The UI Research Foundation (UIRF) 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.

UIRF supports new ventures, especially faculty start-ups, through streamlined agreements, resources, patent prosecution support, and funding referrals.

protostudios

Protostudios is a state-of-the-art, rapid-prototyping facility located in the MERGE co-working space in downtown Iowa City. It 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. Protostudios focuses on biomedical and electronics prototyping with access to 3D printers (plastics, metals, ceramics) milling, laser/wet jet cutter, printed circuit board fabrication, and consulting from on-staff industrial designers and engineers.

The creation of Protostudios was funded through a \$1.5 million Strategic Infrastructure Fund grant from the Iowa Economic Development Authority, and the authority approved a \$200,000 grant to outfit additional space for new equipment that expands the organization's capabilities.

UI Research Park EXPANDING TECHNOLOGIES AND COMPANIES

The UI Research Park leases building sites and space to growing technology companies that require sustained research relationships with the university. The park is 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.

The BioVentures Center (BVC) in the park contains wet laboratory modules that can be shared for life science companies and office/dry laboratory modules for engineering and technology-based companies.

The park is also home to four of the university's specialized core facilities. These facilities provide technical support services critical to the growth of start-up companies as well as existing industry partners:

- University of Iowa Pharmaceuticals offers contract analytical, development, and GMP manufacturing services to the pharmaceutical and biotechnology industry.
- Center for Biocatalysis and Bioprocessing operates a microbial fermentation facility and specializes in both upstream and downstream bioprocessing with expertise in process scale up for food products, biofuels, biopharmaceuticals, and other biotechnology products.
- National Advanced Driving Simulator conducts research and development on driving safety for the government, military, and industry partners.
- State Hygienic Laboratory is the state's environmental and public health laboratory, serving all ninety-nine Iowa counties as well as out-of-state clients by testing and tracking infectious diseases and illnesses.



The Translational Research Incubator (TRI) serves as the wet-lab counterpart to Protostudio's dry-lab program. The TRI space, located in the Medical Laboratories building on the university's campus 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 of Iowa.

Much of the support for TRI goes to purchasing equipment that can be shared among the company tenants. This allows companies to focus their limited resources on technology-specific development to maximize their funding. The space is ideal for small start-ups that need to conduct early-stage proof-of-concept experiments, often with SBIR/STTR funding, in order to attract the investment needed to expand operations at the UI Research Park and other locations in the eastern Iowa region.



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. UI Ventures actively engages with outside investors and business experts to improve visibility of UI companies and bring business expertise to campus. In addition, UI Ventures manages the TRI incubator and operates the MADE program to encourage faculty and staff innovation and entrepreneurship throughout campus.

MADE

 THE UNIVERSITY OF IOWA

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.

MADE is a manufacturing and e-commerce initiative launched in FY18 with 3 objectives: 1) bring simple, low volume technology to market; 2) contribute to a cultural transformation around innovation on campus; and 3) provide students with an opportunity to learn first-hand the tools necessary to bring a product to market. The program crosses technology sectors with the first products to launch being low risk medical devices developed at UIHC across several departments. Products are available for sale through the iowamade.org website and revenue is used to reimburse development costs to encourage continued support of innovation and development. All technologies remain available for licensing to an external company through UIRF.

An undergraduate student operations team maintains the FDA compliant quality system, manufacturing, product management, marketing, and sales. These students have the unique opportunity to gain in depth real-world experience and leadership skills on campus to complement their classroom education.



The John Pappajohn Entrepreneurial Center (Iowa JPEC) offers nationally recognized comprehensive entrepreneurial education programs to all Iowans. At the undergraduate level, Iowa JPEC and the Department of Management and Organizations offer a BBA in Management with an Entrepreneurial Management Track (on-campus and online) to Tippie College of Business students. Iowa JPEC and the College of Liberal Arts and Sciences offer a BA in Enterprise Leadership, available on campus, online and at the Iowa Center for Higher Education in Des Moines. In addition, Iowa JPEC offers the Technological Entrepreneurship Certificate for engineering students, the Certificate in Entrepreneurial Management for all undergraduate students, the Certificate in Arts Entrepreneurship for arts students, and the Certificate in Media Entrepreneurialism for journalism and mass communication students. Advanced entrepreneurship courses are also offered to MBA students on campus and at several locations across the state of Iowa.

Iowa JPEC and its university partners also 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.



In FY18, The University of Iowa 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 to connecting established companies with the university, the Center for Advancement 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.

III. UI's Economic Development Activities in FY18

Impact on economic growth in Iowa

- The UI Research Park is home to 41 companies, with 6 new companies this year. There are over 1,400 employees overall
- UI Ventures currently supports 35 companies including 4 that formed in FY18
 - In FY18, faculty/staff companies obtained over \$27.8 million in external funding, including \$16 million in equity financing and over \$5 million in SBIR/STTR grants
- MADE launched its first two products in Q4 FY18 and filled 11 orders
 - The program employed five undergraduate students, one of whom graduated and was immediately hired by a local medical device company.
- JPEC
 - Start-up Companies Served (New Business Starts) 244
 - Program, Seminar & Workshop Participants 12,658
 - Estimated Job Creation 509
 - Hours dedicated to Clients 13,892
 - Total Clients (Individuals receiving assistance) 862
 - Total Youth Impacted (K-12) 25,350
 - Seed Money Awarded \$241,000
 - Total Participants Across All Programs) +18,667
(Including Academic, Outreach, and Youth)
- UI Center for Advancement assists with aligning recruiting efforts and providing access to UI faculty and staff. It promotes corporate partner and foundation student scholarship and programming opportunities. UICFA facilitates UI's partnership with ICR Iowa to promote "Boomerangs" to return to the state to fill job openings.

Promotion of economic growth in Iowa

- TRI companies have received over \$700,000 in grants in FY18. The grants are used to advance each company's technology and to hire appropriate staff in the TRI space.
- UI Research Park's BioVentures Center hosts monthly lunch and learns in collaboration with SBDC and JPEC throughout the year for start-up companies. The multi-purpose room and other conference rooms in the BVC are used by several collaborating groups, including the Iowa Innovation Corporation and the Iowa City Chamber (where it holds its monthly "Expert Edge" meeting).
- This fiscal year, UIRF is leading the revision of the UI Intellectual Property Policy to enable departments and colleges to invest directly in the commercialization of inventions. Because departments and colleges will see a greater financial return

from this investment, they are also more active participants with UIRF in the commercialization process, sharing advice and scientific and industry contacts.

- UICFA assists with providing platforms to discuss and share examples as to how the University of Iowa can be a resource for industry through industry breakfasts and panel discussions. The center is putting together a panel that will present in partnership with Iowa Association of Business and Industry in Des Moines this year, as well as partnering with organizations in Cedar Rapids and the Quad Cities.
- JPEC:
 - Academic Program – Iowa JPEC delivers campus-wide and online undergraduate education and technology innovation coursework in the MBA program. Majors (BA or BBA) and certificate programs exist for all undergraduate students at UI including specialized programs for students in engineering, performing arts, and journalism. Several degree options are available online and in Des Moines. During FY2018, 4,555 students enrolled in 204 classes and 225 students received a degree.
 - Founders Club / Bedell Lab Student Incubator – The student incubator housed at the 10,000 sq. ft. Bedell Entrepreneurship Learning Laboratory has 17 private offices for the most advanced start-ups, numerous co-working spaces for the others, and several conference rooms. This campus-wide program is open to students from every college and major. The students receive intense mentoring and support as they launch or expand their businesses. The program, one of the first of its kind in the nation, has impacted nearly 1087 students since opening in 2004. During FY2018, the Founders Club supported 113 student start-ups made up of 204 students.

An example student start-up is HealthTech Solutions:

- HealthTech Solutions has created TXP Chat, a software product that helps reduce communication issues that lead to donor-organ loss. They are testing with three organ procurement groups including UIHC and the Iowa Donor Network. They have secured over \$1.2 million in private investment and were recently recognized on Forbes 30 under 30 Healthcare list.
- Student Accelerator Program - Throughout the eight-week program, accelerator teams meet daily to launch their start-up by using Lean LaunchPad methodologies. Through brunch-and-learns, work sessions with experienced mentors, weekly pitches, and lectures, the Student Accelerator aims to drive the start-up process for students, while increasing their start-ups' chance for success. In FY2018, 12 teams and 38 students participated.
- Iowa Medical Innovation Group (IMIG) – IMIG is a two-semester interdisciplinary program that introduces students to all phases of medical device/technology development. Students from the colleges of Business, Engineering, Law, and Medicine collaborate in a real-world environment to

- identify a medical need, create a solution, and move it through the development and commercialization process.
- Business plan and pitch competitions – Iowa JPEC hosts and sponsors a variety of elevator, business model and business plan competitions for UI students. During FY2018, a total of \$241,000 was awarded to start-ups.
 - Start-up Games – This program is a “start-up weekend” for college students. In FY2018, programs were hosted in Iowa City and Sioux City.
 - Jacobson Institute for Youth Entrepreneurship – The Jacobson Institute is a comprehensive program that enriches K-12 students’ lives through classroom and practical educational experiences. Programming and impact includes:
 - BizInnovator Program – Curriculum and teacher training focused on entrepreneurship and business. There are currently 195 teachers using this curriculum nationwide, including educators in every state, impacting 7,800 students. The students can also participate in Innovator Competitions.
 - STEM Innovator Program – This professional development program for teachers infuses innovation and entrepreneurship into K-12 classrooms. During FY2018, 150 educators from 62 schools received curriculum, training, and support, impacting 17,196 students.
 - Summer Camps – Located in Iowa City, Marion, Cedar Rapids, the week-long camps are designed for students in the 5th-9th grades.
 - Seminars, Workshops, and Lecture Series – Iowa JPEC hosted more than 12 different opportunities last year for students, faculty, and people from the community. In FY2018, over 12,000 attendees came to learn from experienced entrepreneurs on a variety of topics.
 - Hawkeye Innovation Expo – This day long, cross-campus celebration of entrepreneurship includes a fair, education programming, and networking. In FY2018, over 500 students, staff, and faculty participated.
 - Alumni-Student Mentoring Program – This was established to connect entrepreneurship students with esteemed alumni in order to enhance students’ professional and personal development for future success. In FY2018, 37 students were paired with 37 mentors.
 - Okoboji Entrepreneurial Institute - Iowa JPEC established the annual, week-long Okoboji Entrepreneurial Institute (OEI) in a partnership among state of Iowa universities and colleges, as well as Iowa Lakes Corridor Development in 2006. Today, this summer program continues to provide students with an immersion into entrepreneurship and business strategy and develop an outstanding network of peers and business professionals.
 - Student Organizations – Several campus-wide clubs and organizations focused on entrepreneurship are sponsored by Iowa JPEC.

Summary of FY18 economic development activities

- UIRF:

	FY18	FY17	FY16	FY15	FY14	FY13
Disclosures	143	93	151	147	139	98
Licenses + options	51	58	40	40	32	29
Patent applications	153	148	297	190	184	142
Provisionals	35	49	88	65	47	57
PCTs	17	29	29	22	21	29
Regular US	44	83	142	110	90	85
Foreign	57	36	126	58	73	28
Issued patents	74	42	67	50	80	74
US	27	24	25	24	25	24
Foreign	47	18	42	26	55	50

- Wellmark Venture Capital Fund
 - Two companies funded at \$100,000 each
- Business Consulting Program
 - Iowa clients served 58
 - Industries include: profit, non-profit, NGO, start-up/entrepreneurial, retail, engineering, financial, veterans' services, software/IT, manufacturing, restaurant, research
 - Iowa counties represented 19
 - Linn, Johnson, Woodbury, Polk, Pottawattamie, Plymouth, Dallas, Jasper, Mahaska, Clinton, Cerro Gordo, Winneshiek, Dubuque, Scott, Benton, Mitchell, Black Hawk, Buchanan, Poweshiek, Douglas County in Nebraska, Cook County in Chicago
 - Hours dedicated to one-on-one consulting 10,188
- Institute for International Business
 - Iowa clients served 5
 - Iowa counties represented 4
 - Industries include: healthcare technology, non-profit (sustainability), food processing, architect/engineering, real estate, agriculture
- Iowa Innovation Associates (IIA) Internship Program
 - Student internships 17
 - Iowa businesses served 13
 - Iowa counties represented 3
 - Johnson, Polk, Mahaska
 - Industries include: agriculture, environmental, automotive, finance, medical, data analytics
- Iowa Medical Innovation Group (IMIG)
 - Number of participants (individuals) 45

- New venture projects 4
 - UI faculty and administrative mentors 8
- Venture School – entrepreneurial training
 - Number of teams 47
 - Number of participants (individuals) 79
- Faculty Innovator Workshops (National Science Foundation NSF I-Corps Program)
 - Number of businesses 15
 - Number of participants (faculty & staff) 32
- Student Accelerator
 - Number of businesses 12
 - Number of participants 38
- Small Business Development Center
 - Start-ups companies served (new business starts) 25
 - Total clients counseled (individuals assisted) 294
 - Estimated job creation 141
 - Hours dedicated to clients 964
 - Single year long term clients 66
 - Total capital – loans + equity \$6,728,842
 - Workshops 8
- Events / Programs / Lectures
 - John R. Hughes Lecture Series attendees 250
 Partner: Hills Bank & Trust
 Speaker: Jeff Hoffman
 - Ben S. Summerwill Lecture Series attendees 145
 Partner: MidWestOne Bank
 Speaker: Oscar Salazar
 - Hawkeye Innovation Expo attendees 530
 - Partners: UI Graduate College, UI Libraries, ICRU- Iowa Center for Research by Undergraduates, Office of the Vice President for Research and Economic Development, UI College of Nursing, Tippie College of Business, UI College of Liberal Arts, and UI College of Engineering
 - Founders Club Fair attendees 200

Support of Economic Development Outreach in Iowa

- UICFA has presented its Impact Report to nine corporate partners to demonstrate specific examples of campus wide engagement with those partners. Examples of engagement include recruitment, experiential learning, board and speaking activity, as well as philanthropic support. The compilation of this information in one report enables UI’s corporate partners to evaluate and extend their engagement with the university.
- Venture School Entrepreneurial Training Program – Iowa JPEC offers an immersive “Lean LaunchPad”, business model canvas, eight-week boot camp training program named

Venture School to accelerate start-ups. Venture School is offered in multiple locations across Iowa. The program emphasizes real-world entrepreneurship through experiential learning, a flipped classroom, and immediate feedback. During FY2018, workshops were offered in Davenport, Iowa City, Cedar Rapids, Des Moines, Sioux City, and online. There were 47 teams made up of 79 entrepreneurs.

- UI Small Business Development Center – The UI hosts an SBDC that serves a five county area (Cedar, Johnson, Iowa, Poweshiek, and Washington counties). During FY2018, the UI SBDC served 294 start-ups including 25 new start-ups. This contributed to the creation of 141 jobs and \$6,728,842 in equity being raised.
- Institute for International Business (IIB) – The IIB is dedicated to advancing knowledge and international skills in business and educational communities through research, education, and consulting. During FY2018, two consulting projects were completed in four counties to assist Iowa businesses with international expansion. The Institute also hosted 25 Mandela Washington Fellows through the State Department’s Young African Leaders Program.
- Business Consulting Program – Iowa JPEC offers business consulting services to entrepreneurial and start-up companies around the state. During FY2018, 75 projects were completed for 58 clients in 19 counties (Linn, Johnson, Woodbury, Polk, Pottawattamie, Plymouth, Dallas, Jasper, Mahaska, Clinton, Cerro Gordo, Winneshiek, Dubuque, Scott, Benton, Mitchell, Black Hawk, Buchanan, Poweshiek, Douglas County in Nebraska, Cook County in Chicago).
- Iowa Innovation Associates Internship Program – Iowa JPEC provides funding support enabling Iowa start-ups to hire UI student interns as they work to grow their businesses. In FY2018, 17 students were placed in 13 start-ups in Johnson, Mahaska, and Polk Counties.
- Pappajohn Entrepreneurial Ventures Competition – In partnership with the Pappajohn entrepreneurship centers at ISU, UNI, Drake, and NIACC, Iowa JPEC sponsors this annual competition to support start-ups around the state. Each year, over \$50,000 is awarded in total to three companies.
- Wellmark Venture Capital Fund – Iowa JPEC is the regional administrator of the \$5 million Wellmark Venture Capital Fund that supports the creation and growth of new businesses throughout the state. Iowa JPEC screens applications, performs due diligence, evaluates business concepts, and assists applicants with their business plans. Iowa JPEC partners with area angel investors, equity fund managers, lenders, the Iowa Economic Development Authority and the Small Business Administration to help business owners secure additional funding. During FY 2018, two businesses each received \$100,000 in funding.
- Faculty Innovators Training Program (NSF I-Corps) – The University of Iowa was awarded a multi-year National Science Foundation (NSF) I-Corps Site grant in FY 2015 to support UI faculty, staff, and student entrepreneurs. This program is a joint effort between the

Office of the Vice President for Research and Economic Development, UI Ventures, and Iowa JPEC. The goal of this program is to accelerate 30 faculty and staff start-ups. During FY2018, 15 start-ups made up of 32 faculty and staff participated.

- Viewpoint Molecular Targeting is an example of an early stage business being supported by this program.
- Regional Partnerships / Eco-system Development – Iowa JPEC partners and engages with numerous local, regional, and statewide organizations to support entrepreneurs and contribute to the vital entrepreneurial ecosystem. These organizations include chambers of commerce, economic development organizations, business accelerators, state agencies, other universities, and community colleges.
- National Engagement – Iowa JPEC engages with several national and international organizations focused on small business, entrepreneurship, economic development and technology commercialization. This includes not only membership but also committee participation and invitations to present best practices.

Regents Innovation Funds Spent to Promote Economic Development in Iowa

- Protostudios: \$304,384 for personnel and general expenses
- UI Research Park: \$100,000 BioVentures Center operating/general expenses
- UI Ventures and MADE: \$386,544 for personnel, student interns, and general expenses
- Office of the President: \$126,336 for consultants/entrepreneurs-in-residence
- Office of the Vice President for Research and Economic Development: \$21,250 for economic development memberships and conference sponsorships

The University of Iowa recognizes the important role it has to play in the state's economic development ecosystem. The university is committed to improving the quality of life in Iowa through a sustainable cycle of research and creative activity. Research at the University of Iowa makes Iowa a healthier, more prosperous, and attractive place to live. The university will continue to ensure that every dollar invested in research is leveraged by developing new economic opportunities for Iowans.