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May 23, 2022

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Dear Members of the Iowa General Assembly:

Pursuant to [2019 Senate File 608 §17.1.b.2.c](#) and [2019 Iowa Acts, Ch. 154.17](#), attached is the annual report prepared by Iowa State University's Center for Industrial Research and Service (CIRAS). This report updates the legislature on the status of the Technology Assistance Program (TAP), its efforts, and a summary of the Industrial Incentive Program (IIP)'s activities.

If you have any questions or need more information, please do not hesitate to contact this office.

Sincerely,


Mark J. Braun

FY21 Progress Report on the CIRAS Technology Assistance Program

Per the code of Iowa, Iowa State University's Center for Industrial Research and Service (CIRAS) is to provide an annual report to the legislature on the status of the Technology Assistance Program (TAP), which is to include information on the Industrial Incentive Program (IIP). Specifically, ISU must "report annually to the joint appropriations subcommittee on economic development and to the legislative services agency the total amount of private contributions, the proportion of contributions from small businesses and other businesses, and the proportion for directed contract research and non-directed research of benefit to Iowa businesses and industrial sectors." This report highlights the CIRAS/TAP efforts, including a summary of IIP activities.

There are three components to the CIRAS/TAP program: directed applied research with individual Iowa companies (IIP), non-directed applied research for the good of industry clusters in Iowa, and technical assistance to individual Iowa companies. Results of each component are provided below.

Background

Iowa State University's Center for Industrial Research and Service (CIRAS) has been helping businesses and their communities prosper and grow since 1963. The CIRAS mission is to improve the quality of life in Iowa by enhancing the performance of industry through applied research, education, and technical assistance. CIRAS does this by working across the state to share its expertise in leadership, growth, productivity, technology, and workforce.

In 2020, 1,631 businesses across Iowa received assistance on projects or attended educational workshops from CIRAS staff and partners. Companies responding to surveys reported \$614 million of total economic impact and over 7,400 jobs created or retained.

The CIRAS Technology Assistance Program, funded by the Iowa Legislature through the Economic Development Appropriations Bill, serves as the primary platform for CIRAS to deliver technology services to Iowa businesses. Details of the impact of CIRAS's technology work with Iowa businesses is detailed below.

CIRAS/TAP: Industrial Incentive Program

The goal of the TAP IIP effort is to help companies incorporate technology improvements into their company through applied research projects with ISU faculty and staff. Highlights are detailed below.

- Five new directed research projects were initiated.
 - One project (20% of the total projects) were with a small company (20 or fewer employees).
 - Four projects (80%) were with larger companies.
- Two projects were completed.
- Eight research projects remain active and have been carried forward into FY22.
- Companies invested \$160,137 in research projects. These funds were matched with \$125,024 of TAP-IIP funding.

CIRAS/TAP: Non-directed Applied Research

The goal of the TAP Non-directed Applied Research effort is to support faculty-led research at ISU centers that meet two criteria:

1. The center must have a mission that is aligned with the State of Iowa economic development roadmap.
2. The center must be partially funded by Iowa industry to investigate near-term technology issues of importance to industry.

CIRAS/TAP funding was used to help support one ISU consortium:

- Polymer and Food Protection Consortium

This consortium has 9 distinct Iowa company members. Appendix A contains the list of active research projects, either funded in FY21 or still underway from FY20.

CIRAS/TAP: Technical Assistance

The goal of the TAP Technical Assistance effort is to connect Iowa companies to a number of technologies, including materials, quality systems, and nondestructive evaluation.

COVID-19 continued to impact our delivery model, with most of the educational events being 100% virtual. This enabled us to reach companies throughout the state and allowed smaller companies the opportunity to gain knowledge of numerous technologies and technology developments. This event delivery model will continue next year.

Technical assistance for Iowa companies continues to be major part of the program. Highlights are detailed below.

- 49 events held with a total of 687 attendees from various companies.
- 201 projects were completed
- 56 counseling sessions were completed in support of companies.

Summary

The Center for Industrial Research and Service (CIRAS) began managing the TAP program in July 2014. Since then, impacts of the program have increased substantially. The CIRAS/TAP program is the primary vehicle for CIRAS to deliver technology services to Iowa businesses.

The aggregated impact from all three CIRAS/TAP program areas are detailed below.

- There were 426 distinct companies served.
- These companies resided in 86 different Iowa counties. See Figure 1.
- Total reported impacts were:
 - \$299 million from new investments, new or retained sales, and savings or avoided costs; and
 - 1089 jobs created or retained.
- Impacts continue to be tenfold greater since the TAP program administration was moved to CIRAS.

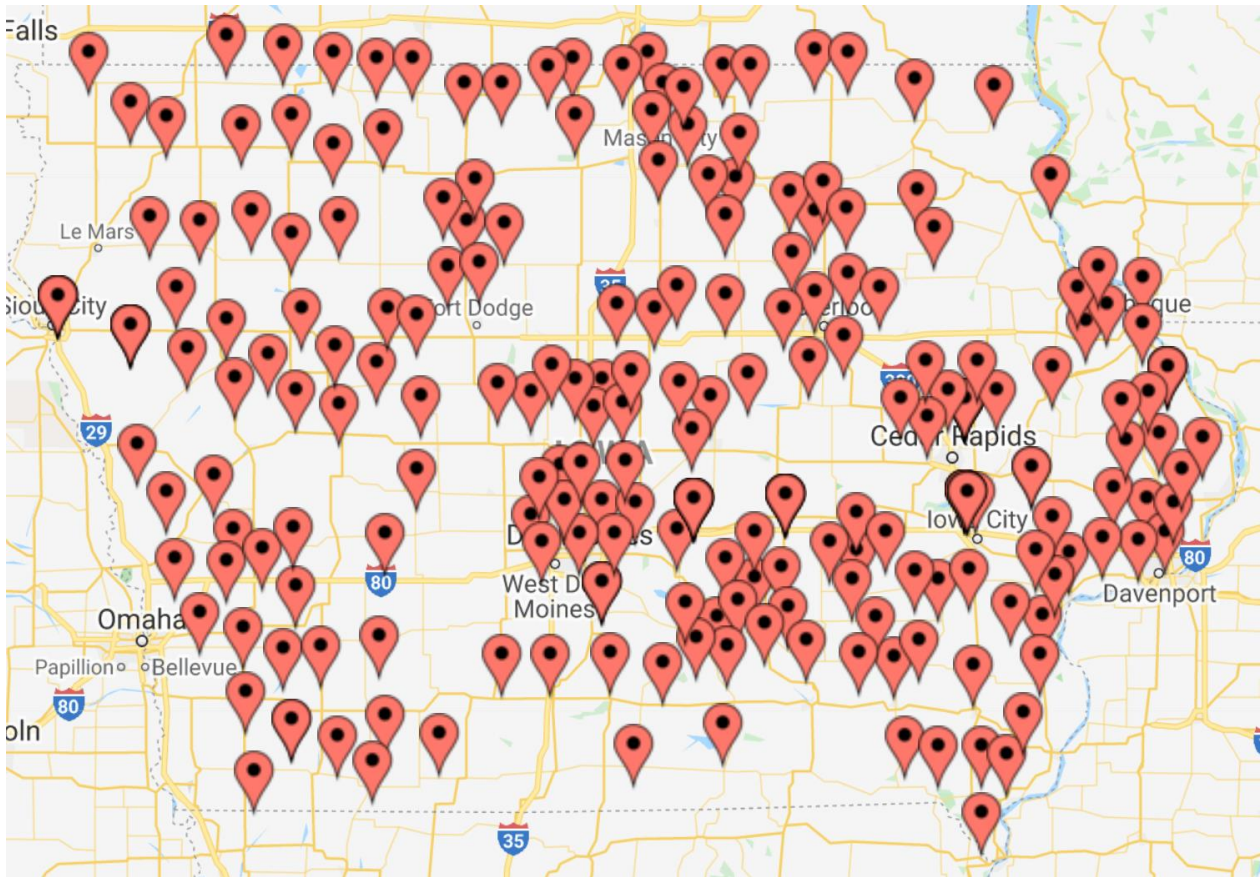


Figure 1: Approximate locations of companies receiving CIRAS/TAP assistance in FY21.

The CIRAS/TAP financials are included as Appendix B. A log of active directed contract research projects are included as Appendix C.

FY21 program activities and results continued to be impacted by COVID along with supply chain and workforce issues which drove companies to focus on shorter term priorities. We expect these issues to continue into FY22. The program continued to provide 100% virtual services using several technologies. We expanding our Industry 4.0 (I4.0) technologies showcased in our Digital Manufacturing Lab to include wearable sensors to enhance workforce safety programs and remote access technology to improve workforce efficiencies. Two additional industry Digital Lab Technology Partners were added: MakuSafe (wearable sensors) and Stratasys (3D printing technology). This Lab was created in 2019 with funding from Federal (Manufacturing Extension Partnership - MEP), State (IEDA and TAP), and Company (Alliant Energy) sources.

FY22 should bring a transition to low density in person events, assessments, and direct service with a focus on improving workforce efficiency. Due to strong industry interest for technologies within the Digital Lab, we are planning on monthly in-person lab events starting in 2022. Another key objective is to add demonstration stations to showcase I4.0 system connectivity technologies.

The CIRAS Technology Assistance Program will continue to improve processes, leverage state funds with aligned federal programs, and expand outreach across the state. For each \$10,000 of investment in the CIRAS TAP program by the Iowa Legislature, companies report:

- Nearly 8 Iowa jobs; and
- More than \$2,100,000 in Iowa company investments, revenue, and savings.



Chris Hill
Director, CIRAS Technology Assistance Program

Appendix A: CIRAS/TAP FY21 Active Project Log - Non-directed Applied Research

- Bio-based coatings research
- Bio-based materials research
- PCR validation and performance
- Packaging regulatory for PFOA/PFOS & heavy metals
- Shelf life extension studies
- Compostability test methods

Appendix B: CIRAS/TAP FY21 Revenue and Expenses

CIRAS/TAP FY21 Revenue and Expenses		
		FY21
Carryforward*		
	TOTAL CFW	849,539
Revenue		
	State appropriation	1,365,602
	Company Fees (Directed Contract Research)	178,633
	TOTAL REVENUE	1,544,235
TOTAL FUNDS AVAILABLE		2,393,774
Expenses		
	Nondirected research - Centers	17,500
	Nondirected research - Faculty grants	45,963
	Sub-total	63,463
	Directed Contract Research (IIP)	208,627
	Directed Contract Research (Company)	223,917
	Sub-total	432,544
	Technical Assistance - CNDE	141,231
	Technical Assistance - Materials	86,669
	Technical Assistance - CIRAS Engineering	308,876
	Technical Assistance - ISU Faculty/staff	131,033
	Technical Assistance - Other	46,567
	Sub-total	714,376
	Equipment	142,386
	Administration	237,744
	Sub-total	380,130
	TOTAL EXPENSES	1,590,513
Carryforward*		
	TOTAL CFW	803,262
* Predominantly carryforward funding for ongoing Directed Contract Research projects		

Appendix C: CIRAS/TAP FY21 Active Project Log - Directed Contract Research

FY19 CIRAS Technology Assistance Program			
<i>Company</i>	<i>Status</i>	<i>Industry Funding</i>	<i>CIRAS/TAP-IIP Funding</i>
FARRPRO*	Closed FY20	\$16,036	\$16,036
LINK MANUFACTURING	Closed FY20	\$40,121	\$40,121
SSAB	Closed FY20	\$39,965	\$21,330
AMERICAN ATHLETIC	Closed FY21	\$33,214	\$22,828
AMERICAN PACKAGING	Closed FY20	\$46,000	\$33,999
GRACE ENGINEERED PRODUCTS	Closed FY20	\$19,970	\$19,381
KAY DEE FEED	Closed FY19	\$12,506	\$10,330
FREEMONT FARMS*	Closed FY20	\$10,698	\$10,697
FY20 CIRAS Technology Assistance Program			
<i>Company</i>	<i>Status</i>	<i>Industry Funding</i>	<i>CIRAS/TAP-IIP Funding</i>
RENEWABLE ENERGY GROUP	Closed FY20	\$17,811	\$17,811
MEDILINE ISOTHERMAL SOLUTIONS*	Active	\$32,621	\$32,621
ALAMCO	Active	\$40,000	\$50,000
INSTA-PRO INTERNATIONAL	Closed FY21	\$21,205	\$21,205
KENT CORPORATION	Active	\$109,621	\$50,000
FY21 CIRAS Technology Assistance Program			
<i>Company</i>	<i>Status</i>	<i>Industry Funding</i>	<i>CIRAS/TAP-IIP Funding</i>
PIGEASY LLC*	Active	\$36,490	\$36,488
KENT CORPORATION	Active	\$49,475	\$25,425
CITY OF AMES	Active	\$20,000	\$20,000
KRYTON ENGINEERED METALS	Active	\$20,992	\$20,991
KENT CORPORATION	Active	\$33,180	\$22,120
<i>FY21 CIRAS/TAP Directed Research New Funding Total</i>		\$160,137	\$125,024
* Small company (20 or fewer employees)			