

2022-2031 Strategic Planning

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CHANGING THE WORLD FOR THE BETTER TAKES TEAMWORK

COLLEGE OF AGRICULTURE AND LIFE SCIENCES
Strategic Initiatives

Executive Summary

By the Office of Research and Discovery.

Updated: March 18, 2024

The global term “Unit(s)” include the following:

- CALS Academic Departments,
- CALS Administrative Offices, and,
- CALS Centers and Institutes

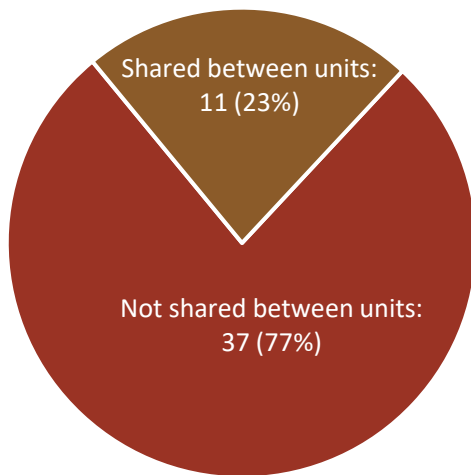
Headers will indicate whether the data presented is for the College or a specific subset.

Each Unit in CALS has been tasked with developing Strategic Initiatives to address one or more college and university Strategic Priorities. Initiatives come in many forms, from ideas for new majors, training programs for income faculty and postdocs, research infrastructure development plans, and partnerships to improve recruitment and retention of students. Initiatives can be at any stage from a nascent idea to a well-developed program, either with or without funding, and as stand along effort of the unit or a multi-unit collaboration.

Strategic Initiatives will be assessed annually, with opportunities to modify or close existing initiatives and develop new ones. In this way, the strategic initiatives program is fluid and responsive to the needs and planning of the units.

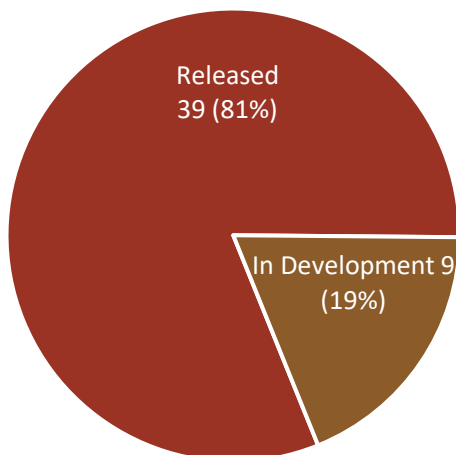
Unit-submitted initiatives have been divided into two reports: **Released** and In Development. The In Development versions are initiatives that are preliminary and should be reserved for the Dean’s use. The Released version can be shared widely.

Strategic Initiatives Unit Report



CALS Strategic Initiatives

Strategic Initiatives may be unique to a unit or shared across multiple units. The tan portion of the pie chart to the left shows the number and percentage of initiatives shared across multiple units, while the red portion shows those not shared with other units. **Each initiative is counted once.**

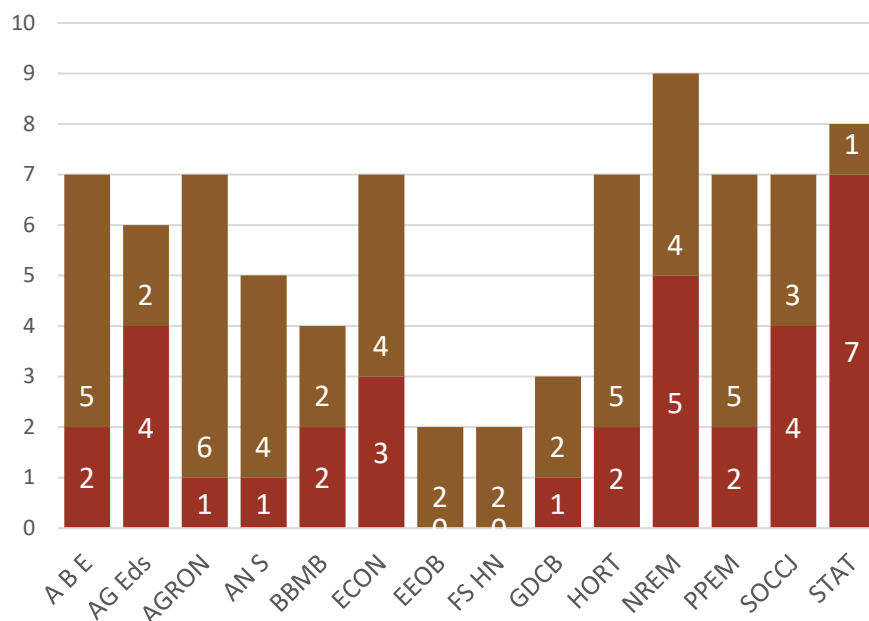


CALS Strategic Initiatives - Status

At the time of submission, departments/units/centers indicate whether their initiative(s) could be shared. Initiatives labeled as 'in development' (tan) are early concepts, not yet ready for prime time. As they become more fully developed, their status will be updated, and their descriptions will be released publicly. Only the Dean's print copy of this report includes 'in development' initiative descriptions (appended following p. 32, where applicable) **Each initiative is counted once.**

Initiatives by Academic Unit

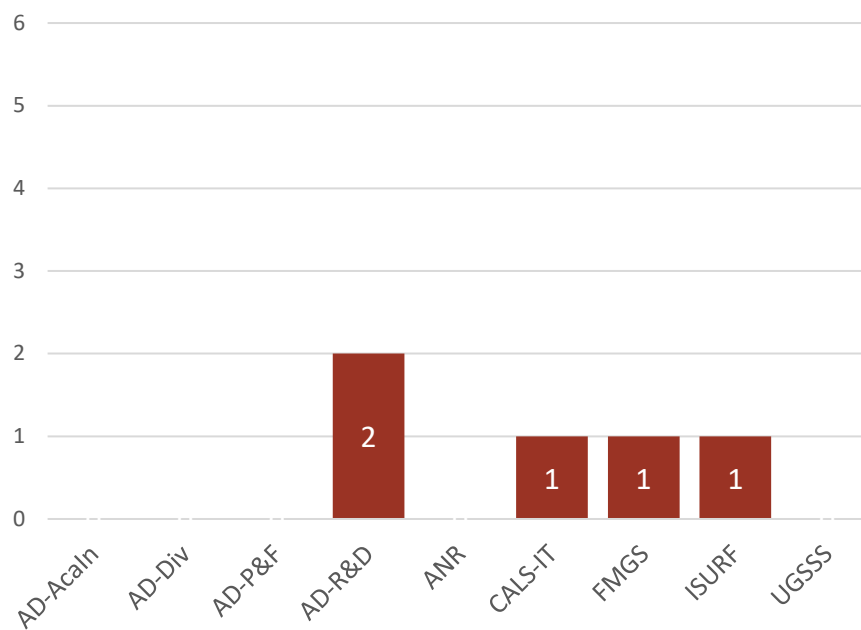
The number of initiatives submitted by **Academic Units** are shown in red, the tan shaded bars identify initiatives that are shared among Units. (e.g., interdepartmental initiatives).



Abbreviation	Academic Unit
A B E	Agricultural and Biosystems Engineering
AG Eds	Agricultural Education and Studies
AGRON	Agronomy
AN S	Animal Science
BBMB	Biochemistry, Biophysics and Molecular Biology
ECON	Economics
EEOB	Ecology, Evolution and Organismal Biology
FS HN	Food Science and Human Nutrition
GDCB	Genetics, Development and Cell Biology
HORT	Horticulture
NREM	Natural Resource Ecology and Management
PPEM	Plant Pathology and Microbiology, Entomology
SOCCJ	Sociology and Criminology
STAT	Statistics

Initiatives by the Administrative Unit

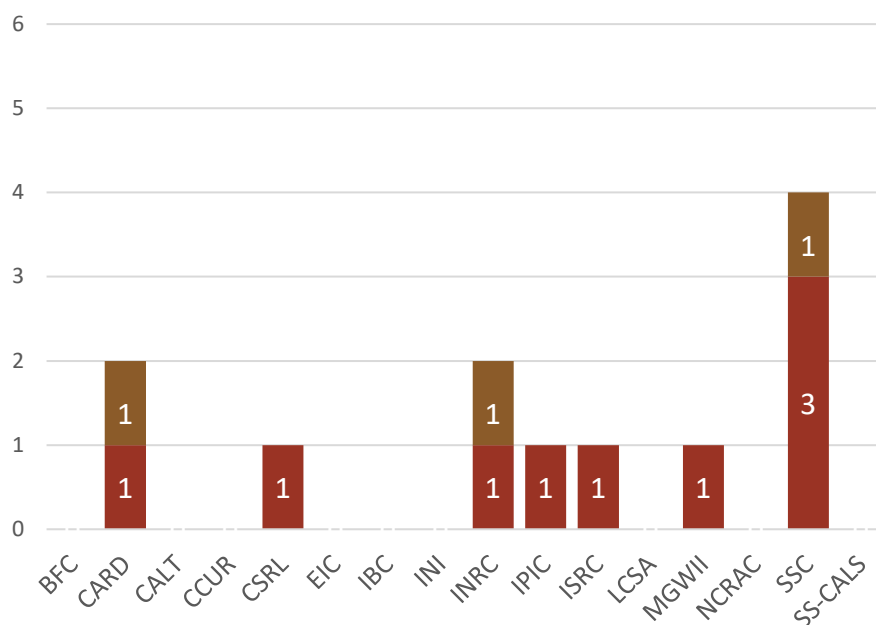
The number of initiatives by **Administrative Unit** are shown in red, the tan bars show the number of initiatives for which the unit is a shared participant. A missing red bar indicates that no initiatives have been submitted by the Unit.



Abbreviation	Administrative Unit
AD-Acaln	Associate Dean, Academic Innovation
AD-Div	Assistant Dean, Diversity
AD-P&F	Associate Dean, Personnel and Finance
AD-R&D	Associate Dean, Research and Discovery
ANR	Agriculture and Natural Resources Extension and Outreach
CALS - IT	CALS - Administrative IT
FMGS	Kent Corporation Feed Mill and Grain Science Complex
ISURF	ISU Research Farms
UGSSS	Undergraduate and Graduate Student Services and Success

Initiatives by Center

The number of initiatives by **Centers** are shown in red, the brown bars show the number of initiatives for which the unit is a shared participant.
If a red bar is not shown, no initiatives have been submitted by the Unit.



Abbreviation	Administrative Unit
AgMRC	Agricultural Marketing Resource Center
BFC	Beginning Farmer Center
CARD	Center for Agricultural and Rural Development
CALT	Center for Agricultural Law and Taxation
CCUR	Center for Crops Utilization Research
CSRL	Center for Sustainable Rural Livelihoods
EIC	Egg Industry Center
IBC	Iowa Beef Center
INI	Iowa Nitrogen Initiative
INRC	Iowa Nutrient Research Center
IPIC	Iowa Pork Industry Center
ISRC	Iowa Soybean Research Center
LCSA	Leopold Center for Sustainable Agriculture
MGWII	Midwest Grape and Wine Industry Institute
NCRAC	North Central Regional Aquaculture Center
SSC	Seed Science Center
SS-CALS	Start Something College of Agriculture and Life Sciences

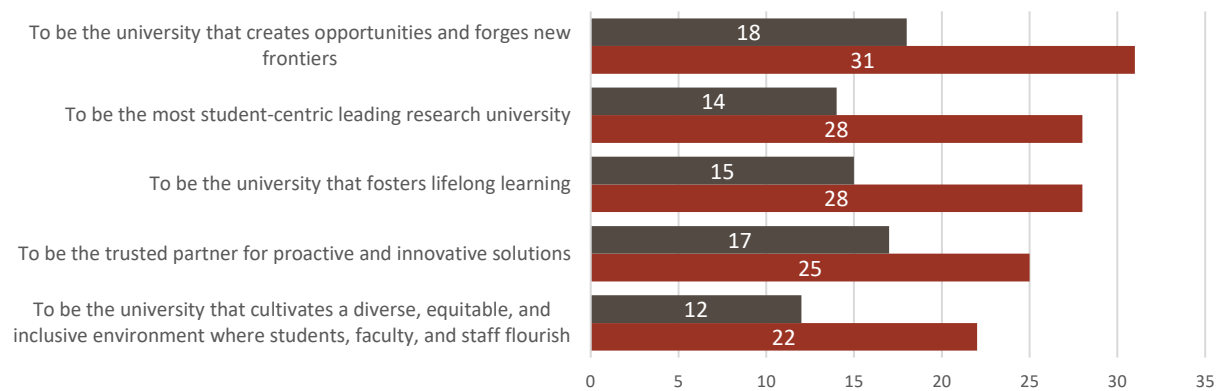
College of Agriculture and Life Sciences Priorities

The red bar is the total number of initiatives aligned to each priority. The grey bar shows the number of Units with initiatives that map to that priority. Bars are sorted from high to low by total number of initiatives.



Iowa State University Statements of Aspirations

The red bar is the total number of initiatives aligned to each aspiration. The grey bar shows the number of Units with initiatives that map to that aspiration. Bars are sorted from high to low by total number of initiatives.



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HOW ARE *You* CHANGING THE WORLD?

2022-2031 STRATEGIC PLANNING
CHANGING THE WORLD FOR THE BETTER TAKES TEAMWORK

Statement of Purpose:

The College of Agriculture and Life Sciences at Iowa State University is a welcoming place for students, faculty, and staff dedicated to improving our understanding and use of agriculture, natural resources, and the life sciences toward helping people and protecting the planet.

Our **mission** is to empower people with the skills and knowledge to improve global food security, protect the planet's resources and agricultural capacity, and navigate a broad array of social challenges to the benefit of Iowa, the nation, and the world. We achieve this mission by translating discoveries and innovations into hands-on teaching and training for our students, for the people of Iowa, and beyond.

Because the challenges we face are complex, their solutions rest at the intersection of science, technology, policy, and human behavior. By design, all these approaches exist in CALS, and we are empowered to work together in alignment to achieve our **vision** for the future, where resources are sustainably managed and people achieve fulfilling lives and livelihoods, locally and globally.

Changing the world for the better takes teamwork in the form of focused commitment and shared goals. The CALS community includes people of many backgrounds and perspectives working together. We **value** the honest and respectful expression of ideas, richness of diversity, a culture of cooperation and belonging, and freedoms from discrimination.

In alignment with the ISU Strategic Plan, *to be* leaders across all aspects of the Land Grant mission, we organize our teaching, research, and extension + outreach activities under these **Strategic Priorities**:

- Innovate and create value
- Engage locally and globally
- Grow meaningful lives and livelihoods
- Learn and educate for today and tomorrow
- Conserve and sustainably manage resources
- Cultivate community, cooperations, and partnerships
- Discover and share new knowledge, approaches, and technologies
- Value people and what they do to advance the College and its mission



**Tell Us
How You
Are Making
A Difference!**

This **Statement of Purpose**, and **Strategic Priorities**, and the **Strategic Initiatives** from each unit in the College, constitute our **Strategic Plan**.

cals.iastate.edu/strategic-planning

In alignment with the **University's Strategic Plan**, we aspire:

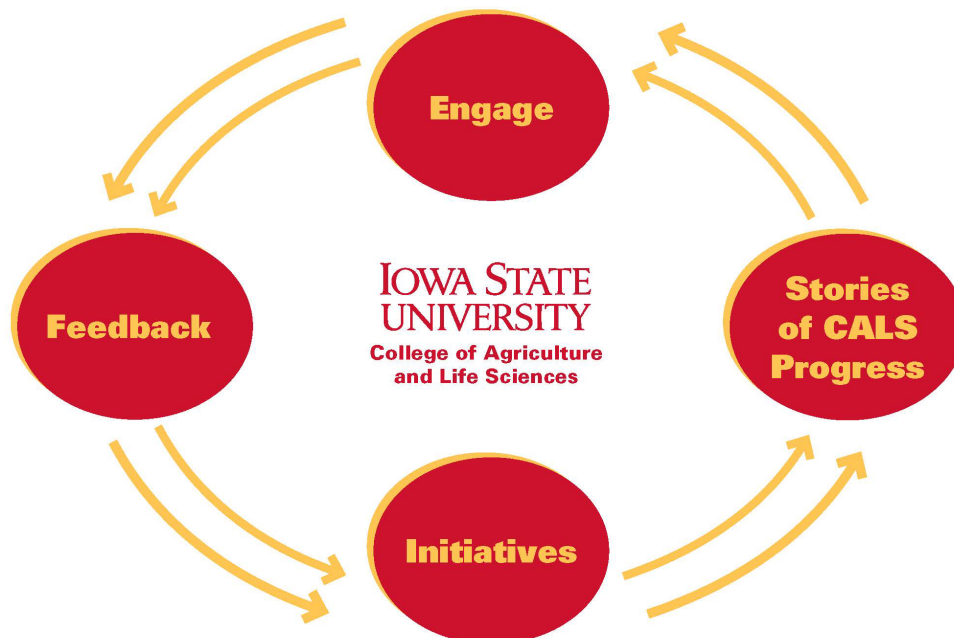
- **to be** the most student-centric leading research university
- **to be** the university that cultivates a diverse, equitable, and inclusive environment where students, faculty, and staff flourish
- **to be** the university that fosters lifelong learning
- **to be** the university that creates opportunities and forges new frontiers
- **to be** the trusted partner for proactive and innovative solutions

How and when:

Next Steps: Each unit in CALS will develop **Strategic Initiatives** designed to address one or more of the Strategic Priorities in the context of their work. Initiatives will include deliverables, assessment indicators, and anticipated timelines. Each year Strategic Initiatives will be assessed, with opportunities for modifications and development of new ones.

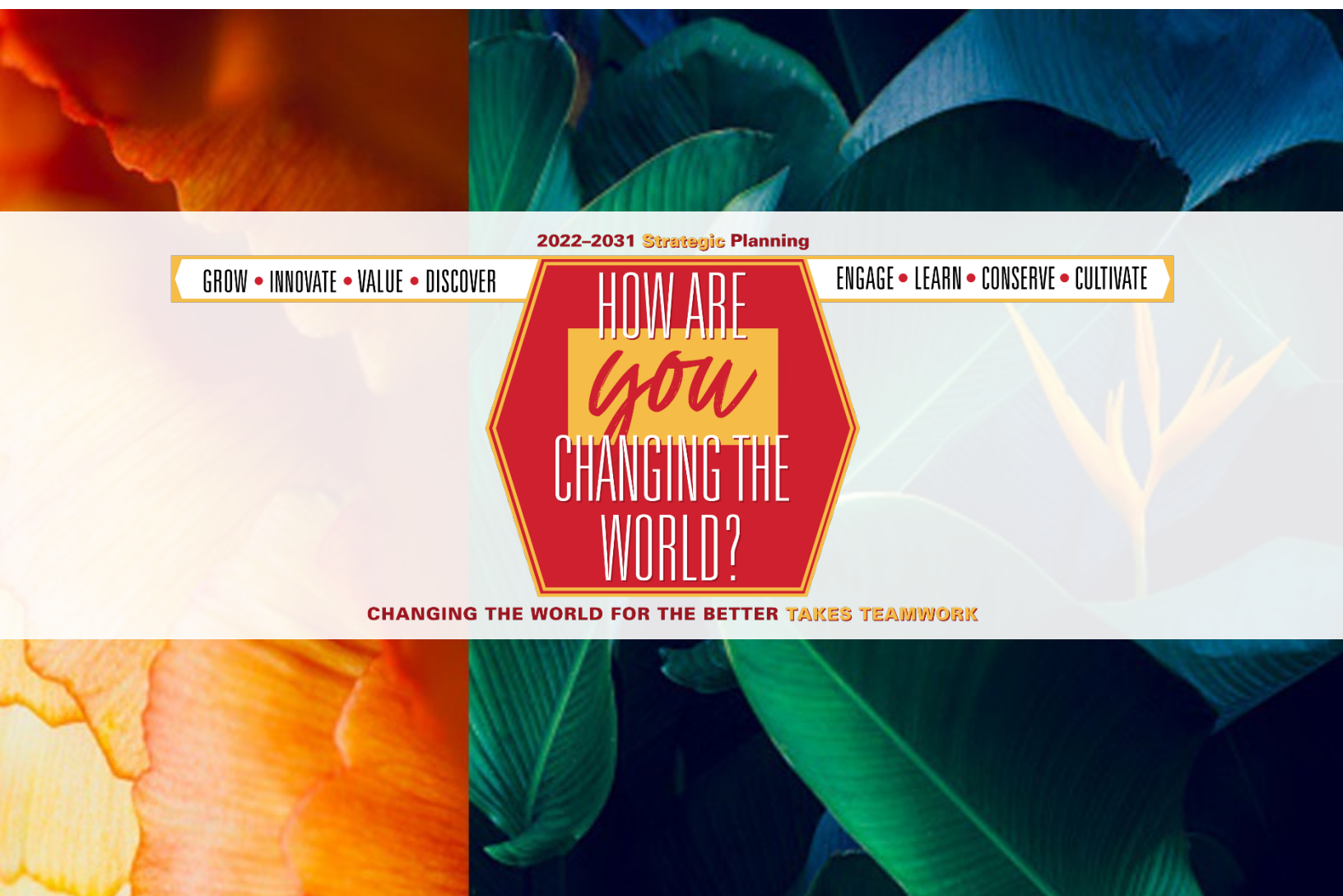
An interactive mural in Curtiss Hall's Harl Commons requesting your input (2023)

Posters describing the Strategic Priorities and your opportunities to join in throughout campus and the state (2023 and beyond)



cals.iastate.edu/strategic-planning

Compilation of Active, CALS Strategic Initiatives, organized by Department.



Strategic Initiatives Department Report

By the Office of Research and Discovery.
Updated: March 18, 2024

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Agricultural and Biosystems Engineering

Develop an enrollment growth strategy for ABE's BS options

Summary:

The education programs in ABE are highly ranked by peers but a hidden gem among prospective students. We wish to make our expertise, facilities, and capabilities more widely available to undergraduate (and graduate) students, and thereby have positive impact on not only the students, but the State of Iowa and beyond through workforce development. This also aligns with our desire to be good stewards of the investment that the State and other stakeholders have made in our department, by using our resources to their full potential.

Outcomes:

We have a brand-new degree option within the Industrial Technology major – starting in Fall 2023 the major includes a curriculum option in Biomanufacturing. This is an area of significant demand from employers, but we will need to work to fill the option with interested students. At the same time, several of our traditional options, particularly in the machine systems areas, have seen enrollment decline that is steeper than other STEM sectors. Given the historical strength of this area, and the exciting cutting-edge research and development in this space from our faculty, we believe we can and must increase student interest in this path of study. Although not directly related we will also be digging deeper into retention numbers, because while our overall retention rates are very high, there are likely pockets where the retention is lower (for example, among first-gen or Pell-eligible students). Addressing this must begin with a better understanding of our current state. We will work closely with recruiting, admissions, and retention experts and thought leaders in both Colleges we sit in, to ensure we are not duplicating efforts but are rather effective partners who leverage ongoing excellence.

We have launched a departmental “Recruiting and Marketing Committee” to drive this effort forward. Key metrics will include enrollment and retention numbers in all of our degree options.

Timeline:

Summer 2023: Appoint Recruiting and Marketing Committee; establish annual goals

Fall 2023: Create an “outreach catalog” and strategic plan for K-12+ outreach, in order to

- understand the existing recruiting and marketing activities we are engaged in already
- have a ready menu of options, ideas, and leaders for when we are invited to participate in events and opportunities
- be able to prioritize activities rather than participating in a completely ad hoc way based on who happens to get what email from whom.

Fall 2023: Develop and begin executing a marketing plan for the ITEC Biomanufacturing option. We have a small biomanufacturing committee working on the option planning, and they will take the lead in this activity, with support from the Recruiting and Marketing Committee.

Spring 2024:

- Meet with College leaders (Andy Zehr and team, for example) to understand CALS and COE opportunities better, and create a white paper / strategy document to inform and guide future activities

Participating Units:

Agricultural and Biosystems Engineering

Status: Released

ISU Initiatives

To be the most student-centric leading research university

To be the university that cultivates a diverse, equitable, and inclusive environment where students, faculty, and staff flourish

CALS Initiatives

Grow meaningful lives and livelihoods

Learn and educate for today and tomorrow

Enhance a culture of mentoring in ABE

Summary:

Historically, we have had great engagement in mentoring of new faculty, and of graduate students within their research groups. Over the last few years we have recognized several gaps in mentoring: staff; graduate students who have a teaching role; postdoctoral scholars who are in a fuzzy area between students and staff. We would like to up our game in those dimensions, beginning with graduate TAs and postdocs, by developing and committing to best practices for those groups.

Outcomes:

Outcomes for this initiative include:

- Graduate student TAs have department level introductory training, introducing them to expectations and communicating ways the department can support them in this role.
- Graduate student and postdoctoral instructors with more course responsibility than running labs and giving student feedback have a teaching mentor during the semester of their role.
- Postdoctoral scholars feel like full-fledged members of the ABE department community. It's unclear how we might measure this but important that we work towards it.

Timeline:

Fall 2023, Spring 2024 start of the semester: graduate TA training and discussion sessions offered for all graduate students in teaching roles.

Fall 2023, Spring 2024 end of the semester: graduate TAs are asked to share challenges and highlight from their teaching experience, and to comment on training and support they received or wish they had received.

Quarterly over the year: Department chair will meet with postdoctoral scholars to build community and better understand their needs for support and mentoring. Key faculty will be engaged in growing numbers as these get-togethers evolve

Participating Units:

Agricultural and Biosystems Engineering

Status: Released

ISU Initiatives

To be the university that cultivates a diverse, equitable, and inclusive environment where students, faculty, and staff flourish

To be the university that fosters lifelong learning

CALS Initiatives

Grow meaningful lives and livelihoods

Cultivate community, cooperation, and partnerships

Value people and what they do to advance the College and its mission

Agricultural Education and Studies

Agriculture, Technology and Outreach (ATO) Building

Summary:

For several reasons including but not limited to 1) space for the safety and needs of our agricultural mechanics courses, 2) outdated and worn out classroom space for AgEdS 450, 3) lack of adequate size for laboratory activities, and 4) lack of adequate size of the machine shop for the size of today's equipment, we are proposing to establish the resources to construct and operate an agriculture, technology and outreach center (ATOC). Invest in long standing programs, which is the foundation of the department. Position would

continue to assist in focus areas of the department/CALS and ISU strategic plan. Resources needed: Foundation assistance in securing this initiative.

Outcomes:

Timeline:

- Worldclass programs need worldclass facilities.
- Retention and graduation rates
- Students participating in high impact practices
- Innovation with new and relevant technologies

This is most likely a 5-8 year project that will need to be queued up with full college and university support.

Participating Units:

Agricultural Education and Studies
Agronomy
Horticulture
Natural Resource Ecology and Management
Plant Pathology and Microbiology, Entomology

Status: Released

ISU Initiatives

- To be the most student-centric leading research university
- To be the university that fosters lifelong learning
- To be the university that creates opportunities and forges new frontiers

CALS Initiatives

Innovate and create value

Submitted on: 6/9/2023 by: Mike Retallick

Conduct a gap analysis of the degree program to meet a growing diverse student body.

Summary:

Investment in new and growing program, multidisciplinary option of BS in Agricultural Studies. Finding clarity on what makes our program unique. Ability to access career placement data (multidisciplinary) and demographic data. We know we must prepare students who may have little to no agricultural background for careers in agriculture. We also know that students definition and interest expand far beyond the traditional production agriculture academic programs. What we don't know is what will drive students toward such programs and what the program and related experiences should look like to meet the needs of students, employers, and society. Resources needed: Time, space, focus groups, review other university programs of similar like and kind, data collection from advisory group, SWOT analysis, reviewing curriculum as a whole, timed touch points with advisors, recruitment and retention strategies, changing dynamics of course delivery (online?), online degree completion program? Career placement data needed.

Outcomes:

Making the program more authentic, meeting needs of students, improving quality/rigor.
Adding new courses, adjusting etc. More students/enrollment.

Timeline:

Could start as early as spring, 2023 and or fall 2023. Need to prioritize activities, timeline, start times.
All three components needed for success. However, our initial thoughts is this project should be initiated by the committee

Participating Units:

Agricultural Education and Studies

Status: Released

ISU Initiatives

To be the most student-centric leading research university
To be the university that fosters lifelong learning
To be the university that creates opportunities and forges new frontiers

CALS Initiatives

Innovate and create value

Submitted on: 6/9/2023 by: Mike Retallick

Endowed Position in Teacher Education in Agriculture

Summary:

Establish funding for an endowed position within agricultural education. Invest in long standing program, which is the foundation of the department. Position would continue to assist in focus areas of the department/CALS and ISU strategic plan. This position and our teacher education program is a centerpiece to our service to lowans with over 300 agriculture teachers in over 265 school districts in all 99 counties of Iowa. Resources needed: Foundation assistance in securing this initiative. Support of the college to solicit funding from allied companies and organizations who 1) often hire and highly regard the students we prepare and 2) value the role of the local agriculture program in introducing and enticing students in agricultural careers

Outcomes:

Timeline:

As funding partner is established; goal by Fall 2025

Participating Units:

Agricultural Education and Studies

Status: Released

ISU Initiatives

To be the most student-centric leading research university
To be the university that fosters lifelong learning

CALS Initiatives

Innovate and create value

Submitted on: 6/9/2023 by: Mike Retallick

Exploring Academic Advising Experiences and Perceptions of Ag Comm Undergraduate Students

Summary:

The approval of the Ag Comm major implies a likely increase in number of students enrolled in the program. While it may be easy to enroll the first cohort, student retention and continued enrollment depends on students' experiences in the department. Therefore, creation of a welcoming and supportive environment is key to promoting retention and attracting prospective students. Academic advising plays a crucial role in improving students experience in college. As such we plan to conduct cross sectional studies involving Agricultural communication undergraduate students to capture their experiences and perceptions of advising so that we can identify better ways of supporting them. Resources needed: Time, effort and software for collecting and analyzing data.

Outcomes:

- Increased retention and enrollment of undergraduate students in the department
 - Improved undergraduate students' experiences in the program, department, college, and university.
 - Number of student's enrolled in the program
 - Number of students graduating from the program
- This includes the establishment of ongoing data collection methods as part of the departments focus on key performance indicators (KPIs). This initiative helps to identify the KPIs, establish data collection methods

with a focus on annual data collection and analysis to guide departmental decision-making around student recruitment and retention.

Timeline:

Spring 2023 – Spring 2030

Participating Units:

Agricultural Education and Studies

Status: Released

ISU Initiatives

- To be the most student-centric leading research university
- To be the university that cultivates a diverse, equitable, and inclusive environment where students, faculty, and staff flourish
- To be the university that fosters lifelong learning
- To be the university that creates opportunities and forges new frontiers
- To be the trusted partner for proactive and innovative solutions

CALS Initiatives

- Innovate and create value
- Grow meaningful lives and livelihoods

Submitted on: 6/9/2023 by: Mike Retallick

Agronomy

Highly structured learning of organic chemistry for students in agronomy, horticulture, and environmental science programs

Summary:

Agronomy 259, Organic Compounds in Plants and Soils, is designed to introduce students to applied organic chemistry in the context of plants and soils. Students in Agronomy 259 learn (1) to identify and classify common organic compounds that occur in plants and soils, (2) how the structure of organic compounds influences their function in plants and their reactivity in soils, and (3) to apply chemical concepts at the molecular scale to practical concerns in agronomy, horticulture, and environmental sciences. The course is designed to foster active participation in each class period by using team-based learning techniques, daily exercises in a flipped-classroom model, and a carefully structured schedule that leads them from learning the language of organic chemistry to a deep appreciation of the composition of the organic compounds they will encounter in subsequent courses in their CALS majors. (learning for today and tomorrow) In the flipped-classroom approach, before coming to class, students study the material for each session by reading, watching a video, and responding to study problems for that session. During class, each student works with two other students to develop her or his understanding further, asking questions of the instructor and teaching assistant, and speaking to represent the small group to the entire class. (sharing new knowledge) This approach builds teamwork skills, promotes self-confidence, and maintains accountability for learning. Attendance is monitored, and electronic distractions are not allowed during class. In addition to classroom participation, student learning is evaluated by low-stakes quizzes, homework problems, and examinations. Practiced over time, daily preparation builds self-confidence, responsibility, and leadership skills – in addition to making learning in class much more effective and enjoyable. (fostering lifelong learning)

Outcomes:

The primary goal for this course is that students will learn the chemical principles that are essential for their success in subsequent courses and in post-graduation careers. But beyond that, the goal is to provide an environment where students learn the value of consistent, disciplined practice, i.e., attending class every

day it meets, coming prepared to work together with a team in every class period, eschewing electronic distractions during class, sharing with and learning directly from their peers, and speaking in public. The success of the course is measured by student ratings of the course at the end of each semester, by the comments from other faculty about 259 students who are well-prepared for their subsequent courses, and by informal comments to the instructor by former students who have found organic chemistry to be useful to their current activities.

This initiative is important because effective student learning is the foundation of the university's mission.

Timeline:

This course was first taught in 2011, and it has evolved to its current, highly structured format since then. It is taught in both semesters of the academic year.

Participating Units:

Agronomy

Status: Released

ISU Initiatives

To be the university that fosters lifelong learning

CALS Initiatives

Learn and educate for today and tomorrow

Discover and share new knowledge, approaches, and technologies

Submitted on: 10/15/2023 by: Michael Thompson

Biochemistry, Biophysics and Molecular Biology

Summer undergraduate research program

Summary:

The program funds 10-12 undergraduates who are doing research with department faculty to make their work continuous through the summer. It also links the research to a science communication component. The goal is to not lose momentum in research during the summer and to linking opportunities with enough salary to keep the students from having to work another job.

Outcomes:

We can measure the number of students in the program each year and we can measure the number of undergraduate researchers in our department each year along with publications and conference participation. We hope that these numbers remain healthy and continue to increase.

Timeline:

This program is active now.

Participating Units:

Biochemistry, Biophysics and Molecular Biology

Status: Released

ISU Initiatives

To be the most student-centric leading research university

To be the university that cultivates a diverse, equitable, and inclusive environment where students, faculty, and staff flourish

To be the university that fosters lifelong learning

To be the university that creates opportunities and forges new frontiers

CALS Initiatives

Grow meaningful lives and livelihoods

Learn and educate for today and tomorrow

Discover and share new knowledge, approaches, and technologies
Value people and what they do to advance the College and its mission

Submitted on: 6/1/2023 by: Mark Hargrove

Work in progress seminars (BIOWIP)

Summary:

Professor Stone Chen responded to the need of graduate students to have more opportunities to present work-in-progress to a broader audience (rather than a “finished product”, which is more typical of a departmental seminar or job interview). He started a regular seminar program just for grad students and post-docs to present what they are currently working on, and the seminar has grown rapidly well outside BBMB. The students report that they value the opportunity, and increasing participation supports this claim.

Outcomes:

Seminar participation is the primary measure of success. Professor Chen has also surveyed attendees using qualtrics to gauge value.

Timeline:

This program is active now.

Participating Units:

Biochemistry, Biophysics and Molecular Biology

Status: Released

ISU Initiatives

- To be the most student-centric leading research university
- To be the university that cultivates a diverse, equitable, and inclusive environment where students, faculty, and staff flourish
- To be the university that creates opportunities and forges new frontiers

CALS Initiatives

- Learn and educate for today and tomorrow
- Cultivate community, cooperation, and partnerships
- Discover and share new knowledge, approaches, and technologies
- Value people and what they do to advance the College and its mission

Submitted on: 6/1/2023 by: Mark Hargrove

Economics

Federal Statistical Research Data Center, Ames Branch

Summary:

In 2015 the Central Plains Research Data Center (CPRDC) was established as a partnership between ISU, University of Nebraska-Lincoln (UN-L), and the University of Iowa (UI) to provide researchers with access to a variety of restricted use federal data sources that are essential for many cutting-edge research projects in the social and behavioral sciences. The primary location of the CPRDC is in Lincoln, NB, making it difficult for ISU faculty and graduate students to access this resource. This initiative is focused on establishing an Ames Branch to facilitate use of this resource. The Economics Department is partnering with the Center for Survey Statistics and Methodology (CSSM) to create the secure space and institutional structures necessary to support the Ames Branch. This effort has financial support from CALS, LAS, College of Business, College of Design, College of Veterinary Medicine, CARD, and the Vice President for Research

Outcomes:

Short run outcomes will be successful creation of the necessary secure space and appointment of a Branch Administrator.

Intermediate outcomes will be successful development of a governance structure for the Branch.
Longer run metrics will include numbers of users and ultimately publications resulting from data access.

Timeline:

Efforts began in Fall 2021; Construction will begin in late 2023, and the Branch should open sometime in 2024. Educating users and promoting use will require several years after that date,

Participating Units:

Economics

Status: Released

ISU Initiatives

- To be the university that fosters lifelong learning
- To be the university that creates opportunities and forges new frontiers

CALS Initiatives

- Learn and educate for today and tomorrow
- Cultivate community, cooperation, and partnerships
- Discover and share new knowledge, approaches, and technologies

Submitted on: 5/22/2023 by: Joshua Rosenbloom

Non-Technical Introduction to Economic Concepts.

Summary:

Develop an introductory-level course that illustrates how economics ways of thinking can be applied to timely real-world problems. Economics offers valuable insights about personal decision-making, business management, public policy, and related issues. But traditional introductory courses emphasize preparation for further study rather than the power of economic thinking to illuminate issues. This initiative seeks to develop a new course that will emphasize the applications and results of economic approaches. It seeks to serve students who will never take another economics course, as well as providing an opportunity to show students why they might want to pursue further study of economics.

Outcomes:

Student enrollment.

Timeline:

Experimental course (ECON 103X) approved Spring 2023. First offered during AY 2023-24.

Participating Units:

Economics

Status: Released

ISU Initiatives

- To be the most student-centric leading research university
- To be the university that cultivates a diverse, equitable, and inclusive environment where students, faculty, and staff flourish
- To be the university that fosters lifelong learning

CALS Initiatives

- Grow meaningful lives and livelihoods
- Learn and educate for today and tomorrow

Submitted on: 5/22/2023 by: Joshua Rosenbloom

Re-Envisioned Master of Science in Agricultural Economics

Summary:

Establish a Master of Science in Agricultural Economics Curriculum that provided rigorous training in economic theory, applied economics and quantitative economic methods that can be successfully completed within 12 months. There is a workforce need in Iowa and surrounding states for workers with analytical and technical skills beyond those associated with a B.S. in Economics or Agricultural Business, but short of the skills imparted by completion of a research Doctorate. At the same time, there are students who wish to pursue further study beyond the B.S. level with the goal of working in industry. By redesigning and streamlining the curriculum for the Master's degree and providing close articulation with undergraduate programs to allow ISU undergraduate to either co-enroll or double count up to 6 credits of undergraduate coursework, the redesigned MSAE seeks to meet these two goals.

Outcomes:

- Number of applicants
- Number of students matriculated
- Successful placement of students in employment
- Opportunities for student internships

Timeline:

The redesigned MSAE was first offered in Academic Year 2020-21, and has served a total of 15 students in two cohorts. During 2022-23 the program paused because of changes in Graduate College policy that disrupted its model and leadership turnover.
A cohort of 10-11 students is expected in AY 2023-24.
Future growth in the next 3-5 years is anticipated.

Participating Units:

Economics

Status: Released

ISU Initiatives

- To be the university that cultivates a diverse, equitable, and inclusive environment where students, faculty, and staff flourish
- To be the university that fosters lifelong learning
- To be the university that creates opportunities and forges new frontiers

CALS Initiatives

- Innovate and create value
- Engage locally and globally
- Grow meaningful lives and livelihoods
- Learn and educate for today and tomorrow

Submitted on: 5/22/2023 by: Joshua Rosenbloom

Horticulture

Biotic Pest Management for Horticulture Crops

Summary:

In a state dominated by row crops and livestock, horticultural crops (sometimes referred to as specialty crops) create careers and bring prosperity to a growing number of producers, retailers, businesses, and entrepreneurs. And the Department of Horticulture at Iowa State University trains students, offers Extension programming, and solves problems for growers through important research and discovery. Essentially, we have all the bases covered except for one (perhaps two). We lack subject matter support in the broad area of biotic pest management (primarily insects and plant pathogens). Because of recent or anticipated retirements and increasing demand for subject matter expertise, we have a critical need for assistance and collaboration in teaching relevant undergraduate and graduate level courses in entomology and plant pathology. Examples of relevant courses include HORT/ENT 283 (Pesticide Application

Certification) and ENT/PLP 452 (Integrated Management of Disease and Insect Pests of Turfgrass). Similar support is needed from these disciplines for horticulture Extension programming and in the creation of new information through research scholarship. In all our programmatic areas (turfgrass, woody and herbaceous ornamentals, field-grown fruits and vegetables, and all crops grown in controlled environments) we have great need for pest management support and partners with whom we can collaborate. If implemented, this initiative will help deliver economic benefits to specialty crop producers across Iowa, thereby aligning with CALS strategic priorities, Innovate and Create Value and Engage Locally and Globally.

Outcomes:

Success would be realized in the form of additions to the academy. Specifically, term or tenure-track faculty hired to support teaching, research, and Extension in areas related to biotic pest management for horticultural crops. Ideally, an entomologist and a plant pathologist would be hired, each with position responsibilities in teaching and Extension, with minor appointments in research.

Timeline:

Retirements in entomology and plant pathology, both anticipated and actual, have caused the Department of Horticulture to move this important initiative to the top of our list of priorities. Therefore, the hiring of these faculty is of immediate interest and concern.

Participating Units:

Horticulture
Plant Pathology and Microbiology, Entomology

Status: Released

ISU Initiatives

To be the most student-centric leading research university
To be the university that fosters lifelong learning
To be the trusted partner for proactive and innovative solutions

CALS Initiatives

Innovate and create value
Engage locally and globally
Learn and educate for today and tomorrow
Discover and share new knowledge, approaches, and technologies

Submitted on: 6/14/2023 by: Jeff Iles

Plant Breeding/Crop Improvement in Horticulture (Specialty) Crops

Summary:

Traditionally, the development and introduction of horticulture crop (specialty crop) germplasm was an important function for university plant scientists. But because of the extended timeline required to research, test, and evaluate plants for release to commerce, with no guarantee of success, this important research gradually transitioned to private industry. Today, there is renewed interest in breeding work (vegetables, fruit crops, ornamentals), and thanks to new technologies (marker-assisted breeding, biotechnology approaches, gene editing, etc.), some of this work is finding its way back to universities with strong horticulture programs. This could/should include Iowa State University. The goal is to create/develop/discover new varieties and cultivars with enhanced nutritional value, abiotic stress tolerance, climate resiliency, aesthetic value, and insect/disease resistance.

Outcomes:

Of course, this initiative is solely dependent upon the hiring of a new, tenure-track faculty member dedicated to germplasm discovery and enhancement. The “easiest” entry point would be in the realm of food crops, and more specifically, vegetable crops. Currently, the pool of candidates who would be competitive for this position is unknown, but I am confident qualified candidates do exist. The successful candidate will bring value to CALS and the university, as well as to the horticulture industry in Iowa, in the form of new and improved crops for fresh market and for processing.

Timeline:

Not every strategic initiative can be ranked at the top of the list, but this one is very close to our number one priority. Therefore, the hiring of an appropriate faculty member is of immediate interest and concern.

Participating Units:

Horticulture

Status: Released

ISU Initiatives

- To be the university that fosters lifelong learning
- To be the university that creates opportunities and forges new frontiers
- To be the trusted partner for proactive and innovative solutions

CALS Initiatives

- Innovate and create value
- Engage locally and globally
- Learn and educate for today and tomorrow
- Cultivate community, cooperation, and partnerships
- Discover and share new knowledge, approaches, and technologies

Submitted on: 7/10/2023 by: Jeff Iles

Natural Resource Ecology and Management

CALS Initiative: Develop a Regional Aquaculture Hub

Summary:

A new Regional Aquaculture Hub will provide synergistic benefits to CALS by attracting new undergraduate and graduate students throughout the region while providing new research, extension, and economic development opportunities for the College and for Iowa. Seafood is an important source of protein for people throughout the world and by 2030 aquaculture will supply 62% of the world seafood consumption. The cultural richness of aquaculture is exemplified by its beginning in 2000 BC in China and its continued growth worldwide to meet societal needs for sustainable protein. In Iowa, there is a large interest in aquaculture for food production due to the state's rural and agriculture-based economy and Iowa aquaculture was recently valued ca. \$4 million (USDA 2018). Beyond food production, aquaculture is also a vital component of natural resource management and needed to maintain sportfish populations and recover threatened and endangered aquatic species. Iowa State University is uniquely positioned to develop regional expertise in aquaculture due to: 1) location of the North Central Regional Aquaculture Center (USDA-NIFA funded program), 2) state's agriculture commodities of soybean and corn production that can result in value-added agricultural products (both feed components for aquatic animals (noted by respective grower associations)), 3) location of the USDA National Animal Disease Center, and 4) recent announcement of the New Feed Mill and Grain Science Complex. The role of aquaculture in meeting the University and CALS strategic plans includes ensuring students receive an exceptional education experience (Goal 1) that includes entrepreneurship that meets future societal needs for sustainable and heart-healthy protein while also developing interdisciplinary research (Goal 2) that includes animal production, economics, animal health that meet ecological principles. Aquaculture has a role in addressing Iowan's who wish to diversify the state's economy (Goal 3) while increasing the diversity of students and staff at Iowa State University (Goal 4). The number of Midwestern universities that offer aquaculture courses have continued to decrease despite increasing needs by state, federal, and private partners and substantial interest by students to pursue careers in aquaculture. The one NREM aquaculture class (campus and on-line) at Iowa State University is consistently fully enrolled (50+ students) by students from multiple CALS departments. In the current aquaculture class students learn how aquaculture is influenced by ethic and economic diversities and invasive and endangered species issues. Consequently, a Regional Aquaculture Hub focused on developing sound aquaculture practices that meets societal needs (e.g., One Health ISU initiative, ISU

Health Research Initiative), advance CALS food initiatives (e.g., CALS Farm, Food & Enterprise Development; Center for Food Security & Public Health) while also addressing environmental concerns would provide tremendous new value to CALS through teaching and research opportunities while advancing the Universities and CALS strategic plans.

Outcomes:

Timeline:

Participating Units:

Natural Resource Ecology and Management
Agricultural and Biosystems Engineering
Animal Science
College of Veterinary Medicine
Economics

Status: Released

ISU Initiatives

To be the university that creates opportunities and forges new frontiers
To be the trusted partner for proactive and innovative solutions

CALS Initiatives

Innovate and create value
Engage locally and globally
Grow meaningful lives and livelihoods
Conserve and sustainably manage resources
Cultivate community, cooperation, and partnerships
Discover and share new knowledge, approaches, and technologies

Submitted on: 9/21/2023 by: Stephen Dinsmore

CALS Initiative: Expanding the Learning and Leadership Sciences Program- Creating an Incubator for Excellence in Learning, Leadership and Scholarship of Teaching/Learning

Summary:

Initiative Focus: Iowa State University's Learning and Leadership Sciences (LLS) Minor¹, an effort launched in 2015, currently includes participation of faculty members from CALS units as well as staff in the ISU Dean of Students Office and Athletics Department. It is based on two foundational/developmental courses offered at ISU since 2006 (now LLS 112 and 114) and has served more than 600 students primarily from departments and programs within CALS. Students who have completed the minor to date come from Agricultural Education & Studies, Animal Science, Food Science, Global Resource Systems, Horticulture, NREM and the SOE. This program is based on the following principles: 1) The world needs good leaders; 2) Every student has potential to learn/practice specific skills required for effective leaders; 3) Effective leadership is based on continuous individual learning and intentional thinking; and 4) Society depends on citizens who use their minds well to lead within their professions and communities. The LLS program already strongly supports Iowa State's strategic goal to "ensure that students receive an exceptional education" as well as CALS' goal to "support students as they seek to make a difference in the world." Further, individual LLS course outcomes directly support seven of CALS' Student Learning Outcomes: Leadership, life-long learning, problem solving, communication, entrepreneurship, ethics, and multicultural awareness. Data (from 2006-2019) previously shared with CALS document the value of the program for student retention and academic success at ISU, as well as success following graduation. Through support from this initiative, the LLS program could provide opportunities for many students to develop leadership skills and engage in experiences to poise them for a lifetime of learning and leadership Purpose: We propose a formal CALS Initiative to: (1) Redesign and strengthen the "platform" and expand the reach of the now five-course LLS program; (2) Enhance recruiting as students arrive at ISU/CALS; (3) Support/highlight students' community service projects in the program; (4) Develop an Advisory Board (with representation from three CALS units as well

as three external experts); and (5) Encourage continued SOTL for faculty/staff working with the program. Additional goals: A CALS Initiative will enhance the scholarship of teaching and learning that has long been a hallmark of the LLS program. LLS program leaders' commitment to student development is closely integrated with efforts to support the work of colleagues through delivery of workshops, conference presentations (local, regional and national), acquisition of competitive grants, and publication of peer-reviewed articles. These efforts have broadly disseminated our unique approach to bringing educational theory forward to improve classroom practice. Developing a CALS Initiative for this already successful program will enhance CALS efforts and increase program visibility, enable program staff to interact with additional students and academic advisors, and greatly expand program capacity to generate additional scholarship.

Outcomes:

Timeline:

Ongoing since 2006

Participating Units:

Natural Resource Ecology and Management
Agricultural Education and Studies
Animal Science
Food Science and Human Nutrition
Global Resource Systems
Horticulture
School of Education

Status: Released

ISU Initiatives

To be the most student-centric leading research university
To be the university that cultivates a diverse, equitable, and inclusive environment where students, faculty, and staff flourish
To be the university that fosters lifelong learning

CALS Initiatives

Innovate and create value
Learn and educate for today and tomorrow
Cultivate community, cooperation, and partnerships

Submitted on: 9/21/2023 by: Stephen Dinsmore

Connecting People with Place- Building Sustainable Urban Ecosystems

Summary:

We propose an intentionally integrated teaching, research, extension/outreach initiative that would engage new audiences and meet urgent needs in urban ecosystems, including energy and water conservation, climate change, biodiversity conservation, and human well-being. Initiative Focus: Urban ecosystems and their sustainability are of increasing concern as more and more people live in cities. The opportunity to strengthen our focus on urban ecosystems and their characteristics will enable us to enhance existing course offerings, offer additional study opportunities for undergraduate and graduate students, and directly engage students and urban residents in research. Further, it will allow us to enhance ongoing research, extension and outreach efforts that emphasize important connections to nature for urban residents of all ages. This initiative ties directly to ISU's Grand Challenge research areas of "building sustainable human and natural ecosystems" and "promoting healthy lives," the university's Strategic Plan Goal #3 to "improve quality of life for all Iowans by promoting health communities, people and environments," and directly addresses priorities of CALS to "advance agriculture and life sciences research to address major societal challenges, including food and economic security, productive and sustainable food systems, and stewardship of natural resources and biodiversity." Our previous efforts indicate that there is great potential

to improve the overall sustainability of cities and foster a stronger bond between ISU and the very diverse stakeholders who reside in urban areas. Previous work by NREM faculty/staff- participation in ISU's Sustainable Cities research, the recent Sustainable Urban Systems workshop (sponsored by NSF), leadership of the Iowa UrbanFEWS (Food-Energy-Water Systems) project (also NSF funded)- position us well to broaden efforts in urban systems science. Courses offered in this arena have included regular elements of our curriculum as well as special topics courses. Historically, extension educators in NREM have served clientele in urban forestry this initiative could support broader collaboration with existing programs (e.g., Master Gardeners, Master Conservationists, and Food, Farm, and Enterprise Development) or develop new collaborations with urban extension regions. Purpose: Rapid expansion of urban areas in the state is ongoing and a majority of Iowa's people (over 64%) live on a small proportion of the land area within cities' boundaries. To achieve the land-grant mission of serving the scientific and agricultural needs of all state residents, engagement and leadership on challenges unique to urban landscapes is crucial. Iowa cities present a number of challenges for urban agriculture and natural resource stewardship, including contributions to extreme floods, diminished water and air quality, intense urban heat conditions and reduced biodiversity. In addition, cities have a disproportionate impact on the ecology and livelihoods of nearby rural areas through their intensive energy use, increased global greenhouse gas emissions, high levels of freshwater consumption and waste production and their propensity to introduce invasive species. Engaging Iowa's urban residents in research, teaching, and learning will reinforce or create new connections with nature in cities that will lead to improvements in environmental stewardship, physical and mental health, and quality of life. Approach and Goals: Personnel within NREM seek to position the department at the center of these challenges. We expect to address teaching, research and extension/outreach needs unique to the urban/rural landscapes of Iowa and the Midwest, and to expand the reach of NREM and CALS to more diverse audiences/stakeholders.

Outcomes:

Timeline:

Participating Units:

Natural Resource Ecology and Management
Agricultural and Biosystems Engineering
Agronomy
Center for Agricultural and Rural Development
College of Design
College of Engineering
College of Liberal Arts and Sciences
Horticulture

Status: Released

ISU Initiatives

To be the most student-centric leading research university
To be the university that cultivates a diverse, equitable, and inclusive environment where students, faculty, and staff flourish
To be the university that creates opportunities and forges new frontiers
To be the trusted partner for proactive and innovative solutions

CALS Initiatives

Innovate and create value
Engage locally and globally
Grow meaningful lives and livelihoods
Learn and educate for today and tomorrow
Cultivate community, cooperation, and partnerships

Submitted on: 9/21/2023 by: Stephen Dinsmore

Iowa Agriculture Carbon Assessment

Summary:

I think it is relevant to the department in two ways: ● The way nitrogen moves through the environment is linked with carbon; thus, achieving water quality goals related to nitrogen requires attentiveness to carbon. ● In the last year, it's hard to find a farm magazine these days without an article about carbon in it. The Biden administration has signaled that it's looking for the US ag sector to lead on climate change mitigation. Business wise, that's a good play for US ag: it's how we maintain global competitiveness in the world and industry leaders know this. Thus, there's finally a window of opportunity for us to help address agricultural GHG emissions, farmers become climate change heroes, and conserve all the species we hold dear. Following the 3/10 Carbon Removal Forum, BEI and CALS will be cosponsoring a lecture series "Conversations about Carbon," which is geared toward building shared understanding and capacity around carbon dynamics and management across the university and engage external partners. CALS goal is to spur innovation and make CALS faculty more competitive with federal grants. Right now, we have 250 people registered for the Carbon Removal Forum – mostly ISU students and faculty as we are the target audience, but also people from government agencies, non-profits, industry, and concerned citizens. It also links with University Sustainability Committee goals. External groups like Iowa Soybean Association and The Nature Conservancy see this effort as foundational to things they are trying to do.

Outcomes:

Timeline:

Participating Units:

Natural Resource Ecology and Management
Agronomy
Animal Science
BioCentury Research Farm
Iowa Nutrient Research Center

Status: Released

ISU Initiatives

To be the university that creates opportunities and forges new frontiers
To be the trusted partner for proactive and innovative solutions

CALS Initiatives

Innovate and create value
Engage locally and globally
Conserve and sustainably manage resources
Cultivate community, cooperation, and partnerships
Discover and share new knowledge, approaches, and technologies

Submitted on: 9/21/2023 by: Stephen Dinsmore

NREM or CALS Initiative: Collections Manager for Iowa State University Natural History Collections

Summary:

A collections manager for the vertebrate and botanical natural history collections housed in Science II would enhance teaching, provide opportunities for student involvement, and leverage grants support for needed renovations. The natural history collections at Iowa State University represent a valuable repository of the biological heritage of the people of Iowa. and provide a valuable record of the biodiversity of Iowa and prairie ecosystems as well as an important resource for teaching and research for undergraduates, graduate students and faculty. The collections are housed within the Department of Natural Resource Ecology and Management (NREM) and consists of the largest collection of vertebrates in Iowa. The collection currently houses over 3200 plant, 3000 bird and 2500 mammal specimens, over 4500 reptile and amphibian specimens, and more than 48,000 fish specimens, representing more than half of all known Iowa fish in US museum collections. Previous university support has resulted in digitization of the fish collection which is

now searchable via the internet <https://www.gbif.org/dataset/ee21cfcd-9f34-47f0-ab46-9b21e9db5c5a>. There are currently 7 courses offered by NREM and Ecology Evolution and Organismal Biology at the undergraduate and/or graduate level that routinely utilize specimens from the collections that enroll well over 600 students a year and these courses provide foundational knowledge in biological diversity that is key to a number of employment opportunities. The Biological Illustration Program often utilizes the collection, and the collections host a number of research visits and makes loans of specimens for research and education and outreach. Though the specimens housed in the collections have always been utilized in courses and outreach at ISU, this new position would teach a new course in natural history collection management which will bring a new opportunity for students interested in museum curation as a career, but will also be of general usage to wildlife science and biology majors needing experience in basic techniques of specimen preparation, preservation, and storage, as well as a background in field notes and databasing. Experience suggests that this course will generate substantial interest from students from a number of CALS majors. This course will also provide ISU undergraduate students unique opportunities to conduct collections-based research projects under the guidance of faculty members. Although NREM faculty currently serve as informal collections managers and strive to maintain the collections, the size of the collections exceeds the current allocated space and inhibits their optimal use for instruction. Two previous applications for NSF support for collection improvement were unsuccessful and the primary reason stated by reviewers was the perception of a lack of commitment from ISU for the natural history collections in the form of a collections manager. A full time collections manager position would accomplish a number of goals: leveraging NSF support for collections improvement; giving students opportunities to learn and practice methods in collections management via new course offerings; assist course instructors with organizing specimens for collections based courses.

Outcomes:

Timeline:

Participating Units:

Natural Resource Ecology and Management

Status: Released

ISU Initiatives

To be the most student-centric leading research university

To be the university that fosters lifelong learning

CALS Initiatives

Learn and educate for today and tomorrow

Cultivate community, cooperation, and partnerships

Value people and what they do to advance the College and its mission

Submitted on: 9/21/2023 by: Stephen Dinsmore

Plant Pathology and Microbiology, Entomology

Integration of Independent Undergraduate Research Experiences into PPEM Programs

Summary:

The purpose of this initiative is to better integrate authentic research experiences into the curricular programs of students in the undergraduate Microbiology major, as well as the Global Health and Insect Science minors. A growing body of evidence supports the view that authentic (i.e., discovery-based) research experiences enhance the engagement and performance of students in their coursework; by doing so, these activities play an important role in student retention. Authentic research experiences also provide students with opportunities to explore different facets of a discipline (i.e., medical microbiology, plant microbiology, food microbiology, etc.) while building their resumes and establishing a professional network. The underlying premise of our proposed approach is that students will begin authentic research from their

first day as a Microbiology student at ISU, and continue to do through each year of their program until they graduate. This sequence will allow them to foster their critical thinking and problem solving skills while they become increasingly independent in their studies. Although undergraduate research opportunities already exist within ISU and CALS (e.g., University Honors Program, Science with Practise), they are selective in that participant's either have to achieve specific entry qualifications or actively seek out the opportunity. Our program differs in that participation would be mandatory for all majors, such that students who are ambivalent or uncertain about their prospects, or would not normally know how to find a research opportunity, would still be able to fully benefit from the experience. With a focus on research, innovation, and discovery, this initiative is well aligned with the University priority of being "the most student-centric leading research university". In addition, it aligns well with the CALS priorities of "innovating and creating value", and, "discovering and sharing new knowledge, approaches, and technologies".

Outcomes:

The first step of our "Independent Undergraduate Research Experiences" (IUREs) is already in place; all incoming freshman Microbiology majors must take Micro 115, which is a course-based research experience based on the nationally recognized SEA-PHAGES program (<http://seaphages.org>). The goals for this initiative are to build from the success of Micro 115 to; (i) to create Micro 290 and Micro 390 as courses that serve as the home for sophomore and junior research experiences (Micro 490 already exists), (ii) examine the purpose and objectives of our capstone senior research course (Micro 440) to determine if it is better-suited to providing research experiences for our transfer students and/or minors, (iii) to build a network of ISU faculty/units, industry partners, and other stakeholders (e.g., NGOs, commodity boards, etc.) that will provide research opportunities for our students, and (iv) establish best practices for assessing the quality of these experiences.

Timeline:

The timeline for this initiative will be at least three years. This is partly based on the timing of the ISU calendar "freeze", such that new courses (i.e., Micro 290, Micro 390) cannot be offered until fall 2025. However, early steps to be completed before then will be the creation of our research experience network and establishment of approaches for assessing the quality of IUREs. Assessment of the impacts of this initiative on student enrollment and performance will occur over a longer time period to ensure that meaningful trends can be detected.

Participating Units:

Plant Pathology and Microbiology, Entomology

Status: Released

ISU Initiatives

To be the most student-centric leading research university

CALS Initiatives

Innovate and create value

Discover and share new knowledge, approaches, and technologies

Submitted on: 6/9/2023 by: Steve Harris

Integration of a One Health Perspective into PPEM Research and Teaching

Summary:

As defined by the CDC, One Health is a "collaborative, multisectoral, and transdisciplinary approach working at multiple levels with the goal of achieving optimal health outcomes recognizing the interconnection between people, animals, plants, and their shared environment". Although these interconnections remain poorly understood, their importance in shaping the outcome of human, animal, and plant disease is widely recognized. The purpose of this initiative is to begin the process of integrating a One Health perspective into the teaching and research programs within PPEM. In terms of teaching, activities pursued as part of this initiative will include ensuring alignment of the course learning objectives in our Global Health minor with One Health principles, working with partners in other departments and colleges to establish seminars

and/or short courses focused on One Health, and development of Study Abroad or Study USA courses that emphasize a specific aspect of One Health. In terms of research, activities pursued as part of this initiative will include adopting an integrated approach to diagnostics that leverages best practices across our different diagnostic services (Veterinary Diagnostic Lab, Plant and Insect Diagnostic Clinic, Seed Lab), as well as identifying and building strength across the college and university in relevant disciplines such as epidemiology, disease forecasting, and vector biology. The latter will include pursuit of both internal and external opportunities for joint seed funding in these disciplines. With a focus on the generation of new knowledge that informs novel approaches for disease control, this initiative fits well with the University priorities of being “the university that creates opportunities and forges new frontiers” and being a “the trusted partner for proactive and innovative solutions”. In addition, it aligns well with the CALS priorities of “engaging locally and globally”, and, “discovering and sharing new knowledge, approaches, and technologies”.

Outcomes:

Given that the multiple disciplines represented in PPEM each encompass aspects of the One Health approach to disease control, the department is well-positioned to readily integrate this perspective into our teaching and research programs. On a general level, our success in accomplishing this will become apparent through better recognition by our faculty, staff, and students that disease outcomes are impacted by interconnections between people, animals, plants, and their shared environment. Tangible evidence of success would include increased funding for research projects that are anchored by a One Health perspective, the implementation of regular meetings between all diagnostic units on campus to share observations and technical tips, successful delivery of Study Abroad or Study USA courses that have a One Health emphasis, and increased enrollment in our Global Health minor.

Timeline:

Year one – Global Health curriculum assessment; establish seminar series/short course; develop Study Abroad/USA courses; initial diagnostics meeting.

Year two – modify Global Health curriculum as needed; offer Study Abroad/USA courses; identify and seek joint research funding opportunities

Participating Units:

Plant Pathology and Microbiology, Entomology

Status: Released

ISU Initiatives

To be the university that creates opportunities and forges new frontiers

To be the trusted partner for proactive and innovative solutions

CALS Initiatives

Engage locally and globally

Discover and share new knowledge, approaches, and technologies

Submitted on: 6/9/2023 by: Steve Harris

Sociology and Criminology

Agricultural and Rural Policy Studies Name and Curriculum Change

Summary:

Both students and alumni have expressed the need for changes in the current Agriculture and Society (AgSo) major. More students are interested in pursuing careers in agricultural policy. There is interest in having more policy-related courses, and for courses to provide more tangible job market skills. Students also see a critical need to change the name of the AgSo major, as it is often confusing to employers. Based on a student and alumni needs assessment, priority areas are:

(1) change the name of the major, and

(2) update the curriculum with more policy and skill-based courses.

This initiative aligns with ISU's priority of a student-centric university and one that is diverse and inclusive; and CALS priorities of educating for today and tomorrow and local-global engagement.

Outcomes:

We propose a major change in the existing AgSo major that has several objectives.

1. Change the name of the major to Agricultural and Rural Policy Studies. This will be a collaborative process between current students, alumni, stakeholders, and faculty. Success would be consensus on the new name and approval by ISU Faculty Senate and IBOR.
2. Establish a new curriculum and new learning objectives. Based on advice from current students, alumni, stakeholders, and faculty, we will develop a new curriculum that will prepare students for a career in ag policy. Success is passage and implementation of the new curriculum
3. Develop and deliver new policy and skills-based courses for new curriculum. Faculty will work to develop new courses based on current policy issues and labor market trends. Success is developing new experimental courses and teaching them with good enrollments.
4. Create and deliver experiential learning courses, including internship and study abroad.
5. Create advisory panel of stakeholders to guide the major. Success would be having an engaged set of students, alumni, policymakers, and industry staff to advise the major on current needs in the job market.
6. Establish a student lounge and revitalize the student club.
7. Create a mentoring program between students and students and alumni. Success is a student-led and operated mentoring program.
8. Recruit students from metro areas of Iowa rural areas of surrounding states. Success is an increase in majors, majors from out-of-state, and majors from metro areas.

Timeline:

1. Change name of major.
 - a. Passed by Faculty Senate and approved in June 2022, with our first graduates in December 2022.
2. New curriculum.
 - a. Approved in October 2022 and the first cohort of students entered in Fall 2023 under the new curriculum.
3. New policy/skills courses.
 - a. Courses taught: SOC 210 Social and Civic Innovation; SOC 262 Data Discovery, Analytics, and Visualization; SOC 264 Facilitation of Public Issues in Agriculture; and SOC 444 Sociology of Food and Agricultural Systems.
 - b. Developed but not taught: SOC 415 Agrifood Policy and Social Change; SOC 433 Strategies for Rural Resiliency and Vitality; and SOC 482X Issues in Agricultural and Rural Policy.
4. New experiential learning courses.
 - a. SOC 234X Conservation Values and Ethics (travel course to ISU Montana camp); SOC 411/496 Social Change and Development (travel course to Nepal); and SOC 470X Agricultural and Rural Policy Internship (students get 3-9 credits for doing an internship). All have been offered.
5. Advisory Panel.
 - a. Initial meetings in 2021 and 2022, but minimal meetings since then
6. Student lounge and club.
 - a. Lounge created in 120 East Hall with donations. Ag Policy Club hosted Bill Northey in Fall 2022 for master class. Club holds regular meetings and social events.
7. Mentoring program.
 - a. Started in Fall 2022 with limited success. Done more informally in Fall 2023. Need to rethink and refocus efforts here.
8. Student recruitment.
 - a. The number of majors (1st and 2nd) are up 29% from 2021, despite large graduating classes and enrollment declines in CALS. Most of the growth is from 2nd majors in AgB, AnS, and Globe. Primary majors have been stable at between 5-7 students each fall (1st year and transfers).

Participating Units:

Status: Released

ISU Initiatives

CALS Initiatives

Submitted on: 3/27/2024 by: Leana Bouffard

Statistics

Conference Hosting

Summary:

The Department of Statistics would like to host a series of conferences. Following our successful celebration of the department's 75th anniversary last fall that brought many program alumni back to campus, we will complete our recognition of our 75th anniversary with a research conference this fall. The conference will feature 24 invited speakers, including 15 outstanding alumni and several world-renowned statisticians who will present distinguished lectures. More details are available at <https://www.stat.iastate.edu/event/2023/75th-anniversary-research-conference>. In spring of 2024, we will host the national Conference on Applied Statistics in Agriculture and Natural Resources. We are currently under consideration as the site of the 2025 United States Conference on Teaching Statistics. We are also interested in creating and hosting a conference for graduating PhD students from around the nation who aspire for academic positions. The conference would take place in September each year when weather is nice and campus is beautiful. This would provide us with a unique opportunity to showcase our department to those who will become an important part of the academic statistics community.

Outcomes:

This initiative will help solidify Iowa State's reputation as an important center for statistics research and education. Some tangible outcomes could be improvement in the national ranking of our program, more professional opportunities for current faculty and students that will come from interaction with conference attendees, and greater success in hiring new faculty who will see campus in May or September rather than only during interviews in January!

Timeline:

Our first conference will take place September 29 through October 1, 2024.

Participating Units:

Statistics

Status: Released

ISU Initiatives

- To be the most student-centric leading research university
- To be the university that cultivates a diverse, equitable, and inclusive environment where students, faculty, and staff flourish
- To be the university that fosters lifelong learning
- To be the university that creates opportunities and forges new frontiers
- To be the trusted partner for proactive and innovative solutions

CALS Initiatives

- Innovate and create value
- Engage locally and globally
- Grow meaningful lives and livelihoods
- Learn and educate for today and tomorrow
- Cultivate community, cooperation, and partnerships
- Discover and share new knowledge, approaches, and technologies

Department of Statistics Communications Specialist

Summary:

The Department of Statistics will hire a fulltime communications specialist to help us tell our story to prospective students and their parents, to prospective faculty and staff, to alumni, to external partners, and to current students, staff, and faculty in the Department of Statistics. The Communications Specialist will perform duties that include the following: • Create materials featuring student, faculty, and alumni successes that will be used to recruit new Statistics majors and inspire donors to give to the Department of Statistics. • Write and distribute our departmental newsletter on a regular basis. • Maintain and develop the Department of Statistics website. • Share departmental news on our social media accounts. • Draft personal letters of thanks to donors. • Attend and document departmental events with text and photos. • Raise awareness of new programs, like our proposed Master of Applied Statistics degree program, and special events hosted by the Department of Statistics. • Coordinate outreach efforts to K-12 students and to employers of our graduates. • Represent the Department of Statistics on the Alumni Relations Council, the ISU Social Media Administrators Group, and the LAS Communicators Group. Though this work is fundamentally important, there has not been adequate financial support for this position since the spring of 2020 when the department's fulltime communications specialist resigned. LAS will contribute 25% of the cost of the position. The department plans to cover the rest from Foundation funds and salary savings from grants.

Outcomes:

This hire is intended to increase the number of Statistics majors at Iowa State by raising awareness of our outstanding degree programs among prospective students and their parents and teachers. This communications hire is also intended to increase giving to the Department of Statistics. The Department of Statistics has many successful alumni who think highly of their experiences in the department and have the means to financially support the department. Regular and strategic professional communications to our alumni will facilitate additional giving.

Timeline:

LAS has approved a search that will take place this fall (2023).

Participating Units:

Statistics

Status: Released

ISU Initiatives

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- Conserve and sustainably manage resources
- Cultivate community, cooperation, and partnerships
- Discover and share new knowledge, approaches, and technologies
- Value people and what they do to advance the College and its mission

Department of Statistics External Advisory Council

Summary:

The Department of Statistics would like to establish an External Advisory Council whose members would meet with the department chair and other personnel to discuss current and future operations of the department. Meetings would give the department a chance to showcase our work to external partners and supporters. Importantly, meetings would also give the department a chance to learn about future opportunities and receive advice from External Advisory Council members, whose experiences and perspectives would be valuable for the department to understand.

Outcomes:

This program will be a success when future successful departmental initiatives emerge from External Advisory Council advice. Additional financial support from Council members could be another measure of success. The initiative could also strengthen and expand the department's professional network and heighten the department's reputation for excellent research and educational programs, which could be seen by an improvement in our program's national ranking and student outcomes.

Timeline:

A department committee charged with exploring the establishment of an External Advisory Council has not made progress the past two academic years due to competing priorities. The plan now is to form the committee prior to the start of the 2024-2025 academic year.

Participating Units:

Statistics

Status: Released

ISU Initiatives

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Department of Statistics Faculty Member with Extension Appointment

Summary:

The Department of Statistics would like to hire its first faculty member with an extension appointment. The people of Iowa face a data deluge like never before. A Statistics faculty member with an extension appointment could help Iowan's make sense of the data they see and learn more about the opportunities for using data to answer questions and solve problems in many areas. Such a faculty member could also help other Statistics faculty become aware of important and interesting problems and increase the

relevance and impact of our statistical research. The work of the faculty member would also raise awareness about the power of statistics among the people of Iowa, which in turn could help strengthen public support for ISU and help the department with recruiting of new students.

Outcomes:

It would be difficult to measure the direct impact of such a hire, but the better lowans can make use of data, the better the decision making and the better quality of life in the state.

Timeline:

The Department is interested in moving forward with such a hire as soon as possible.

Participating Units:

Statistics

Status: Released

ISU Initiatives

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Submitted on: 9/3/2023 by: Dan Nettleton

Graduate Curriculum and Exam Reform

Summary:

The Department of Statistics is considering changes to our curriculum and written exams for PhD students. The changes would allow students to complete core courses within two years and clear all comprehensive written exams by the end of their first year in the program. Currently, a student arriving with a bachelor's degree can complete core courses in 2.5 academic years and all written exams by the summer after two years in the program. Students often do not find a major professor until fall of their third year in the program or later. The previous two external review committees (2014 and 2021) have strongly recommended changes to curriculum and exams that would allow students to complete course and exam requirements, find a major professor, and begin research much earlier than our current program allows.

Outcomes:

This initiative will be successful if we make changes to our curriculum and exams that allow students to clear exam hurdles and find a major professor before beginning the second year of our program. One desired outcome of the initiative is that our PhD students will graduate with more publications and be more competitive on the academic job market than they have been in recent years.

Timeline:

A department committee has been working for two academic years to produce a report that was shared with faculty at our department retreat in August of 2023. We will be discussing and voting on options presented in the report this fall semester.

Participating Units:

Statistics

Status: Released

ISU Initiatives

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Submitted on: 9/3/2023 by: Dan Nettleton

Launch Online Master of Applied Statistics Degree Program

Summary:

The proposed program will teach students statistical methods and their application to data-driven problems in a variety of fields. When compared to our current Master of Science in Statistics degree, the proposed program emphasizes practical applications and experiences with current statistical methodology and computing, includes a course on statistical consulting covering communication skills and ethical issues, provides course credit for experiential learning, is offered as an online program, and can be completed in 15 months of full-time graduate study. The proposed program consists of 30 credits, of which 23 credits are online versions of existing courses currently taught in person on campus. The remaining 7 credits come from new courses: (3 credits for Introduction to Statistical Learning, 2 credits for Statistical Consulting, and 2 credits for Work Experience in Statistics). The overall goal of this proposed program is to prepare students to be effective, responsible, and ethical users of statistical methods, while generating additional revenue.

Outcomes:

This program will be a success when the students graduate, find great jobs, and do impactful work for their employers. Another important measure of success will be the revenue this program generates in excess of expenses.

Timeline:

The program is awaiting approval from the Graduate College, Faculty Senate, and Board of Regents. We hope to admit the first students in summer 2024.

Participating Units:

Statistics

Status: Released

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Submitted on: 9/3/2023 by: Dan Nettleton

Mock Advanced Placement Statistics Exam

Summary:

The Department of Statistics will host a mock Advanced Placement (AP) Statistics Exam each spring at Iowa State. High school students taking AP Statistics courses from the region will be invited to take the exam and compete for scholarships to major in Statistics at Iowa State. High school teachers who teach AP Statistics will join Iowa State personnel to learn about the AP exam and how to score it. The event will help students be better prepared to take the AP exam, and teachers will learn how to better prepare their students for success. High school students will also see presentations from current Statistics undergraduate majors and Statistics faculty about opportunities for those who major in Statistics at Iowa State.

Outcomes:

This program will be a success when we see an increase in the number of undergraduate Statistics majors at Iowa State resulting from students who learn about our major by participating in the mock exam or learn about our program from high school teachers who participate.

Timeline:

We tried this for the first time in spring 2023. We ran into conflicts with prom but still had around a dozen students from a few schools participate. We would like to grow this event to involve a few hundred students from a dozen schools.

Participating Units:

Statistics

Status: Released

ISU Initiatives

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Submitted on: 9/3/2023 by: Dan Nettleton

Associate Dean, Research and Discovery

CALS Academy for Team Science (CATS)

Summary:

Opportunities for millions of dollars often have quick turn-around deadlines and it seems nearly impossible to get a team and proposal together quickly. CATS is a mechanism to build a team in advance of those requests for proposals being announced so our teams are poised to go after those requests for proposals as they appear. For those whose teams are selected for funding, additional supports will also be made available. These include: • travel to funding agencies to talk with program directors • involvement in team science training opportunities FUNDING – EXISTING SOURCES or PATHWAYS TO FUNDING: Two \$40,000 grants, Five smaller grants, each up to \$5,000. Source: Hatch funds (one-time opportunity). Proposals are requested to describe funding opportunities they anticipate to apply for, and travel to individuals on those teams to meet with program directors will be provided.

Outcomes:

1. Number and quality of proposals that are submitted. This can be compared to similar from past opportunities offered via the Office of the VP for Research (e.g., PIRS proposals submitted over the years.
2. Return on investment. We will evaluate those who proposed to be supported and their funding outcomes over the years to those who applied but are not funded and to those who did not apply for funding.

Timeline:

Roll out description April, 2023. Proposals due 19 May 2023. Funds to become available immediately.

Participating Units:

Associate Dean, Research and Discovery
Agricultural and Biosystems Engineering
Agronomy
Associate Dean for Global Engagement
Ecology, Evolution and Organismal Biology
Economics
Horticulture
North Central Regional Plant Introduction Station
Plant Pathology and Microbiology, Entomology
Sociology and Criminology- Faculty members, staff members in the CALS Office of Research and Discovery, student hourly workers in the CALS Office of Research and Discovery, funding agency program directors, and others as appropriate based on the topics for teams that are selected for funding.

Status: Released

ISU Initiatives

To be the university that creates opportunities and forges new frontiers

CALS Initiatives

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Submitted on: 5/4/2023 by: Carolyn Lawrence-Dill

CAPER: CALS Advisory Panel for Engaged Research

Summary:

CAPER is meant to function as a peer network working together to identify bottlenecks and help resolve issues that can cause confusion and pose obstacles to productive, creative work by CALS research faculty and their teams. Sometimes the barriers are pervasive and must be chipped away slowly. Sometimes they are small and easily dealt with, such as making it easier to find answers to routine questions.

Outcomes:

1. Better engagement: people asking about how things work so they can navigate the administrative systems.

2. Feedback from CAPER members. Are they gaining valuable information? What should be changed to improve administrative systems?
3. Interest by faculty members to serve as CAPER members over the years.
\$300 per month for food, with meetings happening ~8 months of the year (Spring and Fall semesters)

Timeline:

Begin Fall of 2021. Continuous.

Participating Units:

Associate Dean, Research and Discovery
 Agricultural Education and Studies
 Agricultural and Biosystems Engineering
 Agronomy
 Animal Science
 Biochemistry, Biophysics and Molecular Biology
 Ecology, Evolution and Organismal Biology
 Economics
 Food Science and Human Nutrition
 Genetics, Development and Cell Biology
 Horticulture
 Natural Resource Ecology and Management
 Plant Pathology and Microbiology, Entomology
 Sociology and Criminology
 Statistics

Status: Released

ISU Initiatives

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Submitted on: 6/5/2023 by: Carolyn Lawrence-Dill

Center for Agricultural and Rural Development

Innovative Solutions for Midwest Agricultural, Environmental and Rural Development Concerns

Summary:

The Center for Agricultural and Rural Development (CARD) will be the College's rapid-reaction team for questions related to agricultural, environmental and rural development policy and related industry questions. Through the development of practical, stakeholder-focused tools as well as advanced research, CARD fulfills its mission to conduct innovative, value-added public policy research while engaging locally, regionally, and globally with CALS' stakeholders.

Outcomes:

CARD will use contemporary and time-honored economic theories, quantitative methods, and interdisciplinary approaches to inform, engage, and benefit society. CARD will communicate its research findings and develop and improve upon CARD's practical tools for state and federal policymakers, the research community, agricultural, food, and environmental groups, individual decision makers, and local and global audiences. We will measure the success of the research and tools by tracking online usage.

Timeline:

Already begun.

Participating Units:

Center for Agricultural and Rural Development

Status: Released

ISU Initiatives

CALS Initiatives

Submitted on: 1/10/2024 by: John Crespi

Center for Sustainable Rural Livelihoods

Developing the next generation of leaders for global development

Summary:

For 20 years, the Center for Sustainable Rural Livelihoods (CSRL) in the College of Agriculture and Life Sciences at Iowa State University has worked side-by-side with Kamuli District residents to discover and implement sustainable solutions to meeting the community's most urgent needs. Starting with farmer training, the center has evolved into programming that touches every stage of the life cycle.

Mission:

CSRL and ISU-UP uses the power of education to develop sustainable communities and responsible global citizens.

Vision:

To develop responsible global citizens and thriving local communities that benefit from food and financial security, quality education and healthcare, civic participation, social inclusion, environmental stewardship, and overall sustainable livelihoods.

This year, we celebrate the 20th anniversary of CSRL. As we celebrate past successes, we cast an eye on the future of global development and the role of CSRL in framing that future as we work to foster the next generation of leaders in global development.

Outcomes:

- Informed and motivated students and young professionals ready to become the next generation of development leaders (75 students trained in 2024)
- Increased recognition of CALS as a global college of agriculture and life sciences (production of 10 videos in 2024 on our program to use in publicizing our global role)
- Recognition of the CSRL development model (through exposure at 4 educational events in 2024)
- Increased funding (forecasting fund raising exceeding \$10M in 2024)

Timeline:

We have kicked off 2024 with our inaugural annual development workshop, Next Generation Institute, held at our Mpirigiti Rural Training Centre (MRTC) in Kamuli, Uganda. With 17 participants from four continents who came together to learn and ultimately create a new project design for use in a sustainable rural development program.

During spring semester, spring break and summer 2024 we will host four groups of ISU students who will be engaged in learning a MRTC in Uganda in areas related to development, health, animal health and school development..

On July 5, we will host the first World Food Prize Youth Institute in Africa, which will be held at MRTC in Kamuli, Uganda.

In October, CSRL will hold a symposium at ISU to share our development model.

And later that month, we will take our story to a global audience at the Borlaug Dialog/World Food Prize.

Participating Units:

Center for Sustainable Rural Livelihoods

Status: Released

Iowa Nutrient Research Center

Iowa Nutrient Research Center's Knowledge and Technology Sharing Initiative

Summary:

The purpose of the Iowa Nutrient Research Center is to pursue a science-based approach to nutrient management research that may include but is not limited to evaluating the performance of current and emerging nutrient management practices, and using an adaptive management framework for providing recommendations for the implementation of nutrient management practices and the development of new nutrient management practices. Over the last 10 years there has been significant research done through INRC but there is a need to enhance the visibility and impact of INRC and the water quality work being done at ISU through sharing new knowledge, approaches, and technologies. The new Knowledge and Technology Sharing Initiative will build on the center's science-based efforts to inform, educate and develop partnerships to conserve and sustainably manage resources through improved nutrient management. To pursue this work, INRC will conduct the following:

- Host INRC-focused monthly webinars to share knowledge and advance technical capacity.
- Partner with the Iowa Learning Farms program to develop virtual field days to highlight and engage discussion on findings from INRC work.
- Partner with Iowa State University Extension and Outreach to disseminate research findings.
- Facilitate researcher roundtables and field tours to discuss INRC research projects and findings.
- Facilitate research and stakeholder needs assessment to guide future INRC research directions and communications.
- Facilitate transfer of knowledge about new practices and practice performance as a leader for the Iowa Nutrient Reduction Strategy Science Team.
- Explore projects to expand INRC's impacts through relationships with other units and students in CALS, including the Ag450 Farm and ISU Research and Demonstration Farms.

Share information on INRC research and activities through news articles, a website, project reports, social media, reports, videos, and other communications projects, including a statewide water quality research map, a digital library of INRC-related research publications and researcher directory.

Outcomes:

There is a tremendous amount of important water quality research being done at ISU but there is a need to be more intentional with transferring that knowledge to other researchers and stakeholders to enhance the impact of this work and ensure that it is implemented into further decision-making.

Measurements of success will include:

- Number of webinars, virtual field days, workshops, field tours, and roundtable meetings either sponsored or co-sponsored by the INRC.
- Number of attendees for events either sponsored or co-sponsored by the INRC.
- Number of viewers and followers of INRC website, news and videos, and social media.
- Results of efforts to expand outreach to students and/or other CALS units.

Timeline:

INRC is currently pursuing this initiative.

Participating Units:

Iowa Nutrient Research Center

Status: Released

ISU Initiatives

CALS Initiatives

Submitted on: 2/26/2024 by: Matt Helmers

Iowa Soybean Research Center

Iowa Soybean Research Center

Summary:

The Iowa Soybean Research Center (ISRC) works with the Iowa Soybean Association (ISA), industry leaders, farmers, and researchers at Iowa State University. Through a collaborative effort, we identify and financially support soybean production and protection research. Additionally, we promote and foster collaboration, coordination, and integration among Iowa State University, the Iowa Soybean Association, industry, and farmers to align soybean-related activities at Iowa State University with the needs of Iowa soybean farmers and the industry that supports crop production. We focus on coordinating research, teaching, and extension activities of faculty and staff who work in soybean biology, breeding, economics, precision agriculture, production, and pest management. Our vision and target community groups align with the university's strategic priorities, such as being the most student-centric leading research university, where our focus is empowering students for innovative research projects and forging new frontiers that propel our research and academic excellence. We are dedicated to cultivating a diverse, equitable, and inclusive environment where every member, from students to faculty and staff, can truly flourish. This is evident from the diversity of our faculty affiliates and industry partners. We host various activities and connection events that foster intellectual and personal growth.

The heart of our mission is to fulfill the role of a trusted partner with the ISA, offering proactive and innovative solutions to the challenges facing our society. Our philosophy is to innovate and create value in every endeavor, engaging locally and globally to make a significant impact. We are focused on nurturing meaningful lives and livelihoods, ensuring our students are prepared for today and tomorrow. Our approach to learning and education is experiential and dynamic, adapting to the world's evolving needs. For example, we have an engaged student community that participates in SoyFest, which is held every alternate year with the aim of promoting soybeans to the broader campus community. We have hosted more than a thousand campus community members who have visited SoyFest exhibits and displays, giving them an opportunity for people to understand the value chain of soybeans.

We are also deeply committed to conserving and sustainably managing resources, recognizing our responsibility to be good stewards of the environment. Examples of efforts in this regard include partnering with the ISA on US Environmental Protection Agency (EPA) regulations to ensure we are providing the necessary education, expertise, and scientific data to ensure that federal decisions and regulations are based on scientific facts. We cultivate community, cooperation, and partnerships in all our efforts, understanding that these are the foundations of lasting success. Through our continuous quest to discover and share new knowledge, approaches, and technologies, we value every individual's contribution, recognizing that these collective efforts are what advance our College and its mission. We offer sponsorship support in multiple departments and units in CALS, promoting knowledge sharing and cross-pollination of ideas. We provide research support in response to the priorities of our industry partners and farmers. We engage with federal granting agencies to ensure communication and strategic response to For more information about CALS strategic planning: cals.iastate.edu/strategic-planning calls for funding. We will soon open a program to provide mentoring opportunities to students of Historically Black Colleges and Universities. Similarly, we organize and host field days with allied groups such as the AI Institute for Resilient Agriculture (AIIRA) at ISU and the Iowa Soybean Association to disseminate information and updates on near-application tools for farmers and the industry. For community building, we annually organize and conduct a Meals from the Heartland

Outcomes:

We have identified the following activities for this strategic initiative:

1. SoyFest: a broad community outreach event hosted to educate ISU undergraduate students and the broader agricultural and non-agricultural campus community about the many uses of soybean.
 2. Research Day/Student Recruitment: a half-day event showcasing campus soybean research projects. Student participation will be encouraged. The event will provide a recruitment opportunity for industry.
 3. Field tours: offer experience to ISU graduate students, post docs, staff, and researchers to visit farming operation and industry visits.
 4. Group synergies: collaborate with and offer coordination for external soybean groups such as the Coordinated Soybean Centers Group and the U.S. Soybean Research Collaborative.
 5. Support industry partners through training opportunities: The center provides coordination to Syngenta when they host their spring training workshop for agronomists each year at ISU and arrange training schedules with ISU researchers for IndigoAg's agronomists training.
 6. Host visiting groups: the center organizes campus visits for groups. Past visits include delegations from Ecuador, Hungary, and Brazil, multiple visits from the Iowa Soybean Association's Board of Directors, staff, and Experience ISA Leadership groups.
 7. Organize and conduct student events with diverse community groups: collaborate with the North Central Poultry Association and the Iowa Egg Council with an omelet breakfast for ISU students during National Egg Month (May).
 8. Seminar sponsorship support: identify seminar series in departments such as PPEM, Agronomy, Seed Science, and ABE that have soybean-related presentations. Offer the departments resources necessary to bring prominent external speakers to campus and talk about pertinent topics related to soybean production research.
 9. Field Day collaboration with ISRC/AIIRA/ISA: field day for farmers and industry to showcase innovative soybean projects and their outcomes.
 10. Organize a reverse REU opportunity with 1890 HBCU's: considering a research opportunity where instead of students from a HBCU coming to ISU for a summer REU program, we bring the research to students who are not able to be away from home during the summer.
- For more information about CALS strategic planning: cals.iastate.edu/strategic-planning
11. Partnerships – considering opportunities for platform solutions: Industry and farmer-led project descriptions that ISRC faculty affiliates will take up.
 12. Seed Grants: considering the establishment of a seed grant for ISU early career professionals.
- The measure of success will be metrics on completion of events and level of participation.

Timeline:

These initiatives will be completed in the next three years. (2028)

Participating Units:

Iowa Soybean Research Center
 AI Institute for Resilient Agriculture
 Agricultural and Biosystems Engineering
 Agronomy
 Biochemistry, Biophysics and Molecular Biology
 College of Engineering CBE
 College of Engineering ECE
 Economics
 Genetics, Development and Cell Biology
 Natural Resource Ecology and Management
 Plant Pathology and Microbiology, Entomology
 Seed Science Center
 Sociology and Criminology
 Translational AI Center

Status: Released

ISU Initiatives

CALS Initiatives

Submitted on: 1/29/2024 by: Jill Cornelis

Midwest Grape and Wine Industry Institute

Vine to Wine: How Viticulture Practices relate to Wine Parameters for Cold-Hardy Interspecific Grape Cultivars grown in Iowa and the Upper Midwest

Summary:

Many cold-hardy interspecific hybrid grape cultivars grown in Iowa have been developed and released within the last 25 years. This is a relatively short amount of time compared to other grape cultivars around the world, that have been grown, processed and researched for decades. We are interested in understanding what impacts viticultural operations will have on wine quality. We plan to study operations that are realistic for grape growers to perform in their vineyards (based on labor, mechanization, time). Each year we work with commercial grape growers to use a plot of their vineyards to perform this work, the grapes are harvested and then vinified at the Iowa State University Winery. Currently we are examining the effect of canopy exposure on the aromatic wine components of the cultivars La Crescent and Frontenac blanc. We plan to expand this work each year with additional cultivars and various viticultural operations.

Outcomes:

For this project to be successful we will be giving meaningful information to growers and winemakers to help in their decision making process in the vineyard or winery. We anticipate regularly presenting this information at regional conferences, writing extension reports and publishing peer reviewed articles for this work. Regular surveys (informal and formal) of stakeholders will be performed to understand if they are using the information, and what vineyard operations/cultivars they would like to be studied.

Timeline:

We started this project in 2022 with one cultivar. We expanded to two cultivars in 2023. Both years we are assessing aroma components in the wine made based on both canopy exposure of the grapes and harvest timing (1 week intervals). We plan to continue this project yearly for the foreseeable future.

Participating Units:

Midwest Grape and Wine Industry Institute
ISU Extension and Outreach

Status: Released

ISU Initiatives

CALS Initiatives

Submitted on: 2/8/2024 by: Erin Norton

Seed Science Center

Cement reputation as the “go-to” center for credible information on seed science, technology, business, and systems

Summary:

This initiative aims to increase the Center’s visibility as the “go-to” place for authoritative, science-based knowledge and expert advice on any topic or issue related to seeds. The goal is to assist in developing technical and cultural competencies among the next generation of seed professionals and to serve the information needs of a wide range of seed stakeholders and audiences. This will be done by producing outreach materials, managing media relations, supporting issues management, responding to general

inquiries, creating a robust social media presence, offering seed training programs on demand, providing policymakers with data to support policy formulation.

Outcomes:

1. Upgraded Center website that projects an active online presence
2. Added episodes to the documentary series Seeds! Diversity of wonder
3. A reinvigorated quarterly newsletter which serves internal and external constituencies
4. Number of press releases distributed to the local and national media
5. Increased level of satisfaction of specific audience groups with the quality and delivery of communication products

Timeline:

2023-2028

Participating Units:

Seed Science Center

Status: Released

ISU Initiatives

To be the university that fosters lifelong learning

CALS Initiatives

Grow meaningful lives and livelihoods Learn and educate for today and tomorrow

Submitted on: 10/25/2023 by: Lulu Rodriguez

Establishing strong and resilient seed systems across the world that provide farmers with timely and affordable access to suitable and high-quality seeds

Summary:

This initiative aims to create seed centers of excellence, especially in places with little to no seed system infrastructure. To do so, the SSC will work to support governments, the private sector, and other development partners to build modern, effective and resilient seed systems, support seed research and innovation, help formulate responsive seed policies and regulations, and develop capacity for the responsible stewardship of biotech-derived seeds.

Seed centers of excellence are where stakeholders can set up research and development facilities, house seed processing facilities, offer training venues for a varied clientele, and serve as the site of seed enterprise development activities, which include serving as seed business incubators that will accelerate the development of start-up seed companies.

Outcomes:

1. New collaborative ties, especially with nations that are trying to build seed programs from the ground up, those wanting to restore or rebuild damaged seed systems, and countries with the desire to strengthen existing seed capacities
2. Number of seed enterprise established at the sub-national, national, and regional levels
3. Number of professional training and degree-granting programs implemented
4. Number of platforms that have been created and strengthened to facilitate variety release, seed certification, and technology transfer

Timeline:

2023-2028

Participating Units:

Seed Science Center

Status: Released

ISU Initiatives

To be the university that creates opportunities and forges new frontiers

To be the trusted partner for proactive and innovative solutions

CALS Initiatives

Innovate and create value
Engage locally and globally
Grow meaningful lives and livelihoods
Cultivate community, cooperation, and partnerships

Submitted on: 10/25/2023 by: Lulu Rodriguez

Strengthening the Seed Science Center's phytosanitary certification capability to facilitate the international movement of seeds

Summary:

This initiative aims to enhance the SSC's ability to respond to new or emerging disease issues by being able to perform diagnostic tests (e.g., molecular techniques to detect a broad spectrum of seed-borne plant pathogens) for customers (primarily U.S. seed companies), in need of phytosanitary certificates for export. The focus is on molecular seed quality assurance as a component of the Center's operation of the National Seed Health System (NSHS). It will be implemented in collaboration with USDA-APHIS.

Outcomes:

1. Number of seed health testing protocols designed, standardized, and validated
2. Improvements in the design, organization, and implementation of the NSHS proficiency testing program

Timeline:

2023-2026

Participating Units:

Seed Science Center

Status: Released

ISU Initiatives

To be the trusted partner for proactive and innovative solutions

CALS Initiatives

Innovate and create value
Cultivate community, cooperation, and partnerships
Discover and share new knowledge, approaches, and technologies

Submitted on: 10/25/2023 by: Lulu Rodriguez
