

AREC 2021 STRATEGIC PLAN

PURPOSE

- Discover new economic knowledge through applied economic research and impart that knowledge to students on-campus and CALS stakeholders throughout the world.
- Contribute to the overall productivity of CALS' scholars and the doubling of CALS external funding through active collaboration on multidisciplinary grants.
- Educate all CALS students in understanding the complexities of commerce in a global economy.
- Ensure CALS' top ranking by playing an integral role in applied economic endeavors regionally and internationally.

2021 VISION

Serve our state, nation, and world through a commitment to the land-grant heritage and tradition of discovery, education, and service. Our tripartite vision is:

- To advance applied economic knowledge through creative research and scholarship.
- To extend applied economic knowledge through innovative educational efforts on- and off-campus.
- To serve our college, university, community and state by promoting learning pertinent to the global economy.

MISSION

Uphold the most rigorous quality standards in pursuit of applied economic knowledge, its application, and its transmission to students, CALS stakeholders and society at large to address pressing social challenges.

SHARED VALUES

Quality and Excellence
Integrity, Trust and Respect
Discovery, Innovation, and Creativity
Land-Grant Ideals
Diversity and Global Citizenship
Stewardship and Accountability
Freedom of Expression

PREAMBLE

For timely and credible economic analysis to be performed in CALS and for meaningful economic education of CALS students, applied economists must have a vibrant, cohesive, identifiable unit within CALS. No top-ranked college of agriculture in the United States maintains its rankings without agricultural economics research and education. Further, agricultural economists play an integral role in garnering multidisciplinary grants in which applied economic analysis is a necessary requirement. Agricultural and resource economists are uniquely qualified to provide essential economic education of on- and off-campus students so that they may prosper and flourish in a global economy.

The following four strategic goals identify the short- and long-run benefits to CALS of the research, teaching and extension only agricultural and resource economists can provide. In the short run, many of the innovative, exciting opportunities outlined can be realized with current faculty numbers through a

reallocation of efforts between teaching and research. Greater benefits to CALS in the longer run will, however, require filling positions vacated owing to retirements and potentially from attrition as well as two new faculty lines. The two new lines will be leveraged in part by alumni and industry donations to an endowed chair as well as allocation of start-up funds from other discretionary sources like restricted UA Foundation accounts at AREC's disposal. With two new lines filled between FY15 and FY17, all the longer run benefits in extension, teaching, and research outlined in the four strategic goals can be realized.

STRATEGIC GOAL ONE

PROVIDE AN OUTSTANDING UNDERGRADUATE EDUCATION EXPERIENCE IN AGRIBUSINESS AND ENVIRONMENTAL ECONOMICS AND MANAGEMENT THAT PREPARES STUDENTS TO EXCEL IN A GLOBAL SOCIETY

A. Current situation and gap between current and desired situation:

- FY12 180 Agribusiness Economics and Management majors
 30 Environmental and Water Resource Economics majors
 No general education courses
 One on-line and one pre-session course, with potential for growth
 1/2-time advisor
 1-unit "success" class for all majors
 No student clubs
 Modest informal internship program
 Limited undergraduate alumni network
- FY17-21 200 Agribusiness Economics and Management majors
 100 Environmental Economics and Management majors
 At least two dedicated service or general education global applied economics courses for all CALS majors (as part of Gen Ed requirement for all students)
 A minimum of four on-line and pre-session courses
 Active student clubs
 An actively engaged undergraduate alumni network

B. Strategies to achieve goal

1. Revise and refine undergraduate curriculum to highlight industrial organization, international trade, food security and safety, economic development, and environmental management
2. Develop and maintain new service courses (e.g. general education) that equip CALS and other university students for competition in the global economy.
3. Develop pre-session and/or online versions of the new service courses to facilitate student access (see strategy 2).
4. Design a new CALS-or university-wide major in Environmental Economics and Management, replacing the current Environmental and Water Resource Economics major.
5. Maintain the current analytical, mathematical and statistical rigor in the undergraduate program. Enhance the opportunities for students with aptitudes in these areas.
6. Promote student diversity and an academic home for "2nd chance" students while raising and enforcing stricter entrance requirements for undergraduate majors to insure their academic success.
7. Develop out-of-class opportunities for students (e.g. clubs, field trips, internships, etc.), with the cooperation of a re-energized alumni network, to enhance learning, career development, job placement, and "Bear Down" alumni loyalty.

C. Actions

Time Period

- Faculty cooperatively review/revise/redirect the content of the undergraduate curriculum.

FY13-15

• Faculty explore the needs within CALS for economic education and then design and establish course opportunities for a broad number of CALS students.	FY13-14
• Faculty utilize CALS and University resources to develop pre-session and on-line courses for high-demand classes.	FY13-15
• Faculty work with faculty from SWES, SNRE, WRRC, Institute for the Environment, Economics, and Geography to design and establish the new Environmental Economics and Management major.	FY13-15
• Faculty and staff are encouraged to maintain high standards in student advising and assessment. Availability of faculty for student advising is a tradition to be maintained as a critical aspect of students' learning experience.	FY13-21
• The Department establishes two student clubs (e.g. National Agricultural Marketing Association (NAMA), Environmental Management Club) with the assistance of the alumni network.	FY15-17
• Continue collaboration in annual FFA examination and other outreach activities to foster recruitment of freshmen majors.	FY13-21

D. Inputs needed to achieve the goal	Time Period
• Four teaching assistants @ (\$15,000 + ERE) / assistantship	FY 14-21
• Selected faculty teaching 3 courses / year (two undergraduate courses or one course and club advisor) with appropriate department and CALS recognition	FY 13-21
• Full-time Undergraduate Coordinator (funded by fees & donations)	FY 13-21
• Replacement of retiring faculty	FY 13, 15, 16
• With ABOR approval, implement \$200/student/semester fee.	FY13
• Two additional faculty lines	FY 15-17
• Operational “seed” funding to support efforts to develop and maintain our alumni network	FY 14-15

E. Objective metrics that will be used to track progress towards obtaining goal:

1. Revised syllabi, curriculum and courses to support global economics education.
2. Increased number of teaching assistants (4).
3. 800-1,000 additional students in AREC classes per year.
4. Generate sufficient funds from online/summer school offerings to support three additional teaching assistants.
5. 200 Agribusiness Economics and Management majors.
6. 100 Environmental Economics and Management majors.
7. 50-80 students providing leadership and regularly participating in club activities.
8. Increased number of faculty (2)
9. Increased alumni participation in undergraduate program (visits, field trips, internships, donations, public-private partnerships, etc.)

STRATEGIC GOAL TWO:

PROVIDE A PREMIER GRADUATE EDUCATION IN AGRICULTURAL AND RESOURCE ECONOMICS AND ACHIEVE A LEADING POSITION IN TRAINING RISK MANAGEMENT PROFESSIONALS

A. Current situation and gap between current and desired situation:

- FY 12 Current top-10 ranking of AREC M.S. program.
 No attrition and on-time graduation rates.
 Diverse graduate student composition (e.g. 4 National Needs Scholars) of 30 students
 Three Fulbrights and one Muskie Scholar in recent years.
 100% placement with terminal degree recipients in private sector (e.g. PricewaterhouseCoopers, American Express, KPMG, Discover, JPMorgan/Chase, Citibank) and public sector (e.g. Economic Research Service, Federal Reserve, FAO, Department of Interior, Bureau of Reclamation).
 Near 100% placement for non-terminal recipients in premier Ph.D. programs (e.g. Berkeley, Cornell, Oxford).
 Maintained active research and excellent teaching in Applied Econometrics, Economic Development, and Environmental and Resource Economics
 Foregoing achieved despite loss of 3 faculty and no state funding for RA/TA's.
- FY 15-21 Further improve ranking of M.S. program.
 Capitalize on the renewed market demand for risk analysis and risk management.
 Buttress and generate new funding of RA/TA's to continue to recruit very brightest students.
 Offer new specialized degree in Applied Econometrics and Risk Management with students paying full cost.
 Maintain position as the premier center for education and training in Agricultural and Resource Economics, and Risk Management.

B. Strategies to achieve goals:

1. Continuous systematic review and refining of M.S. curriculum
2. Assure that graduate students receive superior opportunities and environment to learn and be mentored
3. Provide graduate students with a strong and nationally recognized core curriculum in quantitative methods and field courses which correspond to industry/Ph.D. demand and faculty expertise
4. Continuously recruit high quality graduate students who can be trained in teaching and research by gainfully employing them as (a) research assistants supported on grants and (b) teaching assistants supported on summer school/Outreach College proceeds for undergraduate courses
5. Offer a new MS degree in Applied Econometrics and Quantitative Risk Management for full paying students.

C. Actions:

	Time Period
• Assure graduate students acquire the tools of economic analysis relevant to performing well in academic and non-academic careers as applied economists.	FY12-21
• Review and refine M.S. curriculum.	FY12-13
• Solicit and obtain new round of National Needs Fellowships from USDA.	FY13-14
• Solicit NSF Master's program support.	
• Build upon existing public-private partnerships and seek new partnerships and internships.	FY 12-21

• Designate a Career Placement Director (for recruitment and placement)	FY 15-21
• Establish and pursue goal of \$1.5M endowment & \$50k in restricted UA Foundation	FY 12-21
• Initial offering of self-financed, 3-semester (16 month) M.S. degree in Applied Econometrics and Risk Management.	FY16
• Increase numbers in self-financed M.S. program to 20 students per cohort.	FY 17-21

D. Inputs needed to achieve the goal:	Time Period
• Maintain graduate-level expertise in three strategic areas: Applied Econometrics; Economic Development; and Environmental and Resource	FY15-21
• Timely approval of proposal to offer new MS degree in Applied Econometrics and Risk Management.	FY13-14
• Dedicated faculty and CALS Development effort toward \$1.5M & \$50k goals.	FY13-21
• Replacement of retiring faculty (same lines as in Goal 1)	FY 13,15,16
• Two additional faculty lines (same lines as in Goal 1)	FY 15-17
• Advertising & marketing of full-paying new degree program on website & elsewhere (\$20k annually from restricted UA Foundation accounts, summer school proceeds, etc.)	FY 15-21
• CALS's continued recognition of AREC graduate programs as one of the pillars of its strength and national reputation.	FY15-21

E. Objective Metrics that will be used to track progress towards attaining goal:

1. Number of MS degree (Agricultural and Resource Economics) awarded annually
2. Number of MS degree (Applied Econometrics and Risk Management) awarded annually
3. Number of publications coauthored by faculty with current and recent (< 5 years) graduate students
4. Number & amount of external fellowships and scholarships awarded annually
5. Number of awards garnered by graduate students annually
6. Placement records of initial post-graduation job of AREC M.S. students (job title, company, salary)

STRATEGIC GOAL THREE:

ENHANCE REGIONAL RECOGNITION AS THE “GO TO” SOURCE OF RESEARCH-BASED, UNBIASED EXTENSION AND OUTREACH PROGRAMS FOR ADDRESSING SUSTAINABLE ECONOMIC DEVELOPMENT IN THE SOUTHWEST

A. Current situation and gap between current and desired situation:

- FY 12-13: Demand for extension faculty’s participation in economic analyses and program development by Arizona agricultural and natural resource management stakeholders and colleagues in other units is high relative to the 1.95 extension FTE available. Three extension specialists fully fund their extension program travel, operations, software and database acquisitions through extramural grants, contracts plus other external funds. These funds also provide partial support for AREC extension staff and tribal extension programs. Among AREC extension grants and contracts, ten have Co-PIs with six other units in CALS.
- FY 14-15: Enhance capacity of tribal and county agents to respond to stakeholder economic information requests in cooperation with campus-based extension faculty.
- FY 14-17: Enhance AREC’s capacity to conduct economic impact analyses by recruiting AREC graduate students that desire to work in this area. These students would be directed to conduct economic impact analyses of diverse regional economic development projects, private sector investments, and CALS programs with an emphasis of measuring benefits to local Arizona economies (personal income, jobs created, return on investment, etc.).
- FY 17-21: Have an AREC Extension Assistant that can independently conduct economic impact analyses and communicate these results to lay audiences.

B. Strategies to achieve goal

1. Provide trainings and support materials on economic issues to county and tribal agents.
2. Develop and improve analytical tools, business plans, and marketing plans that increase efficiency and profitability of rural and tribal economic development ventures.
3. Develop in-house capacity for location, sector and technology-specific input-output modeling and energy return-on-investment modeling; provide industry-supported analyses and reports on economic development projects.
4. Continue and expand collaboration with other units in CALS and the UA on multi-disciplinary integrated research and extension grant projects.
5. Support AREC graduate research assistants via extramural grants for integrated research and extension projects; supervise thesis research related to Arizona extension needs.
6. Through extramural funds, hire one of the productive graduate students as an Extension Assistant to address economic impact analyses.

C. Actions

Time Period

- Expand collaboration with extension agents and specialists, other UA units and local, state and federal agencies in support of integrated research and extension programs in the following areas:
 - i. *Renewable energy* (solar, wind, bio-energy crops, wind, and methane digesters in livestock production),
 - ii. *Local food systems* (technical assistance for direct farm marketing and agritourism ventures),

FY 12-21

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- iii. *Land use management* (assist rural communities in assessing implications of changes in land use policies and siting of new industries locally),
 - iv. *Water* (economic assessments of drought impacts, water transfers, and adoption of improved irrigation systems; assessments of water requirements for energy and other new commercial projects),
 - v. *Biotechnology* (maintain sustainability through contributions to ongoing insect-resistance and herbicide-resistance management programs in the state), and
 - vi. *Commodity Outlook* (continue providing updated situation and outlook information on livestock and grain commodities to Arizona producers and agribusinesses).

- In collaboration with other CALS and UA units, submit extramural grant proposals to support program areas listed above. FY 12-21
 - Develop and strengthen AREC's graduate student and extension faculty capacity to conduct specific economic impact analyses using proprietary software and data for Arizona including input-output models (using IMPLAN software and data) and energy investment modeling (using HOMER software). FY 12-21
 - Develop an online *Arizona Review* and email list that is more cost effective than the traditional print and mail version. FY 12-21
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D. Inputs needed to achieve the goal	Time Period
• Current 1.95 extension FTEs.	FY 12-21
• Participation of tribal and county agents, and extension specialists on collaborative projects.	FY 12-21
• Funding from industry sources to support commissioned analyses and reports.	FY 12-21
• Proprietary data and software for specialized economic analyses.	FY 15 -21
• Graduate students (2-3 per year).	FY 12-21

E. Objective metrics that will be used to track progress towards attaining goal

1. Number and amount of industry, tribal, and institutional donations made to AREC's extension pathway foundation account.
2. Number and amount of extramural grants and contracts received.
3. Number of graduate students supported and AREC MS theses completed that involve integrated research and extension projects.
4. Number of economic impact studies conducted.
5. Number of economic presentations and publications to limited-resource farmers and ranchers.
6. Number of economic presentations by extension faculty-mentored tribal agents.
7. Number of participants in local food systems training.
8. Number of participants in renewable energy trainings.
9. Adoption of new energy systems.
10. Number of business plans created and implemented by limited resource farmers and ranchers.
11. Extension FTE hours supported by extramural grants and contracts.

STRATEGIC GOAL FOUR

PROVIDE NATIONALLY AND INTERNATIONALLY RECOGNIZED RESEARCH IN SUPPORT OF MULTIDISCIPLINARY GRANTS, EXTENSION, AND ON-CAMPUS TEACHING.

A. Current situation and gap between current situation and desired situation:

- FY12: Competitive grants & contracts generated by about half the faculty.
Department ranking in agricultural & resource economic research dropped several places from #8 in 2005.
Current areas of research strength include sustainable water management in arid regions, regional economic adaption to drought and climate change, and applied economic analysis.
- FY17: Enhance grantsmanship participation rate to include more than half the faculty.
Target grant and contracts to increase by 40% over the 2012 level.
Improve department ranking in research.
- FY21: Competitive grants & contracts generated by a majority of faculty doubling the 2012 total.
Restore departmental research ranking to at least #8.

B. Strategies to achieve goal:

1. Communicate that the value of applied economic research is measured in more than just indirect cost dollars generated.
2. Develop a departmental and college culture in which applied economic research is valued and respected.
3. Communicate the importance of economic research in teaching to undergraduate and graduate students, university colleagues, and off-campus stakeholders.
4. Encourage and foster enhanced research productivity in all its manifestations.
5. Augment collaboration and partnerships with researchers within the college and throughout the university.
6. Foster stimulating intellectual climate in the department/unit in order to hire and retain best faculty.

C. Actions	Time Period
• Provide timely postings of research contributions and findings on unit and CALS websites.	FY12-21
• Give “visiting” seminars in other CALS units highlighting relevance of applied economic research.	FY12-21
• Semi-annual advisory council meetings & other professional forums communicating departmental research value added to society.	FY12-21
• Regular brown bag seminars by faculty and graduate students	FY12-21
• Establish & maintain regular multidisciplinary-focused seminar series	FY12-21
• Regular seminar series with visiting scholars engaged in collaborative research	FY12-21

D. Inputs needed to achieve goal:

• \$50k for website activity (10 years @ \$5k/year from grants, contracts & donations)	FY12-21
• Involvement of Center for Sustainable Economic Development (see Goal 3)	FY12-21
• \$25k for advisory council/professional events (5 @ \$5k/event)	
• Replace 3 retiring full professors with assistant professors, sharing any difference in salary between CALS and unit (same as in Goals 1 – 3)	FY 13,15,16

- 2 additional assistant/associate professors with startup of \$40k / line; alumni & industry donations will cover startup (same lines as in Goals 1 – 3) FY 15 - 17
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E. Objective metrics that will be used to track progress towards attaining goal

1. Number of grant proposals submitted & success rate
2. Dollar amount of grant proposals funded
3. Number of manuscripts submitted and ultimately published
4. Impact factors of published research
5. Amount of monetary and non-monetary research support from alumni
6. Amount of monetary and non-monetary research support from industry/clientele groups
7. Number of undergraduate students participating in research projects
8. Number of research website hits
9. Number of alumni research events
10. Number of industry/clientele research events