Tucson, Arizona

Academic Program and Cooperative State Research, Education, and Extension Service Review

Spring 2008

SELF STUDY DOCUMENT
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The Department of Agricultural Education Acronym Guide

<table>
<thead>
<tr>
<th>Acronym</th>
<th>Description</th>
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<tbody>
<tr>
<td>AAAE</td>
<td>American Association for Agricultural Education</td>
</tr>
<tr>
<td>ACTER</td>
<td>Arizona Career &amp; Technical Education for Research</td>
</tr>
<tr>
<td>ACT</td>
<td>Agriculture Communicators of Tomorrow</td>
</tr>
<tr>
<td>ACE</td>
<td>Agriculture Communicators in Education</td>
</tr>
<tr>
<td>ACOVA</td>
<td>Arizona Council for Occupational &amp; Vocational Administrators</td>
</tr>
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<td>AATA</td>
<td>Arizona Agriculture Teachers Association</td>
</tr>
<tr>
<td>NAAE</td>
<td>National Association of Agricultural Educators</td>
</tr>
<tr>
<td>ATF</td>
<td>Articulation Task Force</td>
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<tr>
<td>ATA</td>
<td>Alpha Tau Alpha</td>
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<tr>
<td>ACTE</td>
<td>Association of Career &amp; Technical Education</td>
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<tr>
<td>ACTEAZ</td>
<td>Association of Career &amp; Technical Education of Arizona</td>
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<tr>
<td>AIAEE</td>
<td>Association of International Agriculture &amp; Extension Educators</td>
</tr>
<tr>
<td>4-H</td>
<td>Health, Heart, Head &amp; Hands</td>
</tr>
<tr>
<td>MANRRS</td>
<td>Minorities in Agriculture, Natural Resource &amp; Related Sciences</td>
</tr>
<tr>
<td>OAP</td>
<td>Office of Academic Programs</td>
</tr>
<tr>
<td>CDE</td>
<td>Career Development Event</td>
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<tr>
<td>SLC</td>
<td>State Leadership Conference</td>
</tr>
<tr>
<td>DELTA</td>
<td>A five day professional development conference as part of the professional growth component of the National FFA Organization’s LifeKnowledge initiative</td>
</tr>
<tr>
<td>AERA</td>
<td>American Educational Research Association</td>
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<tr>
<td>JTED</td>
<td>Joint Technology Education District</td>
</tr>
<tr>
<td>NCA/NCAC</td>
<td>North Central Advisory Committee (North Central Administrative Committee)</td>
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<td>CSREES</td>
<td>Cooperative State Research, Education, and Extension Service: Unites the research, higher education, and extension education and outreach resources of USDA</td>
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<tr>
<td>USDA</td>
<td>United States Department of Agriculture</td>
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<td>NAVIT</td>
<td>Northern Arizona Vocational Institute of Technology</td>
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<td>NACTA</td>
<td>North American College Teachers of Agriculture</td>
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A. Program Description and Goals

The goals of the Department of Agricultural Education, a unit in the College of Agriculture and Life Sciences (CALS), match that of the goals stated in the University of Arizona’s Five-Year-Plan (2009-2013). Goals in the Plan include:

- Prepare Arizona’s Youth and Ensure Access and Opportunity (I)
- Engage and Graduate Students Who Can Contribute to the State, Nation, and World (II)
- Provide World-Class Research That Improves the Human Condition in Arizona and Beyond (III)
- Partner With and Serve the People of Arizona (IV)

The Department of Agricultural Education contributes to the College’s unique functional role as a leader in the University’s land-grant mission by providing an array of programs in formal undergraduate and graduate instruction, research, and service to enable the people of Arizona, the nation, and beyond to improve the quality of their lives. The following are the Department’s Vision, Mission, and Credo statements that serve as the basis for our programmatic goals and efforts:

**Vision (I, II, III, IV)**

We engage the leadership of the future in Agricultural Education by providing a better quality of life through agricultural technology management, formal and informal education for our students, the people of Arizona, and society.

**Mission (I, II, III, IV)**

The primary mission of the Department is serving a diverse population through teaching, application, integration, and discovery in agriculture, education, and applied science and technology leading to successful careers in Agricultural Education and related businesses and industries.

**We accomplish this by (I, II, III, IV)**

- Providing undergraduate and graduate curricula in agricultural teacher education, and interdisciplinary agricultural technology management.
- Conducting educational research.
- Providing professional improvement opportunities and instructional support for non-formal educators, and for faculty and administrators in the K through post-secondary education continuum.

**Our Credo (I, II)**

We are student centered and value:

- Quality teaching and advising
- High standards of professionalism, performance, and practice
- A positive learning environment for students, staff, and faculty
- Continuous personal development for all faculty and staff
- Teamwork
- Open communication
- Mutual respect

The strength of the Department is firmly grounded in its nationally and internationally recognized faculty who in a positive and proactive manner are committed to educational excellence and to addressing the challenges and opportunities presented by the current climate of change within the College, the University, the nation and the world.

**Division of Responsibilities**

In order to systematically fulfill the vision and mission of the Department, each core faculty in the Department has certain duties and responsibilities. The following list outlines those basic assignments:
All Core Faculty Members

- Advise undergraduate and graduate majors
- Supervise internships and independent studies
- Develop and teach workshops as needed
- Conduct research and direct research studies
- Contribute to the professional literature in agricultural education
- Participate actively in professional organizations and their activities
- Serve on University, College, and Department committees
- Promote good public relations for the University, the College, and the Department
- Participate in teacher education and state supervisory programs and activities
- Keep fellow faculty members informed in regards to problems, concerns, and accomplishment in major program assignments
- Assume responsibility for recruitment and retention of agricultural education students

Jack F. Elliot, Professor and Head

- Serve as administrative head of Department
- Responsible for budgetary decisions and fiscal resource management
- Prepare required departmental reports
- Coordinate strategic planning
- Coordinate, manage, and advise faculty, staff, and program evaluations
- Coordinate TRIF (301) grant
- Provide coordination and leadership for grants with the Arizona Department of Education

Department of Agricultural Education
Recent Highlights

Our top ten list:

I. The only 5-year State Board of Education teacher education approval rating (out of 21 UofA departments - the only secondary level program in the state so far).

II. Swept the three 2006 Western Region American Association for Agricultural Education Research Conference (AAAE) Awards and won the Outstanding Research Paper at the National Agricultural Education Conference. In 2007, three posters won the Western Region AAAE Awards and competed nationally where one won Runner-Up Honor at AAAE.

III. Initiated the only agricultural education focused multi-state research project in the United States, W-1006 (Dave Cox is the administrator and Jack Elliot is co-chair).

IV. Discretionary funds (not including summer session, indirect and salary savings) are up from ~ $30,000.00 to ~$90,000.00. Eight graduate students have some sort of financial support. FRS grant balance is up from ~ $350,000.00 to ~$570,000.00. Summer session, indirect, and salary savings funds are up from $37,577.00 to $44,483.00.

V. Seven universities competed in four national collegiate competitions in Indianapolis, Indiana the last week of October, 2007. The Department of Agricultural Education congratulated the Jacobs Cline members for winning three of the four contests at the ATA National Conclave: Program of Excellence in Fellowship Category and Overall Contest, Parliamentary Procedure, and Debate.

VI. Dr. Jim Knight won the Arizona ACTE (The Association for Career and Technical Education) Outstanding Educator (Post-Secondary) Award. He also won the USDA Excellence in Teaching Award.

Department of Agricultural Education, University of Arizona
VII. Dr. Billye Foster was selected and completed the HERS Bryn Mawr Summer Institute for Women in Higher Education Administration.

VIII. 6/7 core faculty actively sought extramural funding - 5/7 were successful. Finalist (2/18 proposals) in a million dollar national grant - came in second. Some additional equipment was added to the Department inventory due to faculty solicitation.

IX. Fall student credit hours were the highest level in our history (94'-649; 05'-1517; 06'-1650; 07'-1921)

X. Faculty are leading the two national agricultural education high school teacher professional development seminars, Delta and Teacher Turn the Key. In addition, faculty are leading the young agricultural education faculty professional development seminar, Omega.

XI. The addition of outstanding faculty - Kerry Schwartz, Lisa Lauxman, Paul Kohn, Barbara Hutchinson, Sabrina Tuttle, Steve Poe and Patty Merk.

Recent Faculty and staff issues (promotion, tenure, continuing appointment, market, retention, etc.)
- Sue Scalero, administrative associate, retired June 2007.
- Bill Hanekamp, retired in June 2007.
- Glen Miller, professor, is retiring in 2 years.
- Jim Knight, professor, is retiring in 3 years.
- Quint Molina is completing his degree.
- Ed Franklin is leading the AGTM operations.

Efforts to promote diversity, equity, and a supportive climate.
- All department meetings have a diversity activity or a Strength Quest activity.
- MANRRS is advised by Dr. Foster and Mr. Santiago.
- Submitted salary adjustments for Dr. Foster and Mr. Molina.
- Support Dr. Foster’s role as Special Assistant for Diversity to the CALS Dean beyond her 12 days (5%) per year.
- Submitted two applications on behalf of the Department for university and college diversity awards.

Response to Annual Review Questions.
I. Your unit’s contribution to the Plan of Work as submitted to USDA.
   Most of our focus is in the areas of:
   - Family, Youth, and Community and
   - Environment, Water, Land, and Natural Resources.
II. Your unit’s plans for implementing student learning outcomes assessment.
   - We have done this in Agricultural Education for decades and are currently under a validation process by business, industry, and educational personnel.
   - Drs. Franklin and Miller are initiating the process for AGTM.
III. Changes in your curriculum to account for fewer faculty.
   - Created a two-year teaching plan.
IV. Any changes to your department’s strategic plan.
   - The main focus is development of the MOVE plan. With the Norton School of Family and Consumer Sciences moving into their new building in 2008, the Department has the opportunity to move into the Family and Consumer Sciences Building. This will give the Department more physical space as well as play a positive role for the future.
V. Your development/fund raising efforts and successes.
   - See top ten items above.
   - Work with the development office has been minimal, but is anticipated to increase as the MOVE plan is approved.
VI. Your department’s business environment.
   - Monthly accounting reports are provided to all faculty at our regularly scheduled department meetings.
• Monthly accounting reports and meeting occur with Department Head and Accountant.
• Accountant and Department Head met with Associate Dean Alma Sperr to seek advice on improving our accounting activities.

VII. Other unit issues, concerns, and trends of your choosing.
• Department Advisory Committee is active.
• CALS needs this department: Bio-5, Prop. 204. (Ag. Com.), etc.
• The Department is evolving into a non-peer situation (aka FCS).
• Arid Lands Ph.D. seems to be working with our students.
• MBA/AgEd Masters, has some issues, but is working.
• Masters Certificates in College Level Teaching, Water Policy, Aquaculture, Controlled Environmental Agriculture, Biotechnology, etc., need finalizing.

Department of Agricultural Education
Annual Report for Calendar Year 2007

I. Executive Summary:
The Department received the only five-year approval rating (the next highest rating is a three-year approval) among 21 University of Arizona teacher preparation units. I start with this statement because it seems our primary work lies in documenting what we do and where we are going. This past year we have been preparing the self-study for the CSREES/UA Academic Program Review in April, 2008.

The strength of the Department remains firmly grounded in the nationally recognized faculty who are committed to educational excellence, and to addressing the challenges and opportunities presented by the changes occurring all around us. The barriers to progress in achieving the mission of the Department rest primarily in resources, which are manifested into feelings of faculty and staff being overwhelmed most of the time.

The Department's vision is to be a leader in agricultural and natural resources education by providing a better quality of life through agricultural technology management, and formal and informal education for our students, people of Arizona, and society. The mission of the Department is to serve a diverse population through teaching, application, integration, and discovery in agricultural education and applied science and technology, leading to successful careers in agricultural education and related businesses and industries. We accomplish our mission by (1) providing undergraduate and graduate curricula in agricultural education, non-formal education, and interdisciplinary agricultural technology management; (2) conducting educational research; (3) providing professional improvement opportunities and instructional support for non-formal educators, and for faculty and administrators in the kindergarten through post-secondary education continuum.

Research: Our faculty/graduate students continue to win research awards at Western Region Agricultural Education Research Conferences, National Agricultural Education Research Conferences, Association for Career and Technical Education Research, as well as the Association for International Agricultural and Extension Education. In addition, the first Multi-State Research Project in agricultural education, W-1006 began its first year of operation. Initial findings indicate that teachers who utilize Ag-In-The-Classroom® strategies have students who score higher on high-stakes tests such as AIMS, the Arizona Instrument to Measure Standards.

Two of our faculty are officers in the Association for Career and Technical Education Research (ACTER), the premier educational research organization in our profession. A new National CTE Research Agenda, created by a 5-step combination Delphi/Logic Model process, will be unveiled at the ACTE National Policy Seminar in March. This unique process is being conducted under the direction of faculty.
Teaching: Although the Department continues to improve its student credit hour production (the Department recorded its highest student credit hours ever again this fall), the high teaching loads could not continue without the temporary commitment support from the College. AED 408 Diverse Issues in Contemporary Society, Dr. Foster's course, has been a huge success, both sections filling to capacity each semester. Every year at a university is a challenge and 2007 was no different for the Department of Agricultural Education. The high demands for the faculty's expertise is a positive and a negative. On one hand, sharing Dr. Knight with the Office of Academic Programs and Dr. Foster as Special Assistant to the Dean on Diversity is a great compliment to their talents. On the other hand, the demands of these positions reduce their time for Department matters. We reconfigured our GTA allotments (by reducing the GTA from .5 to .34) and combined grant resources to enable us to increase from two to six GTAs this year. Mr. Molina completed the revalidation process that drives our teacher education program. That field-based research increased our essential teacher education competencies from 85 to 91.

The Department has taken the first steps in moving toward a distance education delivery model. An increasing high number of nontraditional (provisionally certified) teachers in the field has created a demand for an unconventional strategy to offer certification courses. Eight courses have been approved through continuing education and some pilot tests are underway (a working agreement with the Pima Joint Technical Education District [JTED] is in draft format). It is apparent that there is a high demand for these courses, which leads us to the conclusion that a designated person needs to be hired to coordinate the distance program.

Honors: Among the many honors, these two were significant for faculty: Dr. Knight was recognized as Arizona's Outstanding CTE Post Secondary Educator, and he also was honored with the USDA's Excellence in Teaching Award. However, student achievement is always our highest goal. After a seven-year absence, our students returned to the national collegiate agricultural education competitions in Indianapolis, Indiana. Twenty-seven universities participated in four competitions and we won three events: Debate, Parliamentary Procedure, and Program of Excellence. Faculty advisors Quint Molina and Frank Santiago have created a welcoming atmosphere that breeds success.

Service: Kerry Schwartz is our primary face throughout the state as she continues to lead the Arizona Project Wet® efforts. However, the teacher induction program, coordinated by Ed Franklin, keeps all of us in about 30 Arizona public schools throughout the year. The State Department of Education professional development grant provides seed money to help us move agricultural education to a viable future. We are leading the charge for secondary-level agriscience program reviews under the leadership of Quint Molina. In addition, we are coordinating all agriscience assessment efforts, including test question generation, curriculum development (last summer three CDs with over 250 complete lesson plans that included objectives, academic crosswalks, assessments, and supplemental material such as worksheets, power point presentations, etc. were developed and distributed), assessment validity and reliability efforts, and actual testing protocols. For example, fourteen teacher and student reference units are in various stages of production under faculty supervision. The latest scientific research is conveyed to high school students by high school teachers through the use of these documents. All publications when completed are available through CALSMART. Our faculty is involved in teaching and facilitating Teacher Turn the Key, the premier National Agricultural Education Professional Development activity for young teachers. In addition, a national young faculty professional development conference, OMEGA, was initiated by our faculty and 30 people participated in the ten-month adventure. Further, our Extension faculty provide educational and outreach programs throughout the state. Participation on committees include the Undergraduate Council, the Science and Math Education Committee, the Association for Women Faculty, National Faculty Center Advisory Committee, and the Millennium Oversight Committee. Dr. Franklin serves on the State FFA Advisory Committee; Dr. Elliot serves on the State Board of Education CTE Advisory Committee; and Mr. Molina serves on the AATA Board.

Challenges: By the time you read this, it will seem redundant, but the challenges are simple, a severe lack of funding, and at times the lack of appreciation for what we do.
**Funding:** When each new fiscal year begins, I calculate that we have funds to operate about 6-8 weeks. That timeline is realistic if we want to conduct business in a manner that creates an environment where our young faculty can progress through the promotion and tenure system, and where we can offer the type of program that is contemporary for today’s students and that is appropriate for the state of Arizona. The evidence is clear, the University of Arizona is extremely fortunate that we have Agricultural Education faculty and staff who won’t give up and who have an entrepreneurial spirit. Our group has sought very creative ways to keep functioning in these difficult times. This is not the case throughout the country.

**Appreciation:** We do very well when it comes to honors, awards, and competitions, but comments in the local paper that belittle faculty efforts really put a damper on morale. In addition, education and teaching honors seem to take a back seat (or no seat) during CALS public forums. I will do a better job of informing the Executive Council of these important events.

II. Units Contributions to the University’s Strategic Plan (2009-2013):

A. **Strategy I: Prepare Arizona’s Youth and Ensure Access and Opportunity:**

1. Narrative: The January headline said, “Arizona teacher salaries last in the country.” It is the money. We recruit well, we are the best teacher education unit in the university, and yet, it is difficult for young people to earn a livable wage as an educator. Arizona has made educational careers a nice second career for a family unit. Our new recruitment strategy is to give us 3-5 years, then make a decision to stay in education or leave and be an advocate for change.

We are committed to the education profession and understand the realities of low salaries bring unintended ramifications. For example, a shortage of qualified teachers means that schools hire people who need to be certified. We have taken the first steps in being able to offer certification courses via distance delivery methods through Continuing Education. However, our pilot experiment during 2007 indicates that we cannot add this onto our current faculty and staff. We need a designated person to coordinate this activity.

Our new faculty all have educational interests and want to help. For example, Patty Merk and Jim Knight are offering a summer course that revolves around “brain-based” learning and the strategies to improve education for all learners. Sabrina Tuttle, Lisa Lauxman, and others have been involved with the Wildcat School. Kerry Schwartz has all of her educational offerings crosswalked with Arizona Academic Standards. The main concern for all of us is finding the time and then negotiating the paperwork for these distance-delivered courses.

2. Statistical:
   a. Prepared 7 STEM Licensed Teachers.
   c. Distributed $48,000 to 32 different undergraduate students.
   d. Eighty-seven undergraduate students.
   e. SAT
### GPA, SAT, ACT for First Time Full Time Freshmen (Agricultural Education)

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<tr>
<th>Term</th>
<th>Attribute</th>
<th>Number Students</th>
<th>Min</th>
<th>Avg</th>
<th>Max</th>
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<td>2.72</td>
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<td>GPA (HS)</td>
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<td>2007-4</td>
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<td>2004-4</td>
<td>SAT</td>
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<tr>
<td>2005-4</td>
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<td>2003-4</td>
<td>SAT Equivalent</td>
<td>8</td>
<td>780</td>
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<td>2004-4</td>
<td>SAT Equivalent</td>
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<td>910</td>
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<td>2006-4</td>
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<td>620</td>
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B. **Strategy II: Engage and Graduate Students Who Can Contribute to the State, Nation, and World:**

1. **Narrative:** During the past year, we initiated the Eller School of Management MBA/AgEd Masters Program. A formative evaluation of the program is planned for this spring. A student exchange with the University of Namibia is being developed in conjunction with the International Office. Most of our graduate students complete the College Teaching certificate as part of their masters program. We are hoping that more agricultural content certificates obtain approval in the near future. A diverse graduate student audience is enrolling through our distance education courses. People who cannot leave their careers are finding that distance education allows them the opportunity to advance educationally without leaving their homes.

A large part of anyone's educational development is improving one's soft skills. A good way to do that is through student organizations and groups. Most faculty are involved in student organizations: Dr. Foster and Mr. Santiago with MANRRS; Dr. Franklin with the CDE student chairs; Mr. Molina and Mr. Santiago with Jacobs-Cline Society; Dr. Knight with CALS Ambassadors; Dr. Elliot with Agricultural Communicators of Tomorrow; Dr. Miller with ATA, the agricultural education honorary; and Mr. Santiago and Dr. Elliot with the Arizona State FFA Officers who attend the University of Arizona. The top attributes

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Department of Agricultural Education, University of Arizona
employers desire include communication, teamwork abilities, and a good work ethic. Students who participate in these groups receive these abilities. Faculty who participate as advisors sometimes feel they are unrecognized, unappreciated, and not valued.

2. Statistical:
   a. Undergraduate degrees conferred
   b. Six-year undergraduate graduation rates
   c. Percent of graduate and first professional students enrolled

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3. Percent of graduate and first professional students enrolled

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e. 11 masters and first professional degrees awarded.
f. No students were involved in Outward Bound, Study Abroad, or Exchange Programs.
g. No ranked faculty self-identify in an Ethnic Minority Group.
h. Forty percent of our ranked faculty are women.

C. Strategy III: Provide World-Class Research That Improves the Human Condition in Arizona and Beyond:

1. Narrative: All of our teaching and outreach is based on sound scientific research. For example, we know what supports effective teaching delivery strategies. The principles of teaching and learning are based on research from the field of psychology, whereas brain-based applications have evolved from medical research. Similar relationships can be drawn with creative learning, critical thinking, problem-based learning, multiple intelligences, learning styles, and so on. I share this because, in addition to our scholarly
publications and much like our colleagues in other departments, everything we do is either research or applications derived from research. The difference in our department is that most people think they understand education (because they went to school once or because they actually teach at the university) and therefore do not recognize the complexity of what it takes to truly have effective education. For example, the simple task of observing a student teacher requires that the observer (our faculty) have an in-depth understanding of the domains of learning (cognitive, affective, and psychomotor) along with the other tenets of education listed above. Improving the human condition is first and foremost a goal of this unit. The difference is we understand the science of how to do it.

2. Statistical:
   a. R&D expenditures ~ $250,000.00
   b. Federally financed R&D expenditures ~ $89,000.00
   c. Average citations per tenure/tenure-eligible faculty ~ 2.3
   d. Three faculty participate in graduate interdisciplinary programs.
   e. We do not offer a Ph.D.
   f. Number of post-doctorates employed - not applicable.

D. Strategy IV: Partner With and Serve the People of Arizona:

1. Narrative: We reach almost 100 Arizona communities a year, not through Extension, but through our work with public education. We offer numerous professional development workshops for agriscience educators. We conduct an agriscience induction program for new and beginning teachers. We supervise agriscience student teachers. The main point is that our faculty, our tenure-track faculty, are involved in serving the people of Arizona by improving education in all corners of the state.

Kerry Schwartz and our Extension faculty conduct hundreds of workshops, events, etc. throughout the state reaching literally tens of thousands of people. We need to continue to remind folks that we are the University of Arizona when we are in the state.

Our Department Advisory Committee meets twice a year, includes nine people, and has a three-year rotation. We continue to improve our relations with the community colleges through the Articulation Task Force.

2. Statistical:
   People served by Arizona Cooperative Extension - 254,525 participants in Cooperative Extension programs
   People served by Arizona Telemedicine - not applicable
   Number of office of technology transfer & entrepreneurial start-ups - zero
   Number of endowed chairs - zero
   Annual giving - zero
   Endowment assets - $100,000.00

I. Unit's Unique Challenges and Strategies for Addressing the Challenge:

A. Challenges:
   1. Stable Funding
   2. Finalize, gain approval, and implement a comprehensive visioning plan for the future of the Department within the new space in the FCS building.
   3. Continue to seek and add world-class diverse faculty for joint and adjunct appointments. Finalize the Intercultural Communication Program under the leadership of Dr. Foster.
   4. Encourage faculty to participate in grant review panels.
   5. Seek additional support for the Namibia MOA.

Department of Agricultural Education, University of Arizona
6. Enhance the Agricultural Communications option.
7. Continue to expand the StrengthQuest and diversity activities.
8. Formalize the Controlled Environment Agriculture and Biotechnology graduate certificates.
9. Improve our distance education offerings.
10. Continue to improve the Department's recruitment material and improve the efficiency of the recruitment process.

B. Strategies:
   • All items are built into our Program of Work. We need Executive Council support to move forward on many of these items.
   • Encourage participation of all faculty on external committees.
   • Provide outreach education to pre-University students to interest them in College of Agriculture and Life Sciences careers.
   • Improve agricultural education alumni receptions around the state in conjunction with CALS development efforts.
   • Continue to increase the number of CALS development visits.
   • Arizona Project WET is working with an Advisory Council to create and maintain a sustainable, statewide water education program.
   • Continue to utilize the Department's Advisory Committee on a regular basis.

I. Critical Needs:

We need a person to coordinate our continuing education offerings.

II. The Final Five Items:

Changes in your curriculum to account for fewer faculty.
   We created a two-year teaching load planning guide that is updated during our monthly Department meetings. We submitted a plan to the Executive Council for teaching AGTM 380, but it was denied. We will delete the course for a while until we can figure out a way to teach it. We are developing continuing education offerings, but we need a person to coordinate the courses.

Any changes to your department's strategic plan.
   We update our strategic plan every summer during our Advance meeting.

Your development/fund-raising efforts and successes.
   The desire is there, but the time devoted to this area is practically nonexistent. I am not sure what to give up to make time for this.

Your department's business environment.
   One of our strategies to improve in this area is monthly meetings with the Department Head and the Accountant to review all financial reports. Further, with the addition of Kristen Vann, administrative associate, a Team Management breakfast meeting occurs several times a month to review procedures and plan for the future.

Other unit issues, concerns, and trends of your choosing.
   It is better, but the Executive Council can still help promote the Department's expertise as educational experts. It became clear to me that some advances have been made, but we still are not the first choice (usually not even thought of) when other CALS scientists are seeking educational outreach for their NSF grants (as an example). They still think all we do is train vo ag teachers.
Conclusion:

Accomplishing the Department’s mission by completing the goals and objectives of our action plan has become the focus of our Department and Faculty meetings. The faculty and staff pride themselves on being student-focused, but are realizing that this philosophy is not necessarily the primary focus of the University. Therefore, merging our operational philosophy of being heavily student-focused with the overarching University development goals is a continual challenge.

The move to the FCS building is exciting as well as daunting. Preparing the strategic plan that can position the Department for the future is still the number one Department priority. Involving the Department’s Advisory Committee, Team Ag. Ed., and other constituency groups has enabled all stakeholder groups to have input concerning the move. Keeping all entities informed is another priority, not only on the move, but with all of our activities that affect them. Therefore, communication through our twice a semester newsletter, almost monthly Team Ag. Ed. meetings, numerous list serves and websites will continue to be maintained and improved.

The Department is positioned well in regards to its personnel including its affiliate, joint, and new faculty. The group is creative, talented and professional, but most of all passionate for the work they do. It is my hope that they are allowed to flourish in our evolving University environment and within the profession.
B. Program History (Since last review)

A review of the Department was conducted during Spring of 2001. At that time the Department consisted of Dr. James Knight, Head, Dr. Edward Franklin, assistant professor, Dr. Billye Foster, assistant professor, Dr. Jack Elliot, associate professor, William Hanekamp, senior lecturer, Dr. Nancy Huber, associate professor, and Dr. Glen Miller, professor with tenure.

Response to the 2001 CSREES and UA Academic Program Review

The Department has experienced some tremendous success in many areas, especially those associated with the teacher preparation phase of the program. The faculty possesses a rare combination of talents and professional expertise welded by a very powerful and consistent philosophy based upon service to the constituents of the program. As a Department, they teach an inordinate number of courses relative to other departments in the College and the University. The students rate them highly and are pursuing majors in the Department at higher numbers than ever before in the Department’s history. There has been excellent support for the Department from the College and so the program has experienced needed growth to handle the increased teaching loads.

In reviewing the reviewers’ report of the program review, we are faced with a bit of a paradox. It appears that the Department’s strengths are also its weaknesses. With this in mind, people in the Department have studied the recommendations of the review team and believe the following strategies and activities offer the best opportunity for achieving those recommendations.

<table>
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<th>Strategies</th>
<th>Results</th>
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<td>Develop a strategic plan that becomes delineated in terms of activities, a division of responsibilities and a calendar of events within the Department.</td>
<td>The focus of our summer planning meetings. See Appendix 1</td>
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<td>Continue to support and encourage the excellent teaching, advising and service activities that have brought the Department to its present status.</td>
<td>In 2006 received the only 5-year approval out of 21 UA teacher education units. See Section P and Appendix 19.</td>
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<td>Improve the existing facilities and try to find more space for future growth and development.</td>
<td>Moving to FCS building by 2010 and initiated a CTE facility plan for the Campbell Avenue Center.</td>
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<td>Recognizing that teaching is still Job #1, we will work to bring greater focus to the research program of the Department. This can be done with individual faculty efforts and with Department and College support. The goal will be to have the Department more recognized nationally and internationally for its research efforts and programs. The major focus of our efforts will be related directly to the Departmental vision and mission.</td>
<td>Just in the past several years our record at the Western Region and National AAAE meetings show increased quantity and quality.</td>
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<td>Strengthen the ties with the Cooperative Extension service.</td>
<td>A quick glance at our affiliate faculty shows advances in this area</td>
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<td>Promote and encourage a coherent international dimension in the Department to provide a global perspective to the curriculum, instruction, research, and faculty development.</td>
<td>AIAEE participation is high. Several courses focus their content in this area, especially A ED 408.</td>
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<td>Appoint and involve an Advisory committee to assist the Department in looking forward, being responsive to its constituents, and improve all of its programs.</td>
<td>The Department Advisory Committee meets regularly and includes a 3-year rotation.</td>
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<td>Resolve the publishing issues associated with revised and newly created curriculum materials for secondary agricultural education teachers.</td>
<td>A peer reviewed process is in place now. An “in-process” sheet is updated monthly</td>
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Create and Implement a plan for recruitment of outstanding graduate students for the Department.

Re-emphasize the undergraduate recruitment efforts, including specific strategies to recruit students from under-represented populations.

Initiate specific efforts to articulate and collaborate with the community colleges and other universities in Arizona.

Develop a list of competencies for the Agricultural Technology Management program similar to the one that exists in the Agricultural Education program.

Create a more systematic approach to the outreach efforts, especially as it relates to off-campus courses and workshops, of the department.

Establish a position focused on providing assistance with some outreach efforts, including recruitment of undergraduates and graduates, pursuing internship opportunities, offering major assistance with the annual CDE day, and assisting with supervision of student teachers and new and returning teachers.

Continue the development of courses and support systems for career and technical education teachers in Arizona.

Keep abreast of the technological advances such that students will be afforded access to them as they participate in the programs of the Department.

Improve the infrastructure of the Department to provide a place where people enjoy working and students enjoy studying and learning.

A 300% increase in GTAs occurred last year – 3.91 G.P.A average.

Frank Santiago devotes half his time to recruiting for the Department.

A work in progress. Johnson Bia, President of Pima Community College Downtown Campus, serves on our Department Advisory Committee.

This task has not been accomplished.

Moving many of our offerings to Continuing Education is our first step.

This recommendation evolved into several personnel changes. Mr. Molina coordinates the Undergraduate Agricultural Education Program; Dr. Franklin coordinates the Induction Program; Mr. Santiago recruits and deals with internships; and the entire Department works on Career Development Event with Dr. Knight as chair.

We are moving in that direction with our Continuing Education offerings.

There is no support to do this. Annual requests for funds have been denied.

You’ll have to ask them.

**Follow-up Monitoring and Reporting**

Essentially most of the items identified will become a part of the annual review process with the College of Agriculture and Life Sciences Executive Council. The following are the major items that will provide systematic follow-up and reporting:

- The strategic plan and Departmental Program of Activities (POA) will be developed and used as a guide through the entire process. Within the Departmental POA, a calendar of events will be created. Thus, the document itself will serve as a tool for assessing the progress on the items identified by the review process. [This has happened.]

- In several cases, the actual creation of the product or action will demonstrate the progress towards the accomplishment of the goal. For example, the creation of a Departmental Advisory Council is already underway and once it is organized and convened, it can serve to assist the Department in achieving the goals and activities identified, one of which is the creation of the Council itself. Another example will be the creation of a comprehensive recruitment plan for undergraduate and graduate students. The plan and the processes used to implement it will be a part of the reporting process. [This has occurred.]

- A follow-up process with graduates of the program will be re-instituted and will also provide necessary feedback for the future of the Department. [Dr. Knight accomplishes this task].
C. **Overview of the Program’s Academic Quality**

- Overall quality of this program – As identified by the State Board of Education, the Department is the only unit to receive a five-year teacher education approval rating at the UA.
- Resource criteria (student selectivity or demand, faculty prestige, training, teaching loads; grants and contract; library; equipment; and support staff) – Our nationally recognized faculty are our strength. They teach high teaching loads and most seek extramural funding. The support staff is very committed to ensuring that quality education occurs. However, we operate with old equipment and within a profession that receives less than favorable press, education. Therefore, student supply does not meet the hiring demands. Being ranked last in the nation for teacher salaries doesn’t help the teacher education side of the Department.
- Reputational criteria (national or international ranking, or other judgments of the program’s students, faculty, resources, and productivity) – We had the top masters program in the nation in the last review. Students won 3 out of 4 national competitions (out of 27 universities) last fall. Top Department in the Western AAEE in research awards for the last 3 years. Only Department to conduct national workshops to the 50 top agricultural education teachers in the nation in the past 5 years. Coordinated the first young faculty mentoring seminar.

The University of Arizona, Department of Agricultural Education was the highest ranked non-Ph.D granting department in the United States based on the last Agricultural Education national study. However, that study is outdated and a recent update has not been published yet.

- Outcome criteria (faculty scholarly productivity, awards and honors, research contributions, teaching performance, etc.)
  - (Please see Section D: Faculty)
- In what areas has the program improved or deteriorated
  - The program has improved its number of faculty seeking grants. The program generated the highest number of student credit hours in its history last fall despite 15/17 years of budget cuts.
- Describe new directions in curriculum, resources, etc.
  - We have a joint MS/MBA.
- Identify the top five programs in this field and how does this program compare with others nationally.
  - There isn't anything saying how they compare. Ohio State is supposed to have a study published in the summer.

**Realistic Peer Institutions:**

Purdue University  
University of Idaho  
New Mexico State University  
Pennsylvania State University  
University of Missouri

**Aspirational Peers/Benchmark Programs:**

The Ohio State University  
Texas A&M University  
Iowa State University  
University of Florida  
Oklahoma State University

**NOTE:** Aspirational/Benchmark Peers all offer Ph.D. programs as do several of the Realistic Peers and we do not.
D. Faculty

Faculty’s Overall Strengths and Weaknesses
The Department is positioned well in regards to its personnel including its affiliate, joint, and new faculty. The group is creative, talented, and professional, but most of all passionate for the work they do. It is my hope that they are allowed to flourish in our evolving University environment. Our strength is our weakness. This paradox is illustrated best by this example: The faculty is extremely passionate about teaching and being student-centered, yet, even though we are at an “all time high” in student credit hour generation, our operating budget will be reduced again.

Awards, Honors, and Achievements

Jack Elliot, Professor and Head
A banner research year consisted of Dr. Elliot sweeping all 3 Western Region Agricultural Education Research Awards, winning the Outstanding Research Paper/Presentation at the National Agricultural Education Research Conference, gaining approval for the first Multistate Research Project (W-1006), and concluding his tenure as Association for Career and Technical Education Research President. In addition, he chairs the National CTE Research Task Force and is facilitating a new national research agenda. Dr Elliot continued to teach the writing emphasis communications courses that serve the College. He was honored as the Outstanding Post-Secondary Educator by the Arizona Agriculture Teachers Association. He received a Certificate for Career and Technical Education Professional Development given by the Arizona Department of Education, a Certificate of Participation in the AZ Tech Prep Seminar given by the East Valley Tech Prep Consortium, a Certificate for Professional Development given by ACOVA and ACTEaz, and a Certificate of Attendance at the ACOVA Fall Retreat given in cooperation with the Institute for Future Work Force Development. In addition, Dr. Elliot received the 30 Minute Award given by the Arizona Agriculture Teachers Association.

James Knight, Professor
Dr. Knight maintained his appointment as Faculty Associate with the Office of Academic Programs and hosted the National Agriculture Ambassador Conference. He was honored in 2006 with the CALS’s Outstanding Faculty Teaching Award. Dr. Knight, along with a graduate student, received the Outstanding Research Paper/Presentation given by the American Association of Agricultural Educators (AAAE). He has made numerous state, regional, national, and international presentations related to teaching and learning. He won the Arizona ACTE (The Association for Career and Technical Education) Outstanding Educator (Post-Secondary) Award and the USDA Excellence in Teaching Award.

Glen Miller, Professor
Dr. Miller’s courses are among the most highly rated by students and they continue to be completely full. In 2005, Dr. Miller received the 30 Minute Award given by the Arizona Agriculture Teachers Association. He was instrumental in obtaining a $150,000.00 Massey Ferguson Tractor for educational purposes for our agricultural mechanics program.

Billye Foster, Associate Professor
Dr. Foster won the University of Arizona Foundation 2008 Leicester and Sherrill Creative Teaching Award. She also received the Outstanding Career and Technical Educator (Post Secondary) by the Arizona Association for Career and Technical Education. Along with several graduate students, she received First Place in the Innovative Poster category at the Western Region Agricultural Education Research Meeting. She was selected and completed the HERS Bryn Mawr Summer Institute for Women in Higher Education Administration. The Summer Institute is sponsored jointly by Bryn Mawr College and HERS (Higher Education Resource Services). The 70 selected participants were from 38 states, Guam, and South Africa. Participants in the program gained knowledge, skills, and perspectives for leading in the challenging environment of higher education today.
Ed Franklin, Assistant Professor
Dr. Franklin, along with Dr. Elliot and a graduate student, won the Outstanding Research Paper/Presentation at the Western Region Agricultural Education Research Conference. Dr Franklin converted the CDE scoring process to a more economical and efficient model. He was selected to participate in the inaugural Young Faculty in Agricultural Education Professional Development 10-month program, OMEGA.

William Hanekamp, Senior Lecturer
Mr. Hanekamp continued to lead the work in presenting a Tier 2 course, AGTM-380, Global Agriculture and International Relations. He continues the leadership for the development of AGTM-213, Agriculture and Food Marketing. Both courses are in high demand and fill quickly each semester.

Quintin Molina, Lecturer
Along with several graduate students as well as Drs. Foster and Elliot, Mr. Molina received First Place in the Innovative Poster category at the Western Region Agricultural Education Research Meeting. He was selected to participate in the inaugural Young Faculty in Agricultural Education Professional Development 10-month program, OMEGA. In addition, he was invited to present at the conference on his work in incorporating technology in his classroom. Mr. Molina won the Research Poster Award for the Western Region AAAE and the AATA (Arizona Agricultural Teachers Association) Award for Post Secondary Educator.

Kerry Schwartz, Associate Specialist
Ms. Schwartz has been a wonderful addition to the Department. Her work with Arizona Project WET is recognized in Arizona and the country as first-rate and important educational programs. She was recognized by Project WET International with its Three-Year Service on the Regional Council Award. Ms. Schwartz was awarded $176,240.00 for the first year of a five-year grant to deliver water education services to the City of Phoenix water service area. Ms Schwartz raised $72,000.00 for Arizona Water Festivals held in 2006. A Prescott Integrated Water Education Program was initiated with a $13,147.00 grant.

National Champions, 2007
27 universities competed in four national collegiate competitions in Indianapolis, Indiana in October, 2007. Members of the Department’s student organization group, Jacobs Cline, won three of the four contests at the ATA (Alpha Tau Alpha) National Conclave: Program of Excellence in Fellowship Category and Overall Contest, Parliamentary Procedure, and Debate.

Nature and Breadth of Faculty Research and Other Scholarly Contributions:

Dr. Jack Elliot, Professor and Head
Research:
• Agricultural Business & Management - Agriscience Curriculum Update Project
• 2005/2007 Professional Development in CTE
• High Stakes Testing: 6-year follow-up
• MOA Universities of Namibia and Arizona for 2005-2010
• High School Agriscience Program Assessment, Articulation
• Pima County Farm Bureau
• Rural Arizona Value-Added Hybrid Educational Delivery Process
• Western Region Experiment Station Research Activity on Agricultural Literacy - W-1006
• Montana Tribal College Retention Transitioning to Excellence in Agricultural & Natural Resources Baccalaureate Education
• Teachers Turn the Key

Department of Agricultural Education, University of Arizona
Peer Reviewed Publications from Research: (See vita for complete citations)
- Agricultural Perceptions of the Participants of the Arizona Summer Agricultural Institute
- Teaching Through Case Studies: The Discipline Derby
- Interactive Agricultural Experiences of 4th Grade Students in The Arid Southwest: A Pilot Examination of the Impact of Hands-on Learning Experiences.
- Running the "No Child Left Behind" Gauntlet: Impacts of the 2002 No Child Left Behind Act on Career and Technical Education
- Agricultural Perceptions of the Participants of the Arizona Summer Agricultural Institute

Creative and Scholarly Works:
- Communicating in Agriculture and the Life Sciences
- Arizona Agriscience Program Review Guide
- Everything You Ever Wanted to Know About Teaching
- Conceptual Frameworks
- Presented "Integrating a National Leadership Initiative with Career Cluster Knowledge and Skills (Agriculture, Food and Natural Resources)
- Joint Technical Education District Models
- Presented “AIMS, Student Performance, Teaching and Learning Styles, A Study”
- Process of Developing Assessments
- Dippers, Bashers, and Jumpers
- CTE as a premier educational delivery system
- ACTER Presidential Address
- LifeKnowledge - Arizona
- Presented "Teaching Backwards: A Route to More Effective Assessment”
- Everything You Ever Wanted to Know About Teaching
- Improving Teaching Through the Use of Rubrics.
- Poster: The Ag Perceptions of Participants of the Summer Agricultural Institute

Intramural Service:
- Program Evaluation Research and Support Working Group
- College of Agriculture and Life Sciences Curriculum Committee
- Research Project Review Committee
- University: Undergraduate Council
- Coordinator for the University of Arizona/University of Namibia MOA
- Arizona Council of Occupational/Vocational Administrators
- State FFA Career Development Field Day Committee
- Quality Guidance Council
- CALS Awards Committee
- Arizona Project WET Advisory Council
- Reviewer: Agricultural Experiment Station project
- FFA Career Development Event, Agricultural Issues
- 2006 Homecoming Event
- State Board of Education Career & Technical Education Advisory Committee
- Reviewer, Promotion and Tenure to Associate Rank for Monica Pastor, Cooperative Extension
- CALS Faculty Conference Planning Meeting
- FFA State Leadership Conference Agricultural Communications, Newsletter and Internet CDEs
- Faculty Membership in Arid Lands Resource Sciences Graduate Interdisciplinary Programs (GIDP)
- Serve as the Department's computer room supervisor and distance education coordinator
- Advisor for Agricultural Communicators of Tomorrow (ACT)
**Dr. Glen Miller, Professor**

**Research:**
- Long Term Hearing Loss Among Secondary School Teachers of Agricultural Education (100%)
  2004 $10,324.00 ($30,972.00 Total)
- Donation of machinery for instruction in Agricultural Mechanics

**Peer Reviewed Publications from Research:** (See vita for complete citations)
- Hearing Acuity Changes Among First Year Teachers of Agricultural Education from 1988 - 2002

**Creative and Scholarly Works:**
- Introduction to Agricultural Mechanics

**Intramural Service:**
- Peer Review Committee
- Graduate Committee Chair, Agricultural Education
- Institutional Review Committee and Conflict of Interest Committee – Office of the Vice President for Research and Graduate Studies
- Promotion and Tenure Committee, Ag. Ed. Dept.
- College – State FFA Agricultural Mechanics Career Development Event

**Dr. James Knight, Professor**

**Research:**
- Follow-Up Study of CALS Graduates for 2005
- GK-12 Graduate Teaching Fellows: Collaboration for the Advancement of Teaching Technology and Science in Schools

**Peer Reviewed Publications from Research:** (See vita for complete citations)
- Interactive Agricultural Experiences of 4th Grade Students in the Arid Southwest: A Pilot Examina
- Water in Tanzania: A Role for Extension

**Creative and Scholarly Works:**
- Arizona School Counselors' Academy
- Kansas Association for Career and Technical Education Annual Conference
- Project CENTRL Seminar
- Florida Association for Equal Opportunity Programs Personnel Conference
- Missouri State University Faculty Inservice Meeting

**Intramural Service:**
- 2007 FFA Career Development Events for CALS
- National Faculty Center Advisory Committee
- Undergraduate Recruitment Coordinating Group
- University Department Teaching Award Committee
- Project WET Advisory Committee
- CALS P&T Committee
- Faculty Advisory Board for the Learning Technologies Center
- Science and Math Education Center Advisory Committee (SAMEC)
- Student Scholarship & Awards Committee for CALS
- CALS Program Improvement Committee
**Dr. Billye Foster, Associate Professor:** Dr. Foster’s research centers around women and minorities in academic agriculture. Although her time for intense research on these areas is limited based on other departmental and college responsibilities, she still works toward gathering pertinent information for use in class and to expand this information base for others.

Currently she is involved in the following research projects (in process):

- Issues effecting students’ (minority and non-minority) decision to enroll in an introductory agriscience course in Arizona, (F. Santiago)
- Teachers in agricultural education—gender profiles, NAAE regions 3 & 4 (J. Kaltenbach and E. Franklin)
- Women and men in academic agriculture—what does the future hold. (B. Seegers and L. Moore)
- Agricultural and extension education—academic professionals’ experience (B. Seegers)

**Other Research:**

- CALS Climate Study
- Teachers Turn the Key--Pirates on the Educational Ocean

**Peer Reviewed Publications from Research:** (See vita for complete citations)

- CALS Climate Study--Maintaining Perspective
- Same or Different? The faculty experience in Agricultural and Extension Education for Men and Women

**Creative and Scholarly Works:**

- How do we teach the future?
- How do you define diversity?
- Teaching Through Case Studies--The Discipline Derby
- Desert Roses website
- CALS Women web site
- Coordinator of Teachers Turn the Key--Pirates on the Educational Ocean

**Intramural Service:**

- Diversity Coalition
- Millennium Oversight Committee (MROC)
- Session moderator--CALS Faculty Conference
- Faculty Teaching Award Selection Committee
- University of Arizona Foundation Leicester & Kathryn Sherrill Creative Teaching Award Selection Committee
- Co-Chair CALS Diversity Committee
- CALS Millennium Oversight Committee
- Presentation for UA Ombuds
- CALS Faculty Conference--Session Moderator
- CALS Faculty Conference--Presenter
- Dean's Advisory Committee
- Academic Probation and Disqualification
- State FFA Career Development Field Day
- Association for Women Faculty
**Dr. Ed Franklin, Assistant Professor**

**Research:**
- New Teacher Professional Induction Experiences as Reported by NAAE
- Description of AAAE Teacher Education Preparation Institution Participation in Teacher Induction Programs
- Description of State-Level Teacher Induction Programs as Reported by NASAE Members
- Teacher induction programs in agricultural education: Description of the role of AAAE higher education teacher preparation programs in the western U.S.
- Status of Greenhouse Laboratory Facility Use by Secondary Agricultural Educators in Arizona
- Ability to Identify Student Distress While Wearing Hearing Protection Devices
- Undergraduate Education As Preparation for Employment: A Survey of 2004 Graduates

**Peer Reviewed Publications from Research:** (See vita for complete citations)
- Teacher Induction Programs in Agricultural Education: Description of the Role of AAAE Higher Education Teacher Preparation Programs

**Creative and Scholarly Works:**
- Arabian Horse Evaluation Teacher Reference Unit
- Running the No Child Left Behind gauntlet: Impacts of the 2002 No Child Left Behind Act on career and technical education.
- Understanding the role of traditional ecological knowledge in agricultural and environmental education: Exuma Bahamas
- Is the Doctor Really In? Examining the Ailments of Mentoring Relationships for New CTE Teachers
- Introduction to GPS - Jan 2007
- Western Region American Association of Agricultural Education Research Conference
- Society for Applied Anthropology Annual Meeting
- National Agricultural Mechanics Professional Development Blue Ribbon Presentation
- Western Region American Association of Agricultural Educators - Poster
- Teachers Turn the Key - Finding Our National Treasure

**Intramural Service:**
- CALS Arizona State FFA Career Development Event Superintendent
- CALS Spring FFA Field Day Student Committee
- CALS Arizona State FFA Career Development Event Tabulations Chair
- Arizona FFA State Leadership Conference - Parliamentary Procedure Tabulations
- Arizona State FFA Leadership Conference - Agriscience Fair
- University of Arizona Student Career Development Event Field Day Committee, Faculty Advisor
- New Teacher Induction Program
- Arizona State FFA Career Development Event Committee, Member, Agriscience Fair
- CALS Undergraduate Assessment Committee
- Human Subjects Protection Program Department Committee
- Western Region Agricultural Education Conference (April 20-23, 2006)

**Details:**
- In 2005, initiated a research program with a focus on teacher induction.
- In 2006, a study of the use of greenhouse facility use by secondary agricultural education programs in Arizona was conducted. A paper was submitted to the 2008 Western Region AAAE Research Conference and is awaiting peer-review. In fall 2007, a manuscript was prepared and submitted to the Journal of Agricultural Education. The paper has been accepted for publication.
- In fall 2007, a study to examine retention issues of secondary agricultural education teachers in Arizona was initiated.
- In the area of agricultural mechanics, has received data consisting of contestant scores’ from the National FFA Agricultural Mechanics Career Development Event (CDE) from 1996 to 2006. The
purpose of the research is to analyze the data and compare scores by national FFA region to determine if a significant difference exists by contestant scores among regions, and to determine if contestant performance on any one portion of the activity is a predictor of contestant success in the entire event. The findings will be shared with the National FFA Organization staff, and the members of the National FFA Agricultural Mechanics CDE Committee.

- A proposed study, currently under review with university human subject’s protection program, is a national Delphi study of FFA teachers who have coached gold-medal agriculture mechanics Career Development Event teams for national competition in the past five years to identify student selection, recruitment, and training methods.

Mr. Quint Molina, Senior Lecturer
Research:
- Update and Validation of the Professional Education Competencies in Agricultural Education at The University of Arizona
- Cienega High School Agriscience Program Review
- Chino Valley High School Agriscience Program Assesment
- Peoria High School Agriscience Program Review
- Mingus Union High School Agriscience Program Review
- Camp Verde High School Agriscience Program Review
- Teachers Turn The Key
- Utilizing the New Professionals Kit Presentation
- Teaching Through Case Studies Presentation
- Teaching Through Case Studies - Regional Presentation
- Using Career Clusters to Facilitate Curriculum Alignment

Creative and Scholarly Works: (See vita for complete citations)
- The Agricultural Education Magazine - Journal Article

Service:
- Arizona Agricultural Teacher Association - Officer
- Arizona Team AGED
- Arizona FFA State Leadership Conference
- Arizona FFA State Career Development Event Day

Ms. Kerry Schwartz, Associate Specialist
Research:
- 2007-08, Arizona Project WET Evaluation: Examining Impact and Developing a Computer-based Tutorial and Assessment System – Follow-up Study
- 2006-07, Using Survey Instruments to Design More Effective Workshops,”

Peer Reviewed Publications from Research: (See vita for complete citations)
- Steering Committee Member & Contributing Author of “Waters of Arizona” a Kids in Discovery Series 16-page booklet, The Watercourse, August 2005.
- Steering Committee Member & Content Reviewer of “Drought” a Kids in Discovery Series 16-page booklet, The Watercourse, March 2005.
New Format Publications

- Exhibit; Arizona Project WET Tabletop Display with two banners, with SRP graphic designers, September 2006.
- DVD; Arizona Project WET Program 8 minute promotion, with Tucson Water subcontractor Kaneen Publishing and Firhouse Productions, August 2006.

Work in progress


Creative and Scholarly Works: (See vita for complete citations)

- Speaker, “Using Survey Instruments to Design More Effective Workshops,” NAAEE Research Symposium - Celebrating the diversity of our research methodologies: finding common ground, Virginia Beach, Convention Center, Virginia, November 14, 2007.

Intramural

- Teacher Training Working Group, Co-Chair (6 days). This Group is focused on effective teacher professional development programs that meet the State's education requirements and deliver content that is a priority for Extension programs. The education product will facilitate the transfer of relevant knowledge to Arizona students while helping them to succeed in standards based testing and graduation requirements.
- Water Sustainability Program Education and Outreach Committee, Member (12 days). Committee makes funding recommendations to the Water Sustainability Program Directors.
- Extension Natural Resources Education Working Group, Member (4 days). The working group is in a period of reorganization. Members have all submitted program overviews and consideration is being given to splitting in to smaller working groups. The Translational Science UA Town Hall is still a possibility.
- Arizona Water Map Development Committee, Advisor (8 days). Committee is revising Arizona Water Map for publication through WRRC in 2008.
Affiliate Faculty

Barbara Hutchinson, Professor  

Assistant to Director, Ag. Experiment Station  
Research Scientist, Arid Lands. As assistant to the  
director, she provides grants support to CALS faculty and  
develops international extramural programs. Areas of  
research interest include the electronic dissemination of  
information and educational resources, technologies for  
facilitating life-long learning and decision-making, and  
digital repositories. These interests have been most fully  
realized in her involvement in the Agriculture Network  
Information Center (AgNIC) and the development of the  
Rangelands West initiative that involves 19 land-grant  
universities in a model collaboration of librarians and  
rangeland scientists.

Paul Kohn, Associate Professor  

Vice President, U of A Enrollment Management

Lisa Lauxman, Acting Assistant Director, 4H;  
Associate Specialist; Associate Agent  

Coordinates and collaborate curriculum and programming  
efforts as well as provides contact and support for county  
faculty and staff in the program and content areas related  
to: adult and youth leadership, citizenship, international  
programming, group programming, and individual/family  
consumer sciences. Conducts applied research and  
evaluation in leadership, citizenship and individual and  
family and consumer sciences.

Patty Merk, Associate Regional Specialist  

Provides support for quality child care through training in  
the areas of health, safety, nutrition, hearing screening and  
special needs. Promote positive family development  
through parent education and support groups for  
grandparents raising grandchildren.

Steve Poe, Professor  

Coordinator - Yuma Academic Program  
Professor - Agricultural and Biosystems Engineering

Sabrina Tuttle, Assistant Professor, Assistant  
Agent  

Conducts applied research and provides information to the  
farmers and inhabitants of the San Carlos Apache Indian  
Tribe Reservation in the areas of agricultural production,  
integrated pest management, 4-H/youth development,  
marketing and natural resource management. This will be  
achieved through direct contact with individuals, field  
days, commodities and club meetings, classroom  
presentations, and the use of local media outlets.

Distribution of Full-Time and Part-Time Faculty Including TAs and GTAs

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William Hanekamp, Ph.D.  

.50 Part-Time  
Lecturer

Heather Jepsen  

.25 Part-Time  
Lecturer

Department of Agricultural Education, University of Arizona
### Professional Participation

<table>
<thead>
<tr>
<th>Organization</th>
<th>Jack Elliot</th>
<th>Billye Foster</th>
<th>Ed Franklin</th>
<th>Jim Knight</th>
<th>Glen Miller</th>
<th>Quint Molina</th>
<th>Kerry Schwartz</th>
<th>Barbara Hutchinson</th>
<th>Lisa Lauxman</th>
<th>Sabrina Tuttle</th>
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</table>
NAME: JACK ELLIOT
RANK: Professor and Department Head
DATE OF APPOINTMENT: August 3, 1992

EDUCATION:
Ph.D in Agricultural Education: The Ohio State University, 1988
Master in Agricultural Economics: Washington State University, 1978
B.S. in Agricultural Education: Washington State University, 1975

Strategic Plan Program Areas:
Environment and Natural Resources: 50%
Family, Youth, and Community: 50%
Human Nutrition, Food Safety, and Health: 0%
Marketing, Trade, and Economics: 0%
Animal Systems: 0%
Plant Systems: 0%
Activity Distribution:
Instruction: 65% Research 25% Extension 10% Administrative 0%

AWARDS AND HONORS:
- Second Place, Poster called "Arizona's Challenge: A Process worth Duplicating" (Concept/Innovation). Given by Western Region American Association for Agricultural Education, 4/26/2007. (25%). With Student, Ed Franklin, and Billye Foster.
- Concept/Innovation/Third Place for poster "The Development of Communication Strategies Through Partnerships Between Community Groups and the Department of Agricultural Education. Given by Western Region American Association for Agricultural Education, 4/18/2007. (30%). With Student and Billye Foster.
- 30 Minute Award. Given by Arizona Agriculture Teachers Association, 7/18/2007. (100%).

RESEARCH PROGRAM
Agricultural Literacy. With Monica Pastor (50%). 2005 $50,000.00 ($150,000.00 Total) (USDA).
Employees: 1, Student.
- 2006/2007 Professional Development in CTE. (100%). 1997 $82,620.00 ($956,117.18 Total) (Arizona Department of Education). Employees: 1, Student.
- Agricultural Business & Management - Agriscience Curriculum Update Project. (100%). 2004 $21,000.00 ($76,000.00 Total) (AATA). Employees: 1, Student.
Impact: High School Agriscience Curriculums have up-to-date, high science content instructional documents that improve student academic achievement.

Department of Agricultural Education, University of Arizona
• 2007/2008 Professional Development in CTE. (100%). 1997 $57,000.00 ($1,113,117.18 Total) (Arizona Department of Education). Employees: 1, Student.
  Impact: Teacher improvement activities has led to higher student academic achievement.
• 2007/2008 Improving Health Occupations. (100%). 2007 $137,000.00 ($137,000.00 Total) (Arizona Department of Education). Employees: 1, Staff.
• High Stakes Testing: 6 year followup. (100%). 2004 $31,151.00 ($179,000.00 Total) (NAVIT). Employees: 2, Student.
• High Stakes Testing. (100%). 2002 $3,200.00 ($12,800.00 Total) (Arizona Agricultural Experiment Station).
• MOA Universities of Namibia and Arizona for 2005-2010. (100%). 2001 ($146,000.00 Total) (United States Department of Agriculture).
• High School Agriscience Program Reviews. With Quint Molina (50%). 2005 $30,000.00 ($75,000.00 Total) (High School Districts within the State of Arizona).
  Impact: Overall, academic achievement improves in schools where Program Reviews occur.
• Articulation. (100%). 2006 $20,000.00 ($60,000.00 Total) (Tech Prep). Employees: 1, Student/Staff.
• Rural Arizona Value-Added Hybrid Educational Delivery Process. With Billye Foster (50%). 2008 $99,000.00 ($198,000.00 Total) (ABOR).
• Western Region Experiment Station Research Activity on Agricultural Literacy - W-1006. (50%). Co-Chair
  Impact: Interactive education, as promoted in Agriculture in the Classroom, leads to improved academic achievement
• CTE Research Agenda. (100%). Chair the national ACTE research committee which is developing a National Research Agenda through a 3-step Delphi process and a 2-step Logic Model process.
  Impact: The CTE Research Agenda will provide guidance to CTE researchers at all levels.
• co-chair 2011 AIAEE annual conference. (50%). Planning the 2011 AIAEE annual conference in Namibia
• Teachers Turn the Key. (15%). For the fifth year, the National Association for Agricultural Educators requested that Dr. Billye Foster coordinate a team of educators (Dr. Jack Elliot, Dr. Jim Knight and Mr. Quint Molina) to develop a programmatic professional development program for early entry agricultural education teachers from each of the 50 states. The project, sponsored by Dodge, provided funding for presenter travel, ongoing research and background work for the development of the curriculum and individual support for the presenters. In addition, support for three graduate students to make the trip was included. Financial support for the department equaled $12,750. 
NAME: JAMES KNIGHT  
RANK: Professor and Faculty Associate  
DATE OF APPOINTMENT: July 1, 1997  
EDUCATION:  
Post Doctoral Study: The University of Minnesota, 1984  
Doctor of Philosophy: The Ohio State University, 1977  
Master of Education: Colorado State University, 1975  
Bachelor of Science: Colorado State University, 1969  

POSITION DESCRIPTION  
Strategic Plan Program Areas:  
Environment and Natural Resources: 5 %  
Family, Youth, and Community: 70 %  
Human Nutrition, Food Safety, and Health: 5 %  
Marketing, Trade, and Economics: 5 %  
Animal Systems: 5 %  
Plant Systems: 10 %  

Activity Distribution:  
Instruction: 70% Research 20% Extension 0% Administrative 10%  

AWARDS AND HONORS:  
• USDA Food and Agriculture Sciences Excellence in Teaching Award November 2007  
• Outstanding Educator of the Year 2007-Post Secondary, Arizona ACTE, July 2007  
• Outstanding Faculty Teaching Award, College of Agriculture and Life Sciences, University of Arizona, October 2006  
• Distinguished Teaching Award, Western Region AAAE, April 2005  
• Outstanding Faculty Member Award, Bobcats Senior Honorary, University of Arizona, April 2005  
• A+ Advisor Award (Outstanding Student Advisor), University of Arizona College of Agriculture and Life Sciences, October 2004  
• Outstanding Faculty Member for University of Arizona, Gamma Sigma Alpha, May 2003  
• Outstanding International Agricultural Education Award, Western Region AAAE, May 2003  
• Honorary State FFA Degree, Arizona FFA Association, June 2001  
• Myra P. Sadker Award, National Vocational Education Equity Council, December 2000  
• Distinguished Service Award, National FFA Alumni Organization, October 2000  
• A+ Advisor Award (Outstanding Student Advisor), University of Arizona College of Agriculture, October 2000  
• Outstanding Faculty Member Award, Jacobs-Cline Society, University of Arizona, May 2000  
• Millennium Edition of International Who’s Who of Professional Educators, December 1999  
• A+ Advisor Award (Outstanding Student Advisor), University of Arizona College of Agriculture, November 1999  
• H. O. Sargent Award, National FFA Organization, October 1999  
• Post Secondary Ag Educator of the Year, Arizona Agriculture Teachers Association, July 1999  
• International Who’s Who of Professional Educators, 1999-2000  
• Omicron Delta Kappa National Leadership Honorary, University of Arizona, May 1999  
• Honorary Member of Golden Key National Honor Society, October 1998
• Wakonse Fellowship for Teaching; Arizona Universities, April 1997
• E. B. Knight Award for the Outstanding NACTA Journal Article for 1988
• Rodney Plimpton Award for Outstanding Teaching, College of Agriculture, The Ohio State University, May 1988
• Honorary Member of Sphinx (Senior Honorary at The Ohio State University), May 1988
• Honorary American FFA Degree, National FFA Organization, November 1988

RESEARCH PROGRAM
• PUBLICATIONS, PAPERS, AND OTHER SCHOLARLY ACTIVITIES
  Published and or presented more that 50 articles, papers and monographs on various topics related to education such as School Climate, Educational Excellence, Equity, and Teaching effectiveness.
• RESEARCH AND FUNDED PROJECTS
  Directed or co-directed 24 research/development projects. Generated more than $3,500,000 for supported projects.
• PROFESSIONAL SERVICE
  Member of 15 professional and honorary organizations. Traveled to all 50 states, Trinidad-Tabago, Canada, Guam and Africa, and made over 2,500 presentations on the published topics.
NAME: BILLYE FOSTER  
RANK: Associate Professor  
DATE OF APPOINTMENT: July 1, 1995  
EDUCATION:  
Ed.d.: Agricultural Education, Oklahoma State University, 1994  
M.S.: Agricultural Production, East Texas State University, 1987  
B.S.: Animal Production, Texas Tech University, 1974

Additional Certification:  
- Summer Institute of Leadership Development for Women in Higher Education Administration 2007  
  Higher Education Resource Services (HERS)  
- Intercultural Communications (Foundation Level Certificate) 2007  
  Institute for Intercultural Communications  
- Cooperative Education (Vo-Ag) 1981  
  Texas Board of Education  
- Meat Science (Vo-Ag) 1981  
  Texas Board of Education  
- Vocational Agriculture (Texas-Life) 1977  
  Texas Board of Education

POSITION DESCRIPTION  
Environment and Natural Resources: 10%  
Family, Youth, and Community: 80%  
Human Nutrition, Food Safety, and Health: 0%  
Marketing, Trade, and Economics: 0%  
Animal Systems: 10%  
Plant Systems: 0%  

Activity Distribution:  
Instruction: 75% Research 20% Extension 0% Administrative 5%

AWARDS AND HONORS:  
- The University of Arizona Foundation 2008 Leicester and Kathryn Sherrill Creative Teaching Award  
- 2006 Outstanding Career and Technical Educator (Post Secondary), Arizona Career and Technical Education Association  
- 2005 College of Agriculture and Life Sciences Faculty Teaching Award  
- 2004-05 Mortar Board Citation  
- Western Region American Association for Agricultural Education Distinguished Teaching Award, 2004  
- WAKONSE Teaching Fellow, 1998, 2000

Department of Agricultural Education, University of Arizona
• StudyWeb Academic Excellence Award for Desert Roses website, 1999
• NACTA/CALS Teaching Award of Merit, 1998
• Higher Education Resource Services (HERS) Summer Institute of Leadership Development for Women in Higher Education Administration at Bryn Mawr University, Bryn Mawr, Pennsylvania, 2007
• Western Region Research Meeting Refereed Research Poster Session, Outstanding Poster, 2007
• Outstanding Young Member, Western Region AAEA Conference, Carmel California, 2001
• National Agricultural Education Research Conference (NAERC) Outstanding Poster, Orlando, Florida, 1999
• Western Region Research Meeting Refereed Poster Session, Outstanding Poster, 1999
• National Agricultural Education Research Meeting Refereed Poster Session, Runner-up Outstanding Poster, 1998
• Western Region Research Meeting Refereed Poster Session, Outstanding Poster, 1998

RESEARCH PROGRAM:
Women & Minorities in Academic Agriculture, Agricultural & Extension Education
13 refereed publications

<table>
<thead>
<tr>
<th>Presentations: local, national, international</th>
<th>2001-2006</th>
<th>CAREER TOTAL</th>
</tr>
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<tbody>
<tr>
<td>Books:</td>
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<td>1</td>
</tr>
<tr>
<td>Refereed journal articles:</td>
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<td>30</td>
</tr>
<tr>
<td>Professional &amp; electronic publications:</td>
<td>53</td>
<td>65</td>
</tr>
</tbody>
</table>
NAME: GLEN MILLER
RANK: Professor
DATE OF APPOINTMENT: January 1, 1986
EDUCATION:
Ed.D: Agricultural and Extension Education, Mississippi State, 1986
M. AG. ED.: Agricultural Education, University of Arizona, 1977
B.S.: Agricultural Education, University of Arizona, 1969
Major Fields: Agricultural and Extension Education, Agricultural Mechanization

POSITION DESCRIPTION

Strategic Plan Program Areas:
Environment and Natural Resources: 0 %
Family, Youth, and Community: 80 %
Human Nutrition, Food Safety, and Health: 0 %
Marketing, Trade, and Economics: 20 %
Animal Systems: 0 %
Plant Systems: 0 %

Activity Distribution:
Instruction: 60% Research 40% Extension 0% Administrative 0%

AWARDS AND HONORS:
- Alpha Gamma Rho Fraternity Outstanding Faculty Member Award.
- National Vocational Agricultural Association (NVATA) Honorary Life Award, Region 1.
- National FFA Organization - Honorary American FFA Degree.
- Distinguished Teaching Award, Western Region, American Association for Agricultural Education.
- Faculty Teaching Enhancement Award, College of Agriculture.
- Nominee for National Teacher of the Year - National Association of State universities and Land-Grant Colleges.
- Appreciation Award, Alpha Tau Alpha.
- Junior Faculty Award, Gamma Sigma Delta, University of Arizona.
- Teacher of Teacher Award, National Vocational Agricultural Teachers Association.
- Outstanding Young Member Award, American Association of Teacher Educators in Agricultural, Western Region.
- Outstanding Dissertation Award, The Association for Supervision and Curriculum Development.
- Honorary State FFA Member, Mississippi.
- District Vocational Agricultural Teacher of the Year, Black Canyon District.
- Featured in the Sperry-New Holland film *Your Land - Your Future*, promoting Vocational Agriculture teaching as a profession.
- Featured in the FFA Building Our American Communities film, *Hometown America*.
- Honorary State FFA Member, Arizona.
- Regional Winner, NVATA Ideas Unlimited Contest.
- District Vocational Agriculture Teacher of the Year, Black Canyon District.
RESEARCH PROGRAM:

• *Long Term Hearing Loss Among Secondary School Teachers of Agricultural Education (100%) 2004 $10,324.00 ($30,972.00 Total) (100%). 2004 $10,324.00 ($30,972.00 Total) (CSREES ARZT).

Description:

Objective: To determine the hearing sensitivity of seniors graduating from the agricultural education program at the University of Arizona and re-test annually during their career as a part of a long term hearing loss study while serving as agricultural education teachers in secondary schools in Arizona.

Impact: This research will improve teacher and student safety and reduce long term hearing loss among teachers of Agricultural Education at the secondary school level.

Long term hearing loss among secondary school teachers of agricultural education (100%) 2004 $10,324.00 ($30972.00 Total) . (100%). Principal Investigator

Impact: Working with the Speech and Hearing Clinic at the University of Arizona, this project is protecting the hearing of teachers of agricultural education in Arizona

• *Hearing Acuity Changes Among First Year Teachers of Agricultural Education from 1988 - 2002 Proceedings of the 23rd Annual Western Region Agricultural Education Research Conference Volume 23 10 pages. Honolulu, Hawaii, April 21-24 2004 Presented. (100%).

• *Donation of machinery for instruction in Agricultural Mechanics. (50%). Facilitated donation of Massey Ferguson Tractor model 8280 to the University of Arizona Departments of Agricultural and Biosystems Engineering and Agricultural Education from AGCO Engineering group. Litchfield Park, AZ by providing course syllabi for AGTM 351, 350, 330, and in service teacher activities thus providing evidence that the tractor be used for instruction only. Estimated value: $75,000.

Impact: This donation provides a state of the art tractor for instructional use. The most modern tractor directly available for class use previously was a 1965 International.

• *Donation of materials for 2007 Agricultural Mechanics CDE. (100%). Facilitated the donation of approximately $3000 of consumable pipe fittings for the agricultural mechanics contest.

• *Surplus/transfered equipment. (100%). Sought and received production surplus production agriculture equipment for use in AGTM 351

Impact: Provides hands on experiences for students


NAME: EDWARD FRANKLIN
RANK: Assistant Professor
DATE OF APPOINTMENT: July 1, 2000

EDUCATION:
Ph.D.: Agricultural Education, Oklahoma State University, 2000
M. S.: Agricultural Education, California Polytechnic State University, 1998
B.S.: Agriculture, California State University, 1984

POSITION DESCRIPTION

Strategic Plan Program Areas:
Environment and Natural Resources: 0 %
Family, Youth, and Community: 100 %
Human Nutrition, Food Safety, and Health: 0 %
Marketing, Trade, and Economics: 0 %
Animal Systems: 0 %
Plant Systems: 0 %

Activity Distribution:
Instruction: 100% Research 0% Extension 0% Administrative 0%

AWARDS AND HONORS:
American Association of Agricultural Educators (AAAE)
- Western Region Outstanding Refereed Research Paper Award, 2006
- Western Region Outstanding Young Member Award, 2005
- Western Region First Runner-Up Refereed Research Paper, 2005
- Western Region Second Runner-Up Refereed Research Poster, 2004
- Western Region Second Runner-Up Refereed Research Poster, 2003
- Western Region Outstanding Refereed Research Poster, 2001
- Western Region Second Runner-Up Refereed Research Poster, 2000

Association for International of Agricultural and Extension Education
- 3rd Place Research Paper Award, Summer 2004

National Association of Agricultural Educators

Department of Agricultural Education
- Jacob’s Cline Society Core Value’s Award, 2004
- Jacob’s Cline Society Outstanding Faculty Member Award, 2002

Arizona State FFA Association
- Honorary State FFA Degree, 2002

Flowing Wells High School Agricultural Education Department
- Honorary Chapter FFA Degree, 2002

The University of Arizona
- Meritorious Departmental Achievement in Instruction Award, 2001

Oklahoma State University
- Ag Ed Graduate Student Association Award, 2000

National FFA Organization
- Honorary American FFA Degree, 1998

Department of Agricultural Education, University of Arizona
Gamma Sigma Delta, International Honor Society for Agriculture
  • Certificate of Membership, 1999
California Agricultural Teachers Association (CATA)
  • Teacher of Excellence Award, 1995

RESEARCH PROGRAM:
• Teacher induction programs in agricultural education: Description of the role of AAAE higher education teacher preparation programs in the western. (100%). (AZRT-136845-H-08-115 Experiment Station Project). Employees: 1, None.
• Description of State-Level Teacher Induction Programs as Reported by NASAE Members. (100%). (Experiment Station).
  Description: Related to the Hatch Act Experiment Station Project #AZ
• Description of AAAE Teacher Education Preparation Institution Participation in Teacher Induction Programs. (100%). (Experiment Station).
  Description: A research project that originated from the Experiment Station Project # AZRT-136845-H-08-115
Teacher induction programs in agricultural education: Description of the role of AAAE higher education teacher preparation programs in the western region.
• New Teacher Professional Induction Experiences as Reported by NAEE. (100%). (Experiment Station ).
  Employees: 1, None.
  Description: Data has been gathered from 71 participants from three workshop groups: 2003, 2004, and 2005.
• Status of Greenhouse Laboratory Facility Use by Secondary Agricultural Educators in Arizona. (100%). (None).
  Description: Data collected in process of writing and submitting manuscript for publication to Journal of Agricultural Education.
• Undergraduate Education As Preparation for Employment: A Survey of 2005 Graduates. With James Knight (30%). (Experiment Station, Hatch Act).
  Description: Responsible for creating and maintaining a web-based version of the data-gathering survey instrument. Respond to survey responder questions, coordinate technical assistance, provide downloads of data.
• Analysis of Student Achievement in the National FFA Agriculture Mechanics Career Development Event 1996-2006. (100%). 2007 $1.00 ($1.00 Total) (None).
  Description: Analyzing scores provided by National FFA Organization.
• Arizona Agricultural Education Teacher Retention. (100%). (Experiment Station).
  Description: Part of Teaching Induction Research
• Undergraduate Education As Preparation for Employment: A Survey of 2004 Graduates. (25%).
  Developed the web-based version of the survey questionnaire.
• Teacher induction programs in agricultural education -Description of the role of Western Region AAE higher education teacher preparation programs. Franklin, E. & Student (2007 Teacher induction programs in agricultural education and the role of Western Region AAE higher education teacher preparation programs. Proceedings of the Western Region American Association of Agricultural Education Research Conference, Cody WY. Published. (75%).
• The Common Teaching Unit: Improving Agriculture Technology Management Laboratory Instruction During Student-Teacher Preservice Training. Franklin, E. & Miller G. (2007)
NAME: QUINTIN MOLINA
RANK: Lecturer
DATE OF APPOINTMENT: July 18, 2005
EDUCATION:
   B.S.: Agricultural Education, The University of Arizona, 2000

POSITION DESCRIPTION

Strategic Plan Program Areas:
Environment and Natural Resources: 15%
Family, Youth, and Community: 0%
Human Nutrition, Food Safety, and Health: 25%
Marketing, Trade, and Economics: 25%
Animal Systems: 10%
Plant Systems: 25%

Activity Distribution:
Instruction: 70% Research 30% Extension 0% Administrative 0%

AWARDS AND HONORS:
   • 1st Runner-up Outstanding Research Poster Presentation Award. Given by American Association for Agricultural Education, 5/18/2007. (100%).
   • Outstanding Research Poster Presentation Award. Given by Western Region American Association for Agricultural Education, 4/26/2007. (100%).
   • Outstanding Post Secondary Instructor Award. Given by Arizona Agricultural Teachers Association, 7/19/2007. (100%).

RESEARCH PROGRAM:
   • Arizona Agriscience Program Assessment. With Dr. Jack Elliot, Dr. Jim Knight, Dr. Billye Foster, Dr. Ed Franklin, Dr. Glen Miller (20%). 2007 $6,000.00 ($33,000.00 Total) (Arizona Agriscience Programs). Employees: 1, Student.
   Description: State-wide Agriscience Program Review.
   Impact: This project has established program standards for agricultural education within the state of Arizona.
   • Teachers Turn the Key. (10%). Invited as a co-presenter for the National Association of Agricultural Educators national convention. Charged to develop and co-coordinate a presentation on community based program advisory councils. The presentation was a great success and received a great deal of praise from the participants.
   Impact: The project provided young agriscience teachers from across the country with the information needed to start and maintain program advisory councils.
   • Update and Validation of the Professional Education Competencies in Agricultural Education. (100%). The update and validation of the field based teacher education competencies within the agricultural education field.
   Impact: This research project has served as a continuous guide for the development of curriculum and instruction within the agricultural education teacher preparation program.

Department of Agricultural Education, University of Arizona
• Preferences in the Classroom: The Contribution of Learning Styles and Multiple Intelligences to Student Learning. Peer-reviewed. Group venture submitted by Dr. Wendy Warner and Mr. Quintin Molina for the Western Region Teaching Symposium. Submitted. (20%).

Other
• OMEGA Conference Learning Styles and Multiple Intelligences Presentation. Co-presenter at the OMEGA conference in Indianapolis, Indiana. Presentation dealt with learning styles and multiple intelligences and the techniques used to meet each within post secondary education classrooms. Presented at OMEGA Conference, Indianapolis, Indiana on 7/7/2007. (20%).
• Western Region Teaching Symposium Learning Styles and Multiple Intelligences Presentation. Co-presenter with Dr. Wendy Warner at the Western Region Teaching Symposium in Tucson, Arizona. Presentation dealt with learning styles and multiple intelligences and the techniques used to meet each within post secondary education classrooms. Presented at Western Region Teaching Symposium on 9/22/2007. (50%).
• Western Region AAAE Poster: The Update and Validation of the Professional Education Competencies in Agricultural Education at the University of Arizona. Peer-reviewed. The poster visually depicts the development, research methods and results of the professional competency update and validation study. The poster also highlights the concepts and benefits that go hand in hand with competency based teacher education. Presented at Cody, Wyoming on 4/26/2007. (75%).
• American Association For Agricultural Education Research Conference Poster. Peer-reviewed. The poster visually depicts the development, research methods and results of the professional competency update and validation study. The poster also highlights the concepts and benefits that go hand in hand with competency based teacher education. Presented at Minneapolis, MN on 5/18/2007. (100%).
KERRY L. SCHWARTZ
Associate Specialist
July 1, 2006
Water and Natural Resources
Education Statewide Outreach

B.S.: Geology, James Madison University, 1984
M.S.: Geosciences/Geohydrology, The University of Arizona, 1990

POSITION DESCRIPTION
Strategic Plan Program Areas:
Environment and Natural Resources: 100 %
Family, Youth, and Community: 0 %
Human Nutrition, Food Safety, and Health: 0 %
Marketing, Trade, and Economics: 0 %
Animal Systems: 0 %
Plant Systems: 0 %
Activity Distribution:
Instruction: 0% Research 25% Extension 75% Administrative 0%

AWARDS AND HONORS:
- Project WET Foundation Award, In recognition of commitment to water education and conservation in Arizona, at 2007 Project WET Coordinators Conference, Tucson Arizona.
- College of Agriculture and Life Science Appointment to Associate Specialist in the Department of Agricultural Education, June 26, 2006.

RESEARCH PROGRAM:
Partnering with the Department of Educational Psychology, UA College of Education, APW received a Water Sustainability Program grant to develop a 6th grade Water Unit and conduct an assessment to determine its’ impact. Using a differential treatment experimental design, researchers found that students learned more about the water concepts specific to their particular interventions. Participating students indeed learned water concepts through the activities, but the effects were not large. Three factors likely hindered the detection of a larger programmatic effect:

1. Recruited teachers were not well-versed on the PW Guide and had no previous experience implementing the lessons.
2. Although there are advantages to the differential treatment design, the methodology employed might have led to an effect underestimation.
3. Some test questions may have included overly technical language and distractor answer options that may have confused students, especially English Language Learners.

This research was presented at the NAAEE Research Symposium - Celebrating the diversity of our research methodologies: finding common ground in Virginia Beach on November 14, 2007. A journal article will

Department of Agricultural Education, University of Arizona

A follow up study is now underway to examine the effectiveness of the Arizona Project WET water unit under a best case scenario, and create an online tutorial and assessment system to supplement extant Arizona Project WET resources and avoid more rote pre-post-testing of students. By the 2008-09 school-year, APW will offer a 6th grade research tested, water unit, and interactive learning computer module available to Arizona’s teachers.

APW strives to work with Districts to provide quality water education that strengthens the Districts core curriculum and helps teachers teach grade level specific benchmarks. Arizona Project WET has worked with master teachers to integrate APW lessons and materials in to the Full Option Science System (FOSS) Science Water Kits. APW lessons add concept-building teaching methods, local relevancy and improved adherence to the State standards to the FOSS Water Kits. This APW FOSS integration is currently being used at Tucson, Sunnyside, Flagstaff, Deer Valley, Madison and Murphy Unified School Districts and interest across the state continues. Research on the impact of this program will continue.

The Arizona Make a Splash with Project WET Water Festivals are intensive and interactive learning experiences designed specifically for 4th grade students and their teachers. Content is in accordance with the state mandated learning objectives for the students and includes the water cycle, watersheds and water supply, riparian systems, groundwater and water conservation. At the festival, structured hands-on lessons are used to engage students in understanding natural systems and water resources while having fun. Sixty-nine percent of the students attending correctly identified “watersheds” as the land area that drains into a body of water or dry wash. Only 41% of adults (2004 Roper/NEETF poll) can identify the definition of a watershed, so this is a significant achievement. APW will continue to develop funding to demonstrate program impact.
Faculty Potential to Respond to Change, Etc.
This is all we have done since I’ve been here. We try to lead the way for the state and in doing so, lead the nation in some areas such as academic interpretation.

Collective View of the Program’s Future
We received budget cuts during the state’s surplus years and now we have a deficit state budget. When the fiscal year starts July 1 we have enough resources to last six to eight weeks. We survive and excel because the faculty recognizes the budget limitations and contribute in an entrepreneurial fashion. Morale is good, but a strong feeling of being under appreciated permeates and underscores our future. The more we do to enhance our future (e.g., Continuing Education offerings), the more is taken away in budget cuts and skimming off the top.

The faculty want to excel in their positions and continued support of the goals and missions of the Department and CALS without feeling they must continually work to justify our existence. Without a permanent line-budget for teaching, the primary role of this unit, we work six jobs in the form of grants to fund our core mission.
E. Undergraduate Program

1. AGTM/AED Differentiate

The programs of study in agricultural education prepare students for entering careers in working with people in a variety of settings. These positions require preparation in basic sciences, technical agriculture, knowledge of the principles and techniques of the teaching-learning process, communication skills, and the ability to work with people. The department offers the degree of Bachelor of Science in Agriculture with majors in Agricultural Education (A ED) and Agricultural Technology Management (AGTM).

Agricultural Technology Management (AGTM) offers training in agricultural technology, environmental protection, communication, business, and economics. Course work qualifies graduates for certification as pest control advisors in Arizona and California.

**AGTM Courses**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
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<tbody>
<tr>
<td>AGTM 100</td>
<td>Principles and Practices of Agricultural Mechanization</td>
</tr>
<tr>
<td>AGTM 195a</td>
<td>Microcomputing Applications</td>
</tr>
<tr>
<td>AGTM 213</td>
<td>Agriculture and Food Marketing</td>
</tr>
<tr>
<td>AGTM 330</td>
<td>Turf and Landscape Technology</td>
</tr>
<tr>
<td>AGTM 350</td>
<td>Applications in Agricultural Mechanics</td>
</tr>
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<td>AGTM 351</td>
<td>Operations in Agricultural Mechanics</td>
</tr>
<tr>
<td>AGTM 380</td>
<td>Global Agricultural and International Relations</td>
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<tr>
<td>AGTM 402/502</td>
<td>Agriculture and the Environment: Focus on Pesticides</td>
</tr>
<tr>
<td>AGTM 422/522</td>
<td>Communicating Knowledge in Agriculture and the Life Sciences</td>
</tr>
<tr>
<td>AGTM 432/532</td>
<td>Technology Management</td>
</tr>
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</table>

**A ED Courses**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
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<tbody>
<tr>
<td>A ED 195a</td>
<td>Introduction to Teaching Agriculture and the Related Sciences</td>
</tr>
<tr>
<td>A ED 291A</td>
<td>Planning and Organizing Youth Career Development Event and Leadership Activities</td>
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<tr>
<td>A ED 301</td>
<td>Youth Leadership Development</td>
</tr>
<tr>
<td>A ED 407/507</td>
<td>Principles of Vocational Education</td>
</tr>
<tr>
<td>A ED 408</td>
<td>Diversity Issues in Contemporary Society</td>
</tr>
<tr>
<td>AED 422/522</td>
<td>Communicating Knowledge in Agriculture and the Life Sciences</td>
</tr>
<tr>
<td>A ED 438/538</td>
<td>The Teaching of Secondary School Agricultural Science</td>
</tr>
<tr>
<td>A ED 460/560</td>
<td>Instructional Materials Development</td>
</tr>
<tr>
<td>A ED 462/562</td>
<td>Curriculum Development</td>
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<tr>
<td>A ED 485/585</td>
<td>Teaching Psychomotor Skills in Laboratory Sciences</td>
</tr>
<tr>
<td>A ED 493/593</td>
<td>Student Teaching</td>
</tr>
<tr>
<td>A ED 494a</td>
<td>Practicums in Agricultural Education</td>
</tr>
<tr>
<td>A ED 498</td>
<td>Senior Capstone</td>
</tr>
<tr>
<td>A ED 496c</td>
<td>Ambassador Orientation</td>
</tr>
<tr>
<td>A ED 596/696c</td>
<td>Graduate Seminar in Agricultural Education</td>
</tr>
</tbody>
</table>
The courses offered and taught by the Department of Agricultural Education that have been created to serve the general college and university purposes are also the source of enrollments by students outside the major. The university created an approach to the general education curriculum where courses were identified at two basic levels called Tier One and Tier Two. Each segment of Tier One includes two courses, and each segment of Tier Two includes one course. Both Tier One and Tier Two courses provide rigorous treatments of fundamental knowledge and methods of inquiry within the segment. They have been designed to foster
independent, creative, and interactive learning, inspiring students to think about themselves, others, and social organizations in new and insightful ways. They were created to help students love to learn, excite them about the university experience, and leave them with valuable skills and knowledge applicable to their lives. The following courses have been designed and implemented to serve these broader purposes:

A ED 195A -- Freshman Colloquium (1 unit)
Description: Instruction often includes lectures by several different persons, usually in a small group setting. Designed to give students insight into the concepts and practices which typify different academic disciplines, and introduce students to the methods and standards of the discipline for discovering new knowledge, the values which characterize the field of study, advances in the field, impact on society, and career opportunities. This is a First-Year Colloquium Course. Grading: Regular or alternative grades can be awarded for this course: A B C D E or S P C D E. Usually offered: Spring.

A ED 293 -- Internship (1-6 units)
Description: Specialized work on an individual basis, consisting of training and practice in actual service in a technical, business, or governmental establishment. Grading: Alternative grades are awarded for this course: S P C D E. May be repeated: an unlimited number of times, consult department for details and possible restrictions. Usually offered: Fall, Spring, Summer.

A ED 299 -- Independent Study (1-3 units)
Description: Qualified students working on an individual basis with professors who have agreed to supervise such work. Grading: Alternative grades are awarded for this course: S P C D E. May be repeated: an unlimited number of times, consult department for details and possible restrictions. Usually offered: Fall, Spring, Summer.

A ED 299H -- Honors Independent Study (1-3 units)
Description: Qualified students working on an individual basis with professors who have agreed to supervise such work. Grading: Regular grades are awarded for this course: A B C D E. May be repeated: an unlimited number of times, consult department for details and possible restrictions. Usually offered: Fall.

A ED 301 -- Youth Leadership Development (3 units)
Description: Characteristics of effective advisors, leadership styles, strategies for the management and organization of youth groups in agriculture, practice in leadership development techniques. Grading: Regular grades are awarded for this course: A B C D E. Usually offered: Fall.

A ED 391 -- Preceptorship (1-3 units)
Description: Specialized work on an individual basis, consisting of instruction and practice in actual service in a department, program, or discipline. Teaching formats may include seminars, in-depth studies, laboratory work, and patient study. Grading: Alternative grades are awarded for this course: S P C D E. Usually offered: Fall, Spring.

A ED 391H -- Honors Preceptorship (1-3 units)
Description: Specialized work on an individual basis, consisting of instruction and practice in actual service in a department, program, or discipline. Teaching formats may include seminars, in-depth studies, laboratory work, and patient study. Grading: Alternative grades are awarded for this course: S P C D E. Usually offered: Fall, Spring.

A ED 393 -- Internship (1-6 units)
Description: Specialized work on an individual basis, consisting of training and practice in actual service in a technical, business, or governmental establishment. Grading: Alternative grades are awarded for this course: S P C D E. Usually offered: Fall, Spring, Summer.
A ED 394 -- Practicum (1-6 units)
Description: The practical application, on an individual basis, of previously studied theory and the collection of data for future theoretical interpretation. Grading: Alternative grades are awarded for this course: S P C E. May be repeated: an unlimited number of times, consult department for details and possible restrictions. Usually offered: Fall, Spring, Summer.

A ED 396H -- Honors Proseminar (3 units)
Description: The development and exchange of scholarly information, usually in a small group setting. The scope of work shall consist of research by course registrants, with the exchange of the results of research through discussion, reports, and/or papers. Grading: Regular or alternative grades can be awarded for this course: A B C D E or S P C D E. Usually offered: Fall, Spring.

A ED 399 -- Independent Study (1-3 units)
Description: Qualified students working on an individual basis with professors who have agreed to supervise such work. Grading: Alternative grades are awarded for this course: S P C D E. May be repeated: an unlimited number of times, consult department for details and possible restrictions. Usually offered: Fall, Spring, Summer.

A ED 399H -- Honors Independent Study (1-3 units)
Description: Qualified students working on an individual basis with professors who have agreed to supervise such work. Grading: Regular grades are awarded for this course: A B C D E. May be repeated: an unlimited number of times, consult department for details and possible restrictions. Usually offered: Fall, Spring.

A ED 407 -- Principles of Vocational Education (2 units)
Description: Social and economic values of vocational education, federal laws, state policies and administration; theories, and principles with special reference to programs in the secondary school. Grading: Regular grades are awarded for this course: A B C D E. Identical to: TTE 407. May be convened with: A ED 507. Usually offered: Spring.

A ED 422 -- Communicating Knowledge in Agriculture and the Life Sciences (3 units)
Description: Principles and processes of knowledge diffusion and methods of transferring appropriate technology to user/clientele groups. Communicating effectively within organizations. Grading: Regular grades are awarded for this course: A B C D E. Identical to: AGTM 422. May be convened with: A ED 522. Usually offered: Fall.

A ED 438 -- The Teaching of Secondary School Agricultural Science (4 units)
Description: Specific methods, objectives, organization of subject matter, and evaluation in the various subjects. Grading: Regular grades are awarded for this course: A B C D E. May be convened with: A ED 538. Usually offered: Fall, Summer.

A ED 460 -- Instructional Materials Development (4 units)
Description: Analysis and construction of resources and materials used in instructional delivery. Analysis and development of competencies and behavioral objectives used in preparing instructional materials. Grading: Regular grades are awarded for this course: A B C D E. Prerequisite(s): or Concurrent registration, A ME 493. Typical structure: 3 hours lecture, 3 hours laboratory. May be convened with: A ED 560. Usually offered: Fall.

A ED 462 -- Curriculum Development (3 units)
Description: Designed to prepare student teachers for their year in pre-service. Provides introductory material on curriculum development, record books and SAEs (experiential education), and the FFA as it
relates to agricultural education. Grading: Regular grades are awarded for this course: A B C D E. May be convened with: A ED 562. Usually offered: Spring, Summer.

A ED 485 -- Teaching Psychomotor Skills in Laboratory Sciences (1-2 units)
Description: Methods and procedures in teaching psychomotor operational skills, conducting demonstrations, providing for student and teacher safety, sequencing skills activities, providing and organizing agricultural education facilities, including micro-teaching demonstrations. Grading: Regular grades are awarded for this course: A B C D E. Typical structure: 1 hour lecture, 3 hours laboratory. May be convened with: A ED 585. Usually offered: Spring.

A ED 493 -- Internship (1-8 units)
Description: Specialized work on an individual basis, consisting of training and practice in actual service in a technical, business, or governmental establishment. Grading: Alternative grades are awarded for this course: S P C D E. May be repeated: for a total of 12 units of credit. Usually offered: Fall, Spring.

A ED 493H -- Honors Internship (1-8 units)
Description: Specialized work on an individual basis, consisting of training and practice in actual service in a technical, business, or governmental establishment. Grading: Alternative grades are awarded for this course: S P C D E. Usually offered: Fall, Spring.

A ED 494R -- Research (3 units)
Description: The practical application, on an individual basis, of previously studied theory and the collection of data for future theoretical interpretation. Grading: Alternative grades are awarded for this course: S P C D E. Prerequisite(s): ENGL 101, MATH 110, ABE 120, consent of the instructor. May be repeated: for credit 1 time (maximum 2 enrollments). Usually offered: Fall, Spring.

A ED 496C -- Ambassador Orientation (1-2 units)
Description: The development and exchange of scholarly information, usually in a small group setting. The scope of work shall consist of research by course registrants, with the exchange of the results of such research through discussion, reports, and/or papers. Grading: Regular or alternative grades can be awarded for this course: A B C D E or S P C D E. Prerequisite(s): open to COA Ambassadors only. May be repeated: for a total of 4 units of credit. Usually offered: Spring.

A ED 496D -- Seminar for Teaching Science and Mathematics Through Inquiry (2 units)
Temporary course: offered during Spring 2006 only. Description: The seminar will consist of a mix of sessions that include student and instructor presentations, active learning exercises, and discussions. Students will develop an understanding of the K-12 school environment, student competencies, the content-related needs of teacher partners, and methods for meeting some of those needs. Students will learn how to an effective resource to facilitate high quality instruction in the classroom. Grading: Regular or alternative grades can be awarded for this course: A B C D E or S P C D E. Available to qualified students for Pass/Fail Option. May be convened with: A ED 596D.

A ED 497G -- Instructional Advances in Career and Technical Education (1-3 units)
Description: Pre-service and in-service teachers crosswalk Career and Technical Education (CTE) Competencies with business and industry validated assessment options. Grading: Regular grades are awarded for this course: A B C D E. Available to qualified students for Pass/Fail Option. May be convened with: A ED 597G. Usually offered: Spring, Summer.

A ED 497Q -- Advances in Agricultural Communication/Education (1-5 units)
Description: Workshop that deals with the practical application of communication theories at the college level as they relate to planning and implementation of communication activities. Grading: Regular grades are awarded for this course: A B C D E. Available to qualified students for Pass/Fail Option. May be
repeated: for credit 1 time (maximum 2 enrollments). May be convened with: A ED 597Q. Usually offered: Fall, Spring.

A ED 498 -- Senior Capstone (1-3 units)
Description: A culminating experience for majors involving a substantive project that demonstrates a synthesis of learning accumulated in the major, including broadly comprehensive knowledge of the discipline and its methodologies. Senior standing required. Grading: Regular or alternative grades can be awarded for this course: A B C D E or S P C D E. Usually offered: Fall, Spring.

A ED 498H -- Honors Thesis (3 units)
Description: An honors thesis is required of all the students graduating with honors. Students ordinarily sign up for this course as a two-semester sequence. The first semester the student performs research under the supervision of a faculty member; the second semester the student writes an honors thesis. Grading: Regular grades are awarded for this course: A B C D E. May be repeated: for a total of 9 units of credit. Usually offered: Fall, Spring.

A ED 499 -- Independent Study (1-5 units)
Description: Qualified students working on an individual basis with professors who have agreed to supervise such work. Grading: Alternative grades are awarded for this course: S P C D E. May be repeated: an unlimited number of times, consult department for details and possible restrictions. Usually offered: Fall, Spring, Summer.

A ED 499H -- Honors Independent Study (1-5 units)
Description: Qualified students working on an individual basis with professors who have agreed to supervise such work. Grading: Regular grades are awarded for this course: A B C D E. May be repeated: an unlimited number of times, consult your department for details and possible restrictions. Usually offered: Fall, Spring.
### Year At-A-Glance
**Prior to start of Fall Semester**

<table>
<thead>
<tr>
<th>Freshman-First Semester Junior</th>
<th>Spring of Junior Year</th>
<th>Fall Semester</th>
<th>Prior to start of Spring</th>
<th>Spring Semester</th>
</tr>
</thead>
<tbody>
<tr>
<td>Complete Tier 1 &amp; Tier Requirements for University And selected course work for Major</td>
<td>State FFA Career Development Day (CDE)</td>
<td>Attend the National FFA Convention with your Cooperating Teacher* or complete 5 days of student related work</td>
<td>AED 493/593 (2)</td>
<td>3 Week Block</td>
</tr>
<tr>
<td>Complete 30 hours of agriculturally related course work</td>
<td>AED 462/562 (3) Meets 8-9 Participate in the State FFA Leadership Conference (June)</td>
<td>AED 438/538 (4) Meets 9-12 Mondays &amp; Wednesdays</td>
<td>AED 485/585 (2) (Meets 9-11:50)</td>
<td>13 Weeks of Student Teaching AED 493/593 (5) AED 498 (3)</td>
</tr>
<tr>
<td>Complete AED 195a colloquium</td>
<td>Obtain fingerprint clearance</td>
<td>AED 460/560 (4) Meets 9-4 Fridays 1 day on Campus for AED 493/498 orientation (June)</td>
<td>AED 407/507 (2) (Meets 1-4)</td>
<td>Post student Teaching Seminars (Finals Week)</td>
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<td>5 days in Cooperating Center (August)</td>
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<td>91 Field approved competencies provide guidance to the program.</td>
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</tbody>
</table>

AED 462/562 (3) Curriculum development (junior year)
AED 493/593 (2) Internship: Pre-student teaching experience (summer)
AED 498 (2) Senior Capstone: Student teaching assignments (summer)
AED 460/560 (4) Instructional Materials Development (fall)
AED 438/538 (4) The Teaching of Agriculture (fall)
AED 497G (2) Practicum (winter intersession)
AED 485/585 (2) Teaching Psychomotor Skills in Laboratory Science (spring)
AED 407/507 (2) Principles of Vocational Education (spring)
AED 493/593 (5) Internship: Student Teaching (spring)
AED 498 (3) Senior Capstone: Student Teaching Assignments (spring)

In addition to the course work listed here, the state of Arizona requires the following courses for teaching certification:
- SEI (LRC 416)
- POL 210

### 3. Agricultural Education-Teaching Summary

The responsibility for preparing teachers of agricultural education for secondary schools is a significant focus for the Department. The program in this area is quite unique in comparison to other programs from across the country in that it provides a “competency-based professional core.” Working with the teachers in the

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Department of Agricultural Education, University of Arizona
field, 91 competencies have been validated for the program. These competencies serve as the foundation upon which each professional agricultural education course is built. Thus, each of the courses developed for the program is comprised of a segment of the validated competencies. On an annual basis the competency list and the course outlines are revisited by the faculty members with the intent to keep up with the changes in the profession. In other words, the curriculum development for the Department is not static; it is a work in progress. Course and content articulation is the ultimate goal resulting in the design of this program of professional preparation. Therefore, a professional program is in operation, not just a series of unarticulated professional education courses.

The competency-based teacher program offered by the Department, if mastered, will enable a student who demonstrates those competencies to be an effective teacher. The specific objectives for each of the professional education courses in agricultural education are based upon the specific competencies that are identified to be taught in the respective courses. From a curriculum standpoint, this approach helps to eliminate unnecessary duplication and overlap of course content and, at the same time, allows for reinforcement of significant areas where redundancy is important.

The undergraduate courses are taught by full-time faculty members and are assessed by using the standard assessment program (CIEQ) offered by the University. In addition, assessment of the course content, quality of instruction, and other related items are conducted via personal interviews between the students and faculty members, and exit interviews with all of the graduating seniors by the Department Head.

The Department has been designated by the Arizona Board of Regents (ABOR) through the University of Arizona as the only Department in the state university system mandated to conduct formal instructional programs for the preparation of secondary and community college teachers of agriculture. Therefore, we are responsible for preparing teachers of agricultural education for secondary schools in the state of Arizona.

The following criteria are required for entry into the Agricultural Education Teacher Preparation Program:

1. Junior grade level
2. Minimum grade point average of 2.0
3. Complete the application process
4. Complete the interview process with Department faculty
5. Complete or enroll in A ED 462/562

Field experiences are scheduled, directed experiences in PK-12 settings, which occur prior to the capstone experience and related to a certification program. The capstone experience is a culminating professional experience in a PK-12 setting. This experience may include: student teaching, administrative internships, counseling practicums/internships, and school psychology internships.

Student teaching is a sustained, prescribed period of rigorous field-based experience performed under the supervision of a certified teacher and an institutional program supervisor in a PK-12 setting prior to being issued a Level I (Provisional) teaching certificate. The student teaching placement must be appropriate for the certification.
State FFA Career Development Day (CDE)—Students help coordinate various events (1 day)

Following placement interviews, students attend State Leadership Conference with cooperating centers, as chaperones—(3 days)

Fall semester, student teachers either attend National FFA Convention with cooperating centers or spend 5 days assisting with district and state events.

Fall semester, student practice-teach 3 different classes in 3 different public schools in a diverse variety of programs with diverse student bodies.

During fall semester and beginning of spring semester senior year, students complete practicum class addressing content weaknesses. (10 class sessions)

Students spend 5 days at cooperating centers between fall and spring semesters—prior to student teaching semester.

The student teaching portion gives the students numerous opportunities including, personal interviews, journal reflection and the ever important Exit Interview provided by Dr. Elliot as the students reach the exit point in the program.

Each year cooperating centers are recruited during the Fall semester for Spring hosting of a student teacher in 1-1/2 years.

- Letters are sent to all schools with agricultural education programs across the state. Teachers willing to meet the minimum requirements return a postcard designating their willingness to host a student teacher and the approval of their administrators.
- These responses are reviewed by an expert panel of faculty and schools not meeting the minimum requirements are eliminated.
- The final approved list of schools is provided to the students along with a presentation about the schools and programs.
<table>
<thead>
<tr>
<th>Field Experience</th>
<th>Course</th>
<th>Number of hours (range) required</th>
<th>Expectations</th>
</tr>
</thead>
<tbody>
<tr>
<td>State FFA Career Development Events</td>
<td>AED 462/562, Curriculum Development</td>
<td>8-10 hours</td>
<td>Students help with competitive events and monitoring of high school students.</td>
</tr>
<tr>
<td>State FFA Summer Leadership Conference</td>
<td>AED 493/593 (Summer) Internship</td>
<td>8-24 hours</td>
<td>Students serve as chaperones and assist cooperating teachers during the 3 day event.</td>
</tr>
<tr>
<td>Five days at cooperating center</td>
<td>AED 493/593 (Summer) Internship</td>
<td>30-40 hours</td>
<td>Students spend five days at cooperating center gathering information needed and assigned lessons. Interaction with faculty and students is expected and encouraged.</td>
</tr>
<tr>
<td>National FFA Convention</td>
<td>AED 438/538 Teaching Secondary Agricultural Science</td>
<td>60 hours</td>
<td>Students serve as chaperones and assist cooperating teachers during the 5 day event.</td>
</tr>
<tr>
<td>Practice teaching in public school—not assigned cooperating center</td>
<td>AED 438/538, Teaching Secondary Agricultural Science</td>
<td>14-18 hours</td>
<td>Students teach 3 lessons in 3 different classrooms under the supervision of the teacher educators. Following their own teaching experience, they observe their peers for the remainder of the day, then the group recaps the day with an overall evaluation discussion.</td>
</tr>
<tr>
<td>Five days at cooperating center</td>
<td>AED 493/593, (Winter) Internship</td>
<td>30-40 hours</td>
<td>Between the fall and spring semester, student teachers re-visit their cooperating site and share their prepared lessons with their cooperating teacher. They teach one or two classes and work with students on a daily basis.</td>
</tr>
</tbody>
</table>

If a student is experiencing difficulty in student teaching, the faculty of the department meets as a group to identify the threats to successful completion. In the case of conflicts with the cooperating teacher or the cooperating school environment, student teachers are moved to a new school and cooperating teacher. If the problem lies within the student teacher (i.e. decides teaching is not the correct career choice) the student is guided into the Agricultural Technology Management degree which delays graduation by one semester in a typical case. Graduation with the Teaching degree or the Agricultural Technology Management degree is considered a successful conclusion to the intervention/remediation.

Teaching faculty in the Department of Agricultural Education with rank of Lecturer, Assistant Professor, Associate Professor, and Professor are considered qualified for supervision of student teachers and are assigned to make on-site visits during the student teaching experience. All supervising faculty hold masters degrees or higher in Agricultural Education (Teaching) and have at least 5 years teaching experience at the secondary school level. The College of Agriculture and Life Sciences at the University of Arizona requires all faculty to submit an Annual Performance Report outlining instruction, research, and outreach activities.

The unit/program has an assessment plan for measuring a candidate’s competency in coursework and field experience. This assessment plan must be continuous and ongoing. The assessment plan requires that the candidate demonstrate competency in literacy (reading and writing) and numeracy (math) skills, proficiency in oral and written language, competency in content knowledge, professional knowledge, and eligibility for
certification. Evidence must be presented in this section that program faculty have used the information from the assessments for improvement of both candidate performance and program changes. The University of Arizona requires students to complete English and Math courses, plus the Mid-Career Writing Assessment.

All required English and Math courses need to be completed before graduation from the University of Arizona. The Mid-Career Writing Assessment requirement also needs to be completed before graduation, unless a student is taking courses where the Assessment is a pre-requisite.

All students in the College of Agriculture and Life Sciences must apply for degree candidacy in order to graduate and receive a degree or diploma, usually prior to the second semester of the senior year. Students are given a checklist showing completion of course requirements to date and course work in which they are deficient. Advisors work with the students to determine deficiencies in course requirements for the degree and advise them on which courses they will need to take to satisfy the deficient requirements.

Students have completed the deficient requirements for course work for the degree and are eligible for graduation.

Transcripts are kept by faculty and are reviewed individually. All privacy policies are followed.

Diversity in Field Experiences

“The vision of The University of Arizona is to create an exceptional learning environment, a place of possibility, and a destination for the world’s best thinkers. Critical to our vision are students, faculty, and staff who represent a broad diversity of thought, background, ethnicity, and perspective who find inspiration through their interactions with each other.”

The Department of Agricultural Education believes it is important for candidates to have diversity in their field experiences. The Department places students in agricultural education programs in school districts throughout the state of Arizona. The selection of cooperating centers is based on quality of cooperating teacher, completeness of program and diversity of community type (rural, urban, sub-urban, Hispanic serving, Reservation schools, etc.). Our students have an opportunity to learn and teach in all types of Arizona communities. (For example: Baboquivari High School in Sells, AZ; Douglas High School in Douglas, AZ; Chinle High School in Chinle, AZ; and Red Mesa High School in Teec Nos Pos, AZ., just to name a few). Diversity of thought and perspective is very evident in these school districts in curriculum areas and special programs as schools meet the diverse needs of their students.

Students have many placements during the Teacher Preparation Program, which assures students will be in diverse settings because the Department of Agricultural Education places students in agricultural education programs in school districts throughout the 15 counties in the state of Arizona. The diversity of community type (rural, urban, sub-urban, Hispanic serving, Reservation schools, etc.) is taken into account in the selection of cooperating centers. Our students have an opportunity to learn and teach in all types of Arizona communities.
Evidence of Quality

The program is the only one of its kind in the nation that uses Field-Based Competencies, therefore comparisons will be very difficult to find or make. The AED undergraduate major/program undergoes constant changes to strengthen the quality by using an Advisory Committee and by constantly reviewing the

Department of Agricultural Education, University of Arizona
curriculum via the update and validation of the 91 competencies. The Department’s curriculum is crosswalked to the Arizona Department of Education State Standards for Teacher Preparatory programs (LifeKnowledge Crosswalk w/Arizona Agricultural Curriculum Competencies 1-9, SAE FFA Integrated Skills). As stated earlier in the report, the Arizona State Board of Education granted the University of Arizona a five-year program approval for the Bachelor of Science in Agriculture Education, B.S. on April 23, 2007. This program approval is valid until April 23, 2012. It is more of an approved curriculum than a prescribed curriculum, and it meets and exceeds the prescribed standards.

<table>
<thead>
<tr>
<th>Technology Program Matrix For AED and AGTM Courses</th>
<th>ISTE (NETS) Standards</th>
<th>Course # and title where standard is addressed</th>
<th>Artifacts/Evidence</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Standard I</strong> Teachers demonstrate a sound understanding of technology operations and concepts.</td>
<td>AGTM 100 P&amp;P of AgMec</td>
<td>Undergraduates successfully complete 7 courses emphasizing skill development in all forms of technology.</td>
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<td>AGTM 120 Micro App</td>
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<td>AGTM 330 Urban Agro</td>
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<td>AGTM 350 App in AgMec</td>
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<td>AGTM 351 Opp in AgMec</td>
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<td>AGTM 422 Comm in Ag</td>
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<td>AGTM 432 Tech Mgmt</td>
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<tr>
<td><strong>Standard II</strong> Teachers plan and design effective learning environments and experiences supported by technology.</td>
<td>AED 438/538 Teaching Ag</td>
<td>After assignment of topics to student teachers in the summer preceding student teaching, undergraduates develop all lessons for student teaching</td>
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<td></td>
<td>AED 460/560 Inst. Mat Dev</td>
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<td>AED 462/562 Curr Dev</td>
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<td>AED 485/585 Psychomotor</td>
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<td></td>
<td>AED 493/593 StuTe Sp/Su</td>
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<td>AED 498 Cap Stu Teach</td>
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<td>AED 301 Youth Leadership</td>
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<tr>
<td><strong>Standard III</strong> Teachers implement curriculum plans that include methods and strategies for applying technology to maximize student learning.</td>
<td>AED 485/585 Psycho Skill</td>
<td>Lessons plans are evaluated using standard rubric. Lesson plans are placed in student’s portfolio with relia. Students are observed on site by UofA teaching faculty.</td>
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<td></td>
<td>AED 407/507 Prin Voc Ed</td>
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<td>AED 493/593 Student Teaching Spring/Summer</td>
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<tr>
<td><strong>Standard IV</strong> Teachers apply technology to facilitate a variety of effective assessment and evaluation strategies.</td>
<td>AED 462/562 Curriculum D</td>
<td>Students teach complete pre planned units of instruction and evaluate student performance based on state standards</td>
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</tr>
<tr>
<td></td>
<td>AED 460/560 Inst Mat Dev</td>
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<td></td>
<td>AED 485/585 Psycho Skill</td>
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<td></td>
<td>AED 493/593 StuTe Sp/Su</td>
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<td></td>
<td>AED 498/598 Capstone</td>
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<tr>
<td><strong>Standard V</strong> Teachers use technology to enhance their productivity and professional practice.</td>
<td>AED 493/593 StuTe Sp/Su</td>
<td>Teachers teach across all technological areas in Ag. Including Mechanics, Computers, Animal and Plant Science and Nat. Res.</td>
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<tr>
<td></td>
<td>AED 497G Practicum</td>
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<tr>
<td><strong>Standard VI</strong> Teachers understand the social, ethical, legal, and human issues surrounding the use of technology in P9-12 schools and apply those principles in practice.</td>
<td>AED 485/585 Psychomotor</td>
<td>Teachers practice methods of controlling student risk and minimize school and teacher liability through safety and ethical care of animals. Emphasis placed on class control and safety.</td>
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<td>AED 498/598 Capstone</td>
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<td>AED 493/593 StuTe Sp/Su</td>
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<td>AED 407/507 Prin Voc Ed.</td>
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4. Agricultural Technology Management

The major is both intensive and diverse, and contains core areas in:

- Written and oral communications (15 credit hours)
- Basic science and mathematics (24 credit hours)

Department of Agricultural Education, University of Arizona
• Environmental science and societal issues (16 credit hours)
• Agricultural economics and business management (18 credit hours)
• Basic agricultural sciences (23 credit hours)
• Technical agriculture (30 credit hours)
• Electives (6 credit hours).

Courses in the core areas are as follows:

• Communications: English composition, business or technical writing, small group decision making, organizational communications, agricultural communications.
• Basic Sciences and Mathematics: General biology, general chemistry, college algebra, statistics, computer science, either trigonometry, calculus or finite mathematics.
• Environmental Science and Societal Issues: Environmental science, ethical considerations in agriculture, agriculture and the environment (focus on pesticides), world food economy, environmental biology.
• Agricultural Economics and Business: Economics, agricultural finance, agricultural marketing, agricultural business management, accounting, personnel management, and agricultural sales.
• Basic Agricultural Sciences: Plant science, soil science, plant genetics, plant physiology, fundamentals of entomology, general plant pathology.
• Technical Agriculture: Irrigation principles and management, soil fertility, agricultural entomology, insect pest management, diagnosis and control of plant pathogens, weed management, a minimum of 12 credit hours from one or a combination of the following areas: field crops, vegetable crops, turfgrass science and culture, landscape horticulture, nursery systems management, tree and vine crops, agricultural engineering/mechanization, pest management.
• Electives: Western civilization, arts, language and literature.

The Agricultural Technology Management curriculum provides graduates with a solid foundation in science, agricultural technology, communications, environmental science and societal issues, and business/economics. In addition, built into the major are all the courses needed to qualify for California and Arizona pest control advisor certification. Another key component in the revised major is the inclusion of an optional industry internship program for the students.

The Agricultural Technology Management major is a professional curriculum designed to meet the challenges of the 21st century. Graduates have many employment opportunities in production/management/sales positions, as certified plant/animal protection specialists, and in many agricultural service-oriented businesses. In addition, graduates wishing to enter post-graduate programs in the agricultural sciences meet most of the requirements short of calculus and biochemistry. The courses taught by the department in support of the AGTM major are as follows:

AGTM 100 Principles and Practices of Agricultural Mechanization: Basic principles and operative skills in construction and maintenance which are part of agricultural operations in production and urban agriculture systems. Principles for wood and metal construction, inert gas welding, plasma cutting, and construction of wood and metal projects are included. Major emphasis is placed on safety in the laboratory.

AGTM 195a Microcomputing Applications: Using features in word processing, spreadsheet, presentation, and database software so business, volunteer, and personal work can be completed professionally and accurately with ease. Typical structure: Interactive course taught in computer laboratory.

AGTM 213 Agriculture and Food Marketing: Examine the organizational, institutional and economic elements that form agricultural and food marketing systems at the regional, national, and international levels.
AGTM 330 Turf and Landscape Technology: The basic scientific principles and skills of construction, operation, and maintenance in turf, landscape and urban agricultural equipment. Provides students with laboratory experiences in machinery, sprinkler and drip irrigation installation, operation and maintenance, chemical application systems, and hardscaping.

AGTM 350 Applications in Agricultural Mechanics: The fundamentals of electric power, electric motors, and leveling and measurement, and the internal combustion engine. Subject matter is selected to provide the fundamentals of applied mechanical knowledge and skills basic to urban agricultural mechanization and appropriate for instructional programs in agricultural mechanics at the secondary school level.

AGTM 351 Operations in Agricultural Mechanics: The fundamentals of agricultural power and machinery with emphasis upon applications to urban agricultural mechanization. Competencies include set up, adjustment, lubrication, as well as operation and maintenance of machinery involved in landscape construction, turf installation, turf maintenance, and other machinery specifically suited to urban agricultural mechanization. Selected production agriculture equipment may also be included.

AGTM 380 Global Agricultural and International Relations: The importance of agriculture to the cultures, political structures, and economies of developing countries in Africa, Asia, South America, and Oceania.


AGTM 422/522 Communicating Knowledge in Agriculture and the Life Sciences: Principles and processes of knowledge diffusion and methods of transferring appropriate technology to user/clientele groups. Communicating effectively within organizations.

AGTM 432/532 Technology Management: Utilizing the latest computer and technological advances to communicate effectively. Understanding the capacity and limitations of computers, software and technology.

Additions:
In addition to the courses listed above, the department also offers the standard University courses for colloquium (A ED 195/695), independent study (A ED 299/399/499/599/699), honors independent study (A ED 299H/399H/499H), and internship (A ED 293-693).

5. Advising

Undergraduate Advising

Each full-time faculty member in the department advises students. Several of the faculty members have been recognized with the A+ Advisor Award, which is given to one faculty member in the College on an annual basis. In fact, Dr. Knight has received that award three times in the past 10 years.

As students come into the College and choose to major in Agricultural Technology Management and Education, they generally meet with Mr. Santiago or Dr. Knight. They assist the students with their initial registration process and then Dr. Knight assigns them to one of the faculty members to be advised from that time forward.

Faculty members typically work with the students to plan their undergraduate program and then meet with them periodically, usually at registration time, to review that plan and to assess student progress. Our Department has remained steadfast in its commitment to maintain the advising with faculty members. While
all faculty members advise both Ag Ed and AGTM students, Dr. Miller and Dr. Franklin advise a larger portion of the AGTM students and Dr. Elliot advises all of the AGTM students who are pursuing the Information Systems focus area.

On an annual basis, the advising load of the faculty members is reviewed and an effort made to balance the loads for each advisor. We have developed an advising database to assist in keeping track of the faculty advising loads and to make sure that the College and the Departmental records coincide and are accurate.

A special program exists for those students who enter the university while they are serving as officers of the Arizona FFA Association. Because of their unique travel and service requirements, Mr. Santiago serves as the advisor to that group of students. After the students conclude their experience as state FFA officers, they are then assigned to the regular faculty members and are then advised in the same manner as other students in the Department.

The current undergraduate advising load is as follows:

<table>
<thead>
<tr>
<th>Advisor</th>
<th>AGTM</th>
<th>Ag ED</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Elliot</td>
<td>3</td>
<td>2</td>
<td>5</td>
</tr>
<tr>
<td>Foster</td>
<td>1</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>Franklin</td>
<td>3</td>
<td>3</td>
<td>6</td>
</tr>
<tr>
<td>Knight</td>
<td>3</td>
<td>12</td>
<td>15</td>
</tr>
<tr>
<td>Miller</td>
<td>12</td>
<td>2</td>
<td>14</td>
</tr>
<tr>
<td>Molina</td>
<td>10</td>
<td>0</td>
<td>10</td>
</tr>
<tr>
<td>Santiago</td>
<td>1</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>33</strong></td>
<td><strong>27</strong></td>
<td><strong>60</strong></td>
</tr>
</tbody>
</table>

6. Alumni

The Department has close ties with its alumni because of the fact that the faculty members work through a beginning teacher program. The faculty is also active with the teachers in their professional organizations such as the Arizona Association of Teachers of Agriculture (AATA) and the National Association of Agricultural Educators (NAAE), as well as providing courses and workshop experiences. A constant flow of information is exchanged between the Department and the alumni.

An Agricultural Advisory Board has been established to act in an advisory capacity towards the Department. The Board is made up of former graduates from the Department of Agricultural Education. Meetings are held at least twice a year where the Head and other faculty and staff from the Department exchange information and updates with the Board. These meetings also invite information from Board members on how to help agricultural teachers, students, schools, etc. as well as ideas to improve the Department. The Board has proven to be a great communication tool.

7. Student Groups

Jacobs-Cline was established in the fall semester of 1998 to allow Agricultural Education and Agricultural Technology Management students the opportunity to participate in a student-run organization on The University of Arizona campus. The name Jacobs-Cline was chosen in order to honor two former University of Arizona Agricultural Education professors, Dr. Cline and Dr. Jacobs. The Jacobs-Cline Society develops leaders by providing members with opportunities to develop leadership skills and serve in a leadership capacity within the organization. Jacobs-Cline also makes academic, career, and social success a very high priority for its membership. Jacobs-Cline is a symbol of excellence, professionalism, and respect within the university environment, the community, and the agricultural industry. Mr. Molina and Mr. Santiago serve as advisors.

Department of Agricultural Education, University of Arizona
In 2002 an **ACT (Agricultural Communicators of Tomorrow) Chapter** was established at the University of Arizona. The Department saw this as an opportunity for our students to strengthen their communication skills. We have competed nationally in categories such as public relations campaign, brochure writing, photography, and creative writing. Our students have won first place and runner up in the public relations campaign. We currently have six members. In the past the club has participated in activities such as touring a local newspaper, touring the campus radio station, and running the state Ag Communications Career Development Event for the Arizona FFA. Dr. Elliot and Ms. Jepsen serve as advisors.

8. **Continuing Education**

The Office of Continuing Education and Academic Outreach (CEAO) provides exceptional credit and noncredit educational opportunities to people seeking university-level instruction and enrichment outside the scope of the traditional campus experience. Providing the best in lifetime learning across the age spectrum, CEAO offers courses and programs for professional, academic, and personal advancement that help strengthen and advance the outreach mission of The University of Arizona.

Utilizing this respected venue, the Department of Agricultural Education offers a variety of classes through the distance education component of Continuing Education. The following courses are offered during summer sessions, winter and spring inter-sessions and sometimes during regular semesters. These options provide access for students throughout the state. In addition to aiding the conventional student, this opportunity aids teachers across the state seeking to complete requirements for certification.

A ED 408, Diverse Issues in Contemporary Society

A ED/AGTM 422, Communicating Knowledge in Agriculture and the Life Sciences

AGTM 432, Technology Management

A ED 462, Curriculum Development

A ED 497G, Instructional Advances in Career and Technical Education

A ED/AGTM 522, Communicating Knowledge in Agriculture and the Life Sciences

AGTM 532, Technology Management

A ED 562, Curriculum Development

A ED 597E, Continuing Education in Agriculture

A ED 597G, Instructional Advances in Career and Technical Education
F. Graduate Program

Overview

The graduate program in the Department of Agricultural Education leads to either a Master of Science or a Master of Agricultural Education degree. The Master of Science degree, available through the Graduate College, the University of Arizona, is administered by the Department of Agricultural Education. The intent of the program, which leads to the degree of Master of Science, is to develop academic abilities in research design, implementation, and analysis. An emphasis on research methodology and evaluation is an important part of the Master of Science degree program.

The Master of Agricultural Education degree, available through the Graduate College, The University of Arizona, is administered by the Department of Agricultural Education. The intent of the program, which leads to the degree of Master of Agricultural Education, is to develop academic abilities in agricultural subject matter, instructional techniques and methods, program planning and administration, etc. The Master of Agricultural Education is a practitioner’s degree in which a formal written report is required in lieu of a thesis.

Curriculum and Courses

Suggested Course Work for a Master of Science:

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>507</td>
<td>Principles of Vocational Education</td>
<td>2</td>
</tr>
<tr>
<td>522</td>
<td>Communicating Knowledge in Agriculture and the Life Sciences</td>
<td>3</td>
</tr>
<tr>
<td>532</td>
<td>(AGTM) Technology Management</td>
<td>3</td>
</tr>
<tr>
<td>538</td>
<td>Teaching of Secondary School Agriculture Science</td>
<td>4</td>
</tr>
<tr>
<td>560</td>
<td>Instructional Materials Development</td>
<td>4</td>
</tr>
<tr>
<td>562</td>
<td>Curriculum in Agricultural Education</td>
<td>3</td>
</tr>
<tr>
<td>585</td>
<td>Methods in Teaching Psychomotor Laboratory Sciences</td>
<td>2</td>
</tr>
<tr>
<td>593</td>
<td>Internship</td>
<td>1-8</td>
</tr>
<tr>
<td>596</td>
<td>Seminar</td>
<td>1-2</td>
</tr>
<tr>
<td>597</td>
<td>(B, E, G) Workshops</td>
<td>1-3</td>
</tr>
<tr>
<td>599</td>
<td>Independent Study</td>
<td>1-5</td>
</tr>
<tr>
<td>601</td>
<td>Philosophy and Practices of Instructional Methods</td>
<td>3</td>
</tr>
<tr>
<td>607</td>
<td>Untold Stories: University Women in Agriculture</td>
<td>3</td>
</tr>
<tr>
<td>615</td>
<td>Investigations and Studies in Agricultural Education</td>
<td>3</td>
</tr>
<tr>
<td>616</td>
<td>Research Project Design and Implementation</td>
<td>3</td>
</tr>
<tr>
<td>621</td>
<td>Program Planning and Evaluation</td>
<td>3</td>
</tr>
<tr>
<td>693</td>
<td>Internship</td>
<td>1-3</td>
</tr>
<tr>
<td>697C</td>
<td>College Teaching of Agriculture</td>
<td>3</td>
</tr>
<tr>
<td>699</td>
<td>Independent Study</td>
<td>1-3</td>
</tr>
<tr>
<td>900</td>
<td>Research</td>
<td>1-4</td>
</tr>
<tr>
<td>910</td>
<td>Thesis</td>
<td>1-6</td>
</tr>
</tbody>
</table>

Suggested Related Program Areas:

Agricultural & Biosystems Engineering
Agricultural and Resource Economics
Animal Sciences
Communications (507)
Educational Leadership
Entomology
Higher Education
Plant Sciences
Natural Resources

Department of Agricultural Education, University of Arizona
Soil, Water & Environmental Science
Teaching and Teacher Education

Suggested Course Work for Master of Agricultural Education:

507, Principles of Vocational Education ................................................................. 2 units
522, Communicating Knowledge in Agriculture and the Life Sciences .................... 3 units
532, (AGTM) Technology Management .................................................................... 3 units
538, Teaching of Secondary School Agriculture Science ......................................... 4 units
560, Instructional Materials Development ................................................................ 4 units
562, Curriculum Development .................................................................................. 3 units
585, Methods in Teaching Psychomotor Laboratory Sciences .................................... 2 units
593, Internship ........................................................................................................... 1-8 units
596, Seminar ............................................................................................................. 1-2 units
597, (B, E, G) Workshops ......................................................................................... 1-3 units
599, Independent Study ............................................................................................. 1-5 units
601, Philosophy and Practices of Instructional Methods ............................................. 3 units
607, Untold Stories: University Women in Agriculture .............................................. 3 units
615, Investigations and Studies in Agricultural Education ......................................... 3 units
616, Research Project Design and Implementation .................................................... 3 units
621, Program Planning and Evaluation ...................................................................... 3 units
693, Internship ........................................................................................................... 1-3 units
697C, Workshop on Teaching at the College Level .................................................... 3 units
699, Independent Study ............................................................................................. 1-3 units
900, Research ............................................................................................................ 1-4 units
909, Master's Report .................................................................................................. 1-5 units

Suggested Related Program Areas:

Agricultural & Biosystems Engineering
Agricultural and Resource Economics
Animal Sciences
Educational Leadership
Entomology
Higher Education
Plant Sciences
Natural Resources
Soil, Water & Environmental Science
Teaching and Teacher Education

The Master’s Report Proposal Review is intended to provide graduate students pursuing the Master of Agricultural Education degree the opportunity to present to the graduate examination committee the details of the proposed project. The seminar gives the graduate student the opportunity to share the proposed project including procedures and anticipated outcomes with the graduate examination committee to solicit ideas and gain approval prior to initiation of the project.

Policy:
All students pursuing a Master of Agricultural Education degree will be required to participate, as the primary lecturer, in a one hour presentation with his/her graduate examination committee to review the proposed project. The graduate student, with assistance of his/her major advisor, is responsible for developing and organizing the presentation. The graduate examination committee’s responsibility is to serve as the reaction panel and offer constructive criticism and critiques.

Department of Agricultural Education, University of Arizona
Presentation:
Each student, with the assistance of the major professor, will organize and verbally present a detailed overview of the proposed project. The oral presentation and the written proposal are the responsibility of the graduate student and the major professor.

A ED 507 -- Principles of Vocational Education (2 units)
Description: Social and economic values of vocational education, federal laws, state policies and administration; theories and principles with special reference to programs in the secondary school. Graduate-level requirements include developing a philosophy statement for a secondary-level school. Grading: Regular grades are awarded for this course: A B C D E. Identical to: TTE 507. May be convened with: A ED 407. Usually offered: Spring.

A ED 522 -- Communicating Knowledge in Agriculture and the Life Sciences (3 units)
Description: Principles and processes of knowledge diffusion and methods of transferring appropriate technology to user/clientele groups. Communicating effectively within organizations. Graduate-level requirements include an additional report. Grading: Regular grades are awarded for this course: A B C D E. Identical to: AGTM 522. May be convened with: A ED 422. Usually offered: Fall.

A ED 538 -- The Teaching of Secondary School Agricultural Science (4 units)
Description: Specific methods, objectives, organization of subject matter, and evaluation in the various subjects. Graduate-level requirements include an entire year's secondary curriculum plan. Grading: Regular grades are awarded for this course: A B C D E. May be convened with: A ED 438. Usually offered: Fall, Summer.

A ED 560 -- Instructional Materials Development (4 units)
Description: Analysis and construction of resources and materials used in instructional delivery. Analysis and development of competencies and behavioral objectives used in preparing instructional materials. Graduate-level requirements include an additional assignment. Grading: Regular grades are awarded for this course: A B C D E. May be convened with: A ED 460. Usually offered: Fall.

A ED 562 -- Curriculum Development (3 units)
Description: Designed to prepare student teachers for their year in pre-service. Provides introductory material on curriculum development, record books and SAEs (experiential education), and the FFA as it relates to agricultural education. Graduate-level requirements include an additional report. Grading: Regular grades are awarded for this course: A B C D E. May be convened with: A ED 462. Usually offered: Spring, Summer.

A ED 585 -- Teaching Psychomotor Skills in Laboratory Sciences (1-2 units)
Description: Methods and procedures in teaching psychomotor operational skills, conducting demonstrations, providing for student and teacher safety, sequencing skills activities, providing and organizing agricultural education facilities, including micro-teaching demonstrations. Graduate-level requirements include additional assigned readings, demonstrations, lesson presentations, and a position paper. Grading: Regular grades are awarded for this course: A B C D E. Typical structure: 1 hour lecture, 3 hours laboratory. May be convened with: A ED 485. Usually offered: Spring.

A ED 593 -- Internship (1-8 units)
Description: Specialized work on an individual basis, consisting of training and practice in actual service in a technical, business, or governmental establishment. Grading: Alternative grades are awarded for this course: S P C D E. Usually offered: Fall, Spring, Summer.

A ED 596D -- Seminar for Teaching Science and Mathematics Through Inquiry (2 units)
Temporary course: offered during Spring 2006 only.
Description: The seminar will consist of a mix of sessions that include student and instructor presentations, active learning exercises, and discussions. Students will develop an understanding of the K-12 school environment, student competencies, the content-related needs of teacher partners, and methods for meeting some of those needs. Students will learn how to be an effective resource to facilitate high quality instruction in the classroom. Graduate-level requirements include the graduate students be lead persons for the school observations, lessons taught in the class, coordinating the travel arrangements to the schools, and serving as mentors to the undergraduate students. Grading: Regular or alternative grades can be awarded for this course: A B C D E or S P C D E. May be convened with: A ED 496D.

A ED 597B -- Advances in Youth Leadership (1-3 units)
Description: The practical application of theoretical learning within a group setting and involving an exchange of ideas and practical methods, skills, and principles. Grading: Regular grades are awarded for this course: A B C D E. May be repeated: for a total of 12 units of credit. Usually offered: Fall, Spring, Summer.

A ED 597E -- Continuing Education in Agriculture (1-3 units)
Description: The practical application of theoretical learning within a group setting and involving an exchange of ideas and practical methods, skills, and principles. Grading: Regular grades are awarded for this course: A B C D E. May be repeated: for a total of 12 units of credit. Usually offered: Fall, Spring, Summer.

A ED 597G -- Instructional Advances in Career and Technical Education (1-3 units)
Description: Pre-service and in-service teachers crosswalk Career and Technical Education (CTE) Competencies with business and industry validated assessment options. Graduate-level requirements include the completion of two units of instruction. Grading: Regular grades are awarded for this course: A B C D E. May be convened with: A ED 497G. Usually offered: Spring, Summer.

A ED 597Q -- Advances in Agricultural Communication/Education (1-5 units)
Description: Workshop that deals with the practical application of communication theories at the college level as they relate to planning and implementation of communication activities. Graduate-level requirements include students to conduct a graduate seminar on their experience. Grading: Regular grades are awarded for this course: A B C D E. May be repeated: for credit 1 time (maximum 2 enrollments). May be convened with: A ED 497Q. Usually offered: Fall, Spring.

A ED 597T -- Instructional Advances in Non-Formal Education (1-3 units)
Description: The practical application of theoretical learning within a group setting and involving an exchange of ideas and practical methods, skills, and principles. Grading: Regular grades are awarded for this course: A B C D E. May be repeated: for a total of 12 units of credit. Identical to: FSHD 597T. Usually offered: Fall, Spring, Summer.

A ED 599 -- Independent Study (1-5 units)
Description: Qualified students working on an individual basis with professors who have agreed to supervise such work. Graduate students doing independent work that cannot be classified as actual research will register for credit under course number 599, 699, or 799. Grading: Alternative grades are awarded for this course: S P C D E. May be repeated: an unlimited number of times, consult department for details and possible restrictions. Usually offered: Fall, Spring, Summer.

A ED 601 -- Philosophy and Practices of Instructional Methods (3 units)
Description: Problems in organizing and conducting programs of instruction in vocational and extension education. Grading: Regular grades are awarded for this course: A B C D E. May be repeated: for credit 3 times (maximum 4 enrollments). Usually offered: Fall, Spring, Summer.
A ED 607 -- Untold Stories: University Women in Agriculture (3 units)
Description: This course examines the status of women involved in higher education in a variety of agriculturally related fields. Through readings and interviews we survey the working conditions, personal challenges and lifestyles of professional women in non-traditional fields. Covering a wide variety of topics, this course surveys the contributions of women to the professional workplace and to the household. The role of the law in shaping conditions for women in the workplaces and levels of satisfaction in their chosen professions is also reviewed. In addition this course moves toward understanding how to work with women in the professional workplace and enhance their contributions and encourage their professional growth. Grading: Regular grades are awarded for this course: A B C D E. Identical to: CALS 607, FCSC 607, PL S 607. Usually offered: Spring.

A ED 615 -- Investigations and Studies in Applied Research (3 units)
Description: Study and analysis of research literature, methods, techniques and procedures for conducting investigations, selecting a problem and developing plans for a study. Grading: Regular grades are awarded for this course: A B C D E. Usually offered: Fall.

A ED 616 -- Research Project Design and Implementation (3 units)
Description: Principles and practices of selecting, developing and analyzing research instruments, analyzing and interpreting both quantitative and qualitative data research in agricultural and extension education, including the use of the computer. Grading: Regular grades are awarded for this course: A B C D E. Prerequisite(s): A ED 615. Usually offered: Spring.

A ED 621 -- Program Planning and Evaluation (3 units)
Description: Developing and evaluating programs in teaching and extension; situation analysis, objectives, policies, content, procedures, and evaluative criteria. Grading: Regular grades are awarded for this course: A B C D E. Usually offered: Spring.

A ED 691 -- Preceptorship (1-3 units)
Description: Specialized work on an individual basis, consisting of instruction and practice in actual service in a department, program, or discipline. Teaching formats may include seminars, in-depth studies, laboratory work and patient study. Grading: Alternative grades are awarded for this course: S P C D E. Usually offered: Fall, Spring.

A ED 693 -- Internship (1-3 units)
Description: Specialized work on an individual basis, consisting of training and practice in actual service in a technical, business, or governmental establishment. Grading: Alternative grades are awarded for this course: S P C D E. Usually offered: Fall, Spring.

A ED 697C -- Workshop on Teaching at the College Level (3 units)
Description: Workshop that deals with the practical application of teaching/learning theories at the college level as they relate to instructional methodologies, strategies, and planning. This will include instructional objectives, content organization, and assessment of learning experiences. The workshop will involve the exchange of ideas and will focus on practical methods, skills, and principles. Grading: Regular grades are awarded for this course: A B C D E. Identical to: GRAD 697C. Usually offered: Fall.

A ED 699 -- Independent Study (1-3 units)
Description: Qualified students working on an individual basis with professors who have agreed to supervise such work. Graduate students doing independent work that cannot be classified as actual research will register for credit under course number 599, 699, or 799. Grading: Alternative grades are awarded for this course: S P C D E. May be repeated: an unlimited number of times, consult department for details and possible restrictions. Usually offered: Fall, Spring.
A ED 900 -- Research (1-4 units)
Description: Individual research, not related to thesis or dissertation preparation, by graduate students. Grading: Alternative grades are awarded for this course: S P C D E K. May be repeated: an unlimited number of times, consult department for details and possible restrictions. Usually offered: Fall, Spring, Summer.

A ED 909 -- Master's Report (1-5 units)
Description: Individual study or special project or formal report thereof submitted in lieu of thesis for certain master's degrees. Grading: Alternative grades are awarded for this course: S P E K. May be repeated: an unlimited number of times, consult department for details and possible restrictions. Usually offered: Fall, Spring, Summer.

A ED 910 -- Thesis (1-6 units)
Description: Research for the master's thesis (whether library research, laboratory or field observation or research, artistic creation, or thesis writing). Maximum total credit permitted varies with the major department. Grading: Alternative grades are awarded for this course: S P E K. May be repeated: an unlimited number of times, consult your department for details and possible restrictions. Usually offered: Fall, Spring, Summer.

A ED 920 -- Dissertation 1-9 units
Description: Research for the doctoral dissertation (whether library research, laboratory or field observation or research, artistic creation, or dissertation writing). Grading: Alternative grades are awarded for this course: S P E K. Usually offered: Fall, Spring, Summer.

A ED 930 -- Supplementary Registration (1-9 units)
Description: For students who have completed all course requirements for their advanced degree programs. May be used concurrently with other enrollments to bring to total number of units to the required minimum. Grading: a Grade of K is awarded for this course except for the final term. May be repeated: an unlimited number of times, consult department for details and possible restrictions. Usually offered: Fall, Spring, Summer.

**Graduate Students**

Efforts are made to provide flexible scheduling of graduate courses to allow teachers and others the maximum accessibility to the degrees. More classes are being offered via web course delivery through Distance Learning. Every effort is made to recruit quality graduate students and provide them with necessary support during their program. Several of the graduate students also serve as teaching assistants for the faculty members while they are taking coursework. They may also assist in research projects. In addition, numerous teachers and others who are not full-time graduate students are pursuing graduate degrees at any point in time.

The following tables show the current general and race/ethnicity composition of the Department’s graduate students as compared to the College of Education:
TABLE 4
Graduate Student Enrollment in Agricultural Education (Spring and Fall)

<table>
<thead>
<tr>
<th>Year</th>
<th>Total</th>
<th>Domestic (female)</th>
<th>Domestic (minority)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2002</td>
<td>31</td>
<td>19</td>
<td>4</td>
</tr>
<tr>
<td>2003</td>
<td>43</td>
<td>21</td>
<td>7</td>
</tr>
<tr>
<td>2004</td>
<td>39</td>
<td>22</td>
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</tr>
<tr>
<td>2005</td>
<td>39</td>
<td>26</td>
<td>4</td>
</tr>
<tr>
<td>2006</td>
<td>32</td>
<td>24</td>
<td>3</td>
</tr>
<tr>
<td>2007</td>
<td>32</td>
<td>26</td>
<td>5</td>
</tr>
</tbody>
</table>

Recent Graduates
Table 5 lists the Graduate degrees awarded in Agricultural Education for the past 5 years.

TABLE 5
Graduate Degrees Awarded in Agricultural Education
2002-2007 (Spring, Summer, Winter)

<table>
<thead>
<tr>
<th>Year</th>
<th>Master of Ag Ed</th>
<th>Master of Science</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>2002</td>
<td>8</td>
<td>6</td>
<td>14</td>
</tr>
<tr>
<td>2003</td>
<td>4</td>
<td>3</td>
<td>7</td>
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<td>2004</td>
<td>4</td>
<td>2</td>
<td>6</td>
</tr>
<tr>
<td>2005</td>
<td>4</td>
<td>1</td>
<td>5</td>
</tr>
<tr>
<td>2006</td>
<td>4</td>
<td>6</td>
<td>10</td>
</tr>
<tr>
<td>2007 (Spring, Summer)</td>
<td>1</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>TOTAL</td>
<td>25</td>
<td>22</td>
<td>47</td>
</tr>
</tbody>
</table>

Proposed Hiring of GTAs and Graduate Students
2007-2008

<table>
<thead>
<tr>
<th>Fall Responsibilities</th>
<th>Spring Responsibilities</th>
<th>FTE/Funding</th>
</tr>
</thead>
<tbody>
<tr>
<td>A ED 422/522 (one section); NAVIT</td>
<td>AGTM 432/532; NAVIT</td>
<td>.34 CALS &amp; NAVIT</td>
</tr>
<tr>
<td>A ED 438/538; ADE</td>
<td>A ED 462/562; ADE</td>
<td>.34 CALS &amp; ADE</td>
</tr>
<tr>
<td>A ED 460/560; AGTM 100 Grading; ADE</td>
<td>A ED 485/585; Teacher Induction Program; ADE</td>
<td>.34 CALS &amp; Tech Prep</td>
</tr>
<tr>
<td>A ED 422/522 (one section); Ag in the Classroom; ADE</td>
<td>A ED 195A; Ag in the Classroom; ADE</td>
<td>.34 CALS &amp; AITC</td>
</tr>
<tr>
<td>A ED 301; UNVR 295A</td>
<td>CALS Follow-Up NAVIT</td>
<td>Wages/Alumni</td>
</tr>
<tr>
<td>Dr. Foster’s grant</td>
<td>Dr. Foster’s grant</td>
<td>.50 CALS &amp; Grant</td>
</tr>
</tbody>
</table>
Current GTAs and Research

The following lists the current GTAs and their research:

**GTA 1**
The purpose of the study is to identify and compare the standardized test scores of elementary grade students taught by a teacher who has attended an Ag in the Classroom (AITC) Summer Conference, with the standardized test scores of elementary grade students of a teacher who has not attended a summer conference. The research is being conducted through a post-test method only. The expected outcome is that by using agricultural based examples and lessons (taught and provided at the summer conferences), there will be a significant difference between the scores of both groups of students on their elementary grade standardized test scores.

**GTA 2**
The research is to determine the reliability of the Arizona Agricultural Teachers’ Association Agriscience II Curriculum Assessments. The Agriscience II Curriculum Standards from which the curriculum assessments are aligned to are valid standards. However, for a test to be valid, it must be reliable. The validity and reliability of the Arizona Agricultural Teachers’ Association Agriscience I Curriculum was proven in the study conducted in 2007. There is a need to determine the reliability of the Agriscience II Curriculum.

In phase two, the Agriscience II Standards, the Plant Systems, Animal Systems, and Agribusiness Systems Options will be investigated. These options were targeted as the majority of the Arizona Agriscience Programs utilize them as their programs’ focus (Bushong, 2007). Given the success of phase one, the implementing the Arizona Agriscience II Curriculum and reliability testing of this curriculum will be operated in a similar manner.

**GTA 3**
The research is with Dr. Knight involving the CALS graduate follow-up study. This study is in effect to assess the overall perception of CALS graduates with the effectiveness of their undergraduate study with regards to academic preparation as well as career preparation after graduation. It is an annual study attempting to follow every graduate observing their decisions and attitudes as they leave the university.

**GTA 4**
Currently working with Dr. Knight and colleagues at Oregon State and Utah State Universities on a joint project entitled: “The Rural Youth Entrepreneur Project.” The purpose is to explore the relationship between a youth entrepreneur development program, specifically, Agricultural Education’s Supervised Agricultural Experience Program and rural community development.

Also working with Dr. Sabrina Tuttle of the San Carlos Reservation Cooperative Extension on a qualitative research study called “The Indian Country Extension Project.” The purpose of the research study is to determine if there are differences between County Extension and Indian Country Extension within the University of Arizona Cooperative Extension system, and if so, delineate those differences and similarities between the two.

**GTA 5**
The research is in the beginning stages; however, the research question is, “Can student achievement be increased through involvement of outside professionals in secondary education classrooms while assisting the professionals in building social capital.” The goal of answering this question is how to encourage partnerships between education and other professions, and if this is an effective way of improving student performance. Another study is NAVIT with Dr. Elliot. This involves tracking the performance of students at the schools in the NAVIT district in this multiple year study.
**GTA 6**

The role as a doctoral graduate associate with Dr. Foster includes assisting with the TRIF Biotechnology and Plant Disease Telediagnostics project and helping as needed with the AED 408 Diversity Class. The TRIF Biotechnology and Plant Disease Teledagnosis project is a collaborative effort between multiple entities within CALS and includes faculty and staff from Ag Ed, ECAT, Plant Sciences, and Cooperative Extension. The aim of the project is to train producers and other groups such as master gardeners and county extension agents to be first responders to identify problems such as sick plants or insects in the field. These first responders will then immediately submit digital samples (GPS coordinates, photos, and description of problems) to the diagnostician via Internet. If a problem is found by diagnosis of the digital sample, then an actual sample or set of samples may be physically sent to each lab as needed, saving time and money while building a state-wide database that may be used to identify disease vectors, which in turn will help everyone treat, monitor, and prevent a variety of plant diseases and pests. Another aim of the project is to crosswalk training modules and lessons through the state and CTE standards so that these lessons will be used by Ag and Science teachers to educate and inspire the next generation of agricultural leaders.

**Recruitment**

One of our primary recruitment tools for out of state graduate students is the NAAE Teachers Turn the Key workshops. It has led us to a variety of individuals. In addition, all of the national visibility that Dr. Elliot and Dr. Knight have also brings interested quality students to the Department.

**Induction**

The Department of Agricultural Education coordinates induction activities for New Teachers of Agricultural Education serving in secondary agricultural education programs in Arizona. All new teachers are invited to attend the New Teacher Meeting during the summer AzACTE conference. During the meeting, the teachers are provided with an overview of the program, introduced to the leadership of the Arizona Agriculture Teacher’s Association (AATA), Arizona State FFA Association (FFA), state staff of Arizona Department of Education (ADE), and Department of Agricultural Education from the University of Arizona. An orientation to the structure of the organizations, their committees, and expectations are explained. A presentation of “First Day in the Classroom” is provided to assist teachers as they ready for the first day of school in their classrooms. New Teachers are assigned a veteran teacher from AATA to serve as a Mentor Teacher.

Administrators of New Teachers are sent a letter explaining the induction program and inviting support for their new teacher to participate in the program. A signed post card from the administrator is kept on file in the Department of Agricultural Education office. Agricultural Education faculty contact new teachers to schedule classroom visits. The goal of the program is to visit each teacher a minimum of two times during the school year. The purpose of the visit is to observe the teacher in the classroom, tour facilities, meet the local administrator, and sit down with the new teacher to discuss their progress, challenges, philosophy, and problems. The observing faculty member provides suggestions for improvement in the classroom.

During the school year New Teachers meet to discuss their challenges, prepare curriculum, and plan their summer programs. Mentor teachers are encouraged to contact their New Teacher Mentee, schedule classroom visits, and provide support. New Teachers are provided assistance with completing Quality Indicator forms for the Arizona Department of Education.

Data is collected from New Teachers through survey questionnaires for the purpose of studying the induction and mentoring experiences during the first year. The data used to identify factors which relate to teacher retention and early departure from the classroom.
G. Student Outcomes Assessment

1. A ED

Ninety-one (91) field-approved and validated competencies provide direction for and serve as the major basis for assessing student outcomes for the Department. These competencies serve as the basis for the core content of the courses taught by the faculty members in the Department. The competencies were reviewed and validated in the spring of 2006 via a Delphi study designed and implemented by the department. Each competency was evaluated for validity and minor edits to the wording within the competencies were made based on the input from individuals within the agricultural education profession. The faculty members annually review the competencies and adjust the courses based upon the actual assessment process.

Methods used to assess intended student outcomes include, but are not limited to:

- Standardized Teacher-Course Evaluations giving student perceptions of skills learned, teaching effectiveness and learning success.
- Tests and assignments providing objective assessments of value-added student progress in the courses.
- Independent studies, internships and research projects allowing faculty to interact with students and facilitate critical thinking, in turn generating feedback on student needs and skills.
- Writing-Emphasis courses allowing evaluation of student readiness for technical, discipline-based writing.
- Academic advising and faculty mentoring providing one-on-one interaction and a clearer, more personalized assessment of student progress.
- An exit questionnaire providing graduates’ opinions of course offerings and advising assistance.
- An exit interview with the Department Head regarding anticipated career experiences, employment plans and perceived preparation and general overview.
- Informal tracking of alumni employment and professional progress.

**Agricultural Education - 91 Competencies**

<table>
<thead>
<tr>
<th>University of Arizona</th>
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<tbody>
<tr>
<td>Department of Agricultural Education</td>
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<tr>
<td>Field Based Teacher Education Competencies</td>
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<thead>
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<tbody>
<tr>
<td>1</td>
<td>Identify the objectives of agricultural education at the secondary school level.</td>
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<tr>
<td>2</td>
<td>Describe the concepts of a total program in agricultural education.</td>
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<tr>
<td>3</td>
<td>Describe the various types of programs and curricula in agricultural education.</td>
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<tr>
<td>4</td>
<td>Identify the objectives of agricultural education at the secondary school level.</td>
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<tr>
<td>5</td>
<td>Identify the role of professional educators, in general, and the duties and responsibilities of a teacher in agriculture, in particular.</td>
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<tr>
<td>6</td>
<td>Assess personal strengths and weaknesses based upon the qualifications of effective teachers of agriculture.</td>
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<tr>
<td>7</td>
<td>List the requirements for agriculture teacher certification in Arizona.</td>
</tr>
<tr>
<td>8</td>
<td>Plan an undergraduate program in agricultural education to achieve individual educational goals.</td>
</tr>
<tr>
<td>9</td>
<td>Identify the opportunities and rewards existing in teaching agriculture.</td>
</tr>
<tr>
<td>10</td>
<td>Identify the trends and developments taking place in agricultural and career &amp; technical education in Arizona and the nation.</td>
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<tr>
<td>11</td>
<td>Describe the role of youth organizations (FFA) in motivating students and vitalizing instruction in agricultural education.</td>
</tr>
<tr>
<td>12</td>
<td>List the characteristics of basic leadership behavior patterns.</td>
</tr>
<tr>
<td>13</td>
<td>Identify the characteristics of a good FFA chapter.</td>
</tr>
<tr>
<td>14</td>
<td>Design and carry out a meaningful FFA Program of Activities.</td>
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<td>15</td>
<td>Design an effective chapter officer training program.</td>
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<tr>
<td>16</td>
<td>Use basic parliamentary procedure skills.</td>
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<td>17</td>
<td>Explain the purpose of an FFA constitution and by-laws.</td>
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<tr>
<td>18</td>
<td>Use group dynamic techniques.</td>
</tr>
<tr>
<td>19</td>
<td>Analyze subject matter in developing units of instruction.</td>
</tr>
<tr>
<td>20</td>
<td>Formulate observable and measurable educational objectives for an instructional unit.</td>
</tr>
<tr>
<td>21</td>
<td>Use reference and resource materials in instruction.</td>
</tr>
<tr>
<td>22</td>
<td>Prepare and use teaching materials and realia.</td>
</tr>
<tr>
<td>23</td>
<td>Use accounting software in keeping enterprise records</td>
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<tr>
<td>24</td>
<td>Summarize and analyze financial and production records in teaching agriculture.</td>
</tr>
<tr>
<td>25</td>
<td>Integrate agricultural mechanics into the instructional program in agriculture.</td>
</tr>
<tr>
<td>26</td>
<td>List the characteristics of sound agricultural mechanics programs.</td>
</tr>
<tr>
<td>27</td>
<td>Plan and organize a curricula in agricultural mechanics.</td>
</tr>
<tr>
<td>28</td>
<td>Plan, organize, and maintain physical facilities.</td>
</tr>
<tr>
<td>29</td>
<td>Develop an adequate department budget based upon the instructional program with provisions for tools, consumable supplies and equipment.</td>
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<tr>
<td>30</td>
<td>Develop laboratory experience record keeping systems for each class in agricultural mechanics, ABS and Biotechnology.</td>
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<tr>
<td>31</td>
<td>Establish standards for quality workmanship in agricultural mechanics.</td>
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<tr>
<td>32</td>
<td>Teach general laboratory safety.</td>
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<tr>
<td>33</td>
<td>Teach the safe operation of laboratory power tools.</td>
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<td>34</td>
<td>Prepare materials, equipment and the environment for teaching demonstrations.</td>
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<td>35</td>
<td>Conduct effective teaching demonstrations.</td>
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<tr>
<td>36</td>
<td>Evaluate the effectiveness of teaching demonstrations.</td>
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<tr>
<td>37</td>
<td>Plan and organize work stations for optimum skill development by students.</td>
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<tr>
<td>38</td>
<td>Prepare instructional materials for use in individual skill development.</td>
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<tr>
<td>39</td>
<td>Maintain an inventory of tools, equipment and supplies.</td>
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<tr>
<td>40</td>
<td>Locate and file appropriate plans and specifications for student skills projects or laboratory exercises.</td>
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<tr>
<td>41</td>
<td>Apply the principles of color dynamics to the agricultural mechanics facilities.</td>
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<tr>
<td>42</td>
<td>Describe the teaching-learning process.</td>
</tr>
<tr>
<td>43</td>
<td>Apply basic principles of learning to teaching agriculture.</td>
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<tr>
<td>44</td>
<td>Utilize student learning styles in designing instructional techniques.</td>
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<tr>
<td>45</td>
<td>Apply interest skills in motivating students.</td>
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<tr>
<td>46</td>
<td>Use various methods to involve students in the teaching-learning process.</td>
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<tr>
<td>47</td>
<td>Recognize discipline problems and implement corrective measures.</td>
</tr>
<tr>
<td>48</td>
<td>Utilize student management and organizational techniques.</td>
</tr>
<tr>
<td>49</td>
<td>Determine when and how to use the various methods of teaching.</td>
</tr>
<tr>
<td>50</td>
<td>Utilize student needs and experience in developing instructional materials.</td>
</tr>
<tr>
<td>51</td>
<td>Develop and deliver the introduction to a lesson.</td>
</tr>
<tr>
<td>52</td>
<td>Use supervised study techniques.</td>
</tr>
<tr>
<td>53</td>
<td>Prepare and use lesson plans.</td>
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<tr>
<td>54</td>
<td>Develop a daily outline with appropriate time budget.</td>
</tr>
<tr>
<td>55</td>
<td>Evaluate the effectiveness and appropriateness of lesson plans.</td>
</tr>
<tr>
<td>56</td>
<td>Utilize appropriate techniques to stimulate and lead class discussion.</td>
</tr>
<tr>
<td>57</td>
<td>Summarize a lesson and develop the appropriate conclusion.</td>
</tr>
<tr>
<td>58</td>
<td>Plan and organize student activities which reinforce the application of subject matter.</td>
</tr>
<tr>
<td>59</td>
<td>Evaluate the effectiveness of teaching.</td>
</tr>
<tr>
<td>60</td>
<td>Construct evaluation instruments to assess student achievement.</td>
</tr>
<tr>
<td>61</td>
<td>Arrive at an objective evaluation of student attainment of competencies.</td>
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<tr>
<td>62</td>
<td>Maintain an environment conducive to effective learning.</td>
</tr>
<tr>
<td>63</td>
<td>Plan, organize, conduct and evaluate field trips.</td>
</tr>
<tr>
<td>64</td>
<td>Develop a total curriculum (4 years) for an agricultural education program at the secondary school level.</td>
</tr>
<tr>
<td>65</td>
<td>Develop, plan, and carry out annual and long-range programs for a department of agricultural education.</td>
</tr>
<tr>
<td>66</td>
<td>Plan a comprehensive summer program of activities.</td>
</tr>
<tr>
<td>67</td>
<td>Organize and use student notebooks.</td>
</tr>
<tr>
<td>68</td>
<td>Cooperate with guidance counselors in providing guidance and counseling for students.</td>
</tr>
<tr>
<td>69</td>
<td>Organize and use a program advisory committee.</td>
</tr>
<tr>
<td>70</td>
<td>Complete required State Department reports.</td>
</tr>
<tr>
<td>71</td>
<td>Prepare and maintain department records.</td>
</tr>
<tr>
<td>72</td>
<td>Describe fundamental techniques for teaching adults.</td>
</tr>
<tr>
<td>73</td>
<td>Identify the component of an effective supervised agricultural experience (SAE) program.</td>
</tr>
<tr>
<td>74</td>
<td>Develop a long-range supervised agricultural experience program with students.</td>
</tr>
<tr>
<td>75</td>
<td>Plan a comprehensive plan of student supervision.</td>
</tr>
<tr>
<td>76</td>
<td>Carry out an effective program of student supervision.</td>
</tr>
<tr>
<td>77</td>
<td>Develop project budgets, training plans and agreements.</td>
</tr>
<tr>
<td>78</td>
<td>Describe the role of career and technical education to the world of work.</td>
</tr>
<tr>
<td>79</td>
<td>Identify the basic principles of career and technical education.</td>
</tr>
<tr>
<td>80</td>
<td>Differentiate between general and career and technical education.</td>
</tr>
<tr>
<td>81</td>
<td>Describe the characteristics and organizational patterns of recognized career and technical education programs.</td>
</tr>
<tr>
<td>82</td>
<td>Describe the size and scope of career and technical education in Arizona and the nation.</td>
</tr>
<tr>
<td>83</td>
<td>Identify the need for career and technical education in Arizona and the nation.</td>
</tr>
<tr>
<td>84</td>
<td>Identify guidelines for developing career and technical education programs.</td>
</tr>
<tr>
<td>85</td>
<td>List the problems, issues and trends in career and technical education.</td>
</tr>
<tr>
<td>86</td>
<td>Micro-teach three complete lesson to secondary level classes in public schools through and early-experience program.</td>
</tr>
<tr>
<td>87</td>
<td>Practice the application of basic skills in plant science, animal science and other relevant curriculum areas for agricultural education.</td>
</tr>
<tr>
<td>88</td>
<td>Develop an understanding of the connection between academic and career and technical standards.</td>
</tr>
<tr>
<td>89</td>
<td>Develop a classroom daily procedure plan and behavior management plan.</td>
</tr>
<tr>
<td>90</td>
<td>Utilize multiple intelligence activities in lesson plan development to enhance learning.</td>
</tr>
<tr>
<td>91</td>
<td>Develop an integrated agricultural mechanics component for various options within the Arizona Agricultural Agribusiness/Agriscience Curriculum.</td>
</tr>
</tbody>
</table>

**Student Outcomes Assessment**

Eighty-Five (85) field-approved and validated competencies (next year it will be 91) provide direction and serve as the major basis for assessing student outcomes for the Department. These competencies serve as the basis for the core content of the courses taught by the faculty members in the Department. Periodically, the faculty solicits advice from individuals who are actually working in the field to update the competencies. The faculty members annually review the competencies and adjust the courses based upon the actual assessment process.

Methods used to assess intended student outcomes include, but are not limited to:

- Standardized Teacher-Course Evaluations giving student perceptions of skills learned, teaching effectiveness, and learning success.
- Tests and assignments providing objective assessments of value-added student progress in courses.

*Department of Agricultural Education, University of Arizona*
• Independent studies, internships and research projects allowing faculty to interact with students and facilitate critical thinking, in turn generating feedback on student needs and skills.
• Writing-Emphasis courses allowing evaluation of student readiness for technical, discipline-based writing.
• Academic Advising and Faculty Mentoring providing one-on-one interactions and clearer, more personalized assessment of student progress.
• An Exit Survey providing graduates’ opinions of course offerings and advising assistance.
• An Exit Interview with the Department Head regarding anticipated career experiences, employment plans and perceived preparation, and general overview.
• Informal tracking of alumni employment and professional progress.

2. Agricultural Technology Management

Historically the Department administered the “general agriculture” major for many years. That major fell out of favor because of the lack of focus. However, the need in the agricultural arena for well educated people who understand the “science in agriculture,” and at the same time are equally skilled in the many aspects of agricultural technology, environmental protection, communication, business and economics was more important than ever. In response to that need, a major in agricultural technology management was created.

The major is both intensive and diverse, and contains core areas in:
• Written and oral communications (15 credit hours)
• Basic science and mathematics (24 credit hours)
• Environmental science and societal issues (16 credit hours)
• Agricultural economics and business management (18 credit hours)
• Basic agricultural sciences (23 credit hours)
• Technical agriculture (30 credit hours)
• Electives (6 credit hours).

Courses in the core areas are as follows:
• Communications: English composition, business or technical writing, small group decision making, organizational communications, agricultural communications.
• Basic Sciences and Mathematics: General biology, general chemistry, college algebra, statistics, computer science, either trigonometry, calculus or finite mathematics.
• Environmental Science and Societal Issues: Environmental science, Ethical considerations in agriculture, agriculture and the environment (focus on pesticides), world food economy, environmental biology.
• Agricultural Economics and Business: Economics, agricultural finance, agricultural marketing, agricultural business management, accounting, personnel management, and agricultural sales.
• Basic Agricultural Sciences: Plant science, soil science, plant genetics, plant physiology, fundamentals of entomology, general plant pathology.
• Technical Agriculture: Irrigation principles and management, soil fertility, agricultural entomology, insect pest management, diagnosis and control of plant pathogens, weed management, a minimum of 12 credit hours from one or a combination of the following areas: field crops, vegetable crops, turfgrass science and culture, landscape horticulture, nursery systems management, tree and vine crops, agricultural engineering/mechanization, pest management.
• Electives: Western civilization, arts, language and literature.

The Agricultural Technology Management curriculum provides graduates with a solid foundation in science, agricultural technology, communications, environmental science and societal issues, and business/economics. In addition, built into the major are all the courses needed to qualify for California and
Arizona pest control advisor certification. Another key component in the revised major is the inclusion of an optional industry internship program for the students.

The Agricultural Technology Management major is a professional curriculum designed to meet the challenges of the 21st century. Graduates have many employment opportunities in production/management/sales positions, as certified plant/animal protection specialists, and in many agricultural service-oriented businesses. In addition, graduates wishing to enter post-graduate programs in the agricultural sciences meet most of the requirements short of calculus and biochemistry. The courses taught by the department in support of the AGTM major are as follows:

AGTM 100 Principles and Practices of Agricultural Mechanization (3) I. Basic principles and operative skills in construction and maintenance that are part of agricultural operations in production and urban agriculture systems. Principles for wood and metal construction, inert gas welding, plasma cutting, and construction of wood and metal projects are included. Major emphasis is placed on safety in the laboratory.

AGTM 120 Microcomputing Applications (3) I II. Introduction to the use of microcomputers in word processing, spreadsheets, presentation graphics, networks, and other areas.

AGTM 195A Agriculture Technology and Public Policy (1) I II. The exchange of scholarly information and/or secondary research, usually in a small group setting. Instruction often includes lectures by several different persons. Research projects may or may not be required of course registrants.

AGTM 213 Agricultural and Food Marketing (3) II. Examine the organizational, institutional, and economic elements that form agricultural and food marketing systems at the regional, national, and international levels.

AGTM 293 Internship (1-6). Specialized work on an individual basis, consisting of training and practice in actual service in a technical, business, or governmental establishment.

AGTM 299 Independent Study (1-3). Qualified students working on an individual basis with professors who have agreed to supervise such work.

AGTM 330 Turf and Landscape Technology (3) II The basic scientific principles and skills of construction, operation, and maintenance in turf, landscape, and urban agricultural equipment. Provides student with laboratory experiences in machinery, sprinkler and drip irrigation installation, operation and maintenance, chemical application systems, and hardscaping.

AGTM 350 Applications in Agricultural Mechanics (3) I The fundamentals of electric power, electric motors, and leveling and measurement, and the internal combustion engine. Subject matter is selected to provide the fundamentals of applied mechanical knowledge and skills basic to urban agricultural mechanization and appropriate for instructional programs in agricultural mechanics at the secondary school level.

AGTM 351 Operations in Agricultural Mechanics (3) II The fundamentals of agricultural power and machinery with emphasis upon applications to urban agricultural mechanization. Competencies include set up, adjustment, lubrication, as well as operation and maintenance of machinery involved in landscape construction, turf installation, turf maintenance, and other machinery specifically suited to urban agricultural mechanization. Selected production agriculture equipment may also be included.

AGTM 380 Global Agricultural and International Relations (3) I II The importance of agriculture to the cultures, political structures, and economies of developing countries in Africa, Asia, South America, and Oceania. Writing Emphasis Course.

AGTM 391 Preceptorship (1-3) I II. Specialized work on an individual basis, consisting of instruction and practice in actual service in a department, program, or discipline. Teaching formats may include seminars, in-depth studies, laboratory work, and patient study.
AGTM 393 Internship (1-6). Specialized work on an individual basis, consisting of training and practice in actual service in a technical, business, or governmental establishment.

AGTM 399 Independent Study (1-5) I II. Qualified students working on an individual basis with professors who have agreed to supervise such work.

AGTM 402 Agriculture and the Environment: Focus on Pesticides (3) II Concepts, principles and applications of population ecology as related to the impact of pesticide usage on agro-ecosystems, non-target organisms, environmental quality, and the sustainability of agricultural production. Examination of the current regulations governing pesticide use in agriculture.

AGTM 422 Communicating Knowledge in Agriculture and the Life Sciences (3) I. Principles and processes of knowledge diffusion and methods of transferring appropriate technology to user/clientele groups. Communicating effectively within organizations.

AGTM 432 Technology Management (3) II Utilizing the latest computer and technological advances to communicate effectively. Understanding the capacity and limitations of computers, software, and technology.

AGTM 493 Internship (2-8). Specialized work on an individual basis, consisting of training and practice in actual service in a technical, business, or governmental establishment.

AGTM 494R Research (3). The practical application, on an individual basis, of previously studied theory and the collection of data for future theoretical interpretation.

AGTM 498 Senior Capstone (1-3) I II. A culminating experience for majors involving a substantive project that demonstrates a synthesis of learning accumulated in the major, including broadly comprehensive knowledge of the discipline and its methodologies. Senior standing required.

AGTM 499 Independent Study (3). Qualified students working on an individual basis with professors who have agreed to supervise such work.
H. Academic Outreach (CTE, Program Reviews)

Academic Outreach in the Department of Agricultural Education is evidenced through a variety of programs directed by the faculty members. The most substantial effort that is currently in operation is the state-wide program review process where each program of agricultural education will undergo a comprehensive review once every three years.

This review process is designed to be community based and combines the expertise of community members, educators (including Agricultural Education Instructor(s), counselors or general education instructor(s), administrators and support service personnel), and state staff. Currently 46 Arizona agricultural education programs are in some stage of review completion. This figure includes the seven schools that have already completed the review and are working on meeting the guidelines within their community based action plan. The faculty members in the Department facilitate the entire process.

The professional development component, funded through the Arizona Department of Education, provides dissemination of information and technology advances. Active involvement on a variety of advisory boards involving agricultural education and the FFA provide ongoing opportunities for teachers and high school students across the state. In addition, the coordination of the annual FFA Career Development Events Day promotes positive interaction among secondary school teachers, students, and faculty members of the College of Agriculture and Life Sciences at the University of Arizona.

On a different level, faculty members are often asked to speak on current issues of relevance relating to their individual research or experiences. Collaborative efforts with other departments and colleges across campus underscore the service driven philosophy of the department. Typical outreach activities include:

- Initiating annual Career Development Event Field Days and FFA State Leadership Conferences
- Speaking by invitation to schools, faculty meetings or conferences, and other interested parties
- Publishing research reports, newsletters, and articles in professional trade magazines and refereed journals
- Providing workshops and professional development classes both individually and collaboratively with ASU and NAU
- Developing courses and presentations designed to share pedagogical practices with both faculty and graduate teaching assistants
- Developing and presenting workshops on professional development and teaching skills for national groups by invitation

Another major contribution to the profession in Arizona by the Department of Agricultural Education is the ongoing development of new curricula for the secondary level agricultural education teacher. Along with developing new curricula, faculty and graduate students work at reviewing and revamping existing curricula.

As a service specifically designed to reach the needs of Arizona Agricultural Education teachers, various targeted workshops are sponsored throughout the year including sessions like “Developing Agricultural Mechanics Curriculum” and “Utilizing Decisions and Dollars.” The Department also maintains the New Teacher Program, designed to support and guide new members of the profession through their early and most critical professional years. The program provides on-site visitation, three seminars spread across the year, and ongoing advisement and mentoring by the faculty. That involvement is enhanced by the active participation with the “Team Ag Ed” meetings, which are held 3-4 times per year.

A unique state of synergy exists in the Department partially revolving around the variety of outreach projects initiated by the faculty. Brief examples of outreach activities of each of the faculty follow:
• Dr. Knight brings another perspective to academic outreach in the Department. Working as a consultant for educational excellence, school climate, diversity issues and teaching effectiveness, he has worked individually with numerous school districts in Arizona and the Arizona Department of Education. Nationally known for his expertise in these areas, Dr. Knight has tailored a variety of workshops and seminars to address the needs of schools in Arizona and throughout the country.

• Another outreach component revolves around the work of Dr. Miller and Dr. Franklin in their ongoing work with secondary agricultural education teachers through hands-on workshops introducing new technical advances in areas related to agricultural mechanics. Both Dr. Miller and Dr. Franklin also work to help teachers develop the components of the state FFA Agricultural Mechanics Career Development Event so that the event reflects the Arizona industry and their classroom curriculum.

• Dr. Elliot is the driving force behind the Arizona Department of Education professional development grant. His work in this area has led to an increased involvement in the number of committees and boards on which he serves. His active involvement on the State Board of Education: Career and Technical Education Advisory Committee and the Arizona Council for Occupational and Vocational Administrators, places him in a unique position to impact policy.

• Dr. Foster brings another element to the Department as the current editor of *The Agricultural Education Magazine*. In addition, her work with diversity issues takes her across the College and the Country to provide her expertise. Along with her diversity work, Dr. Foster continues to work in teacher education. Since 2003 Dr. Foster has coordinated and co-presented a series of workshops for the National Association of Agricultural Educators (NAAE) known as “Teachers Turn the Key.” Designed to enhance the work of beginning teachers, these workshops address a variety of issues including curriculum development, classroom management, and community interactions. Dodge sponsors this project where individual teachers (having taught 2-4 years) are selected from each of the 50 states and given an all expense paid trip to the National NAAE convention and the “Teachers Turn the Key” Workshops.

• As an Associate Specialist in the Department of Agricultural Education, Kerry Schwartz directs the state-wide Arizona Project WET (Water Education for Teachers) comprehensive water education program housed at the UA Water Resources Research Center. This Arizona Cooperative Extension Program has become increasingly important as Arizona’s population skyrocket, drought conditions continue, and global warming becomes an accepted reality. Ms. Schwartz uses the nationally recognized, teacher-tested program to deliver local and state specific water resource education. She coordinates a network of Arizona Project WET facilitators, conducts educator and facilitator workshops, works with school districts to bring quality relevant water education into the curriculum, and promotes water education across the State. Ms. Schwartz participates in water education assessment and research projects and will present on two of those at the North American Association of Environmental Education Research Symposium in November 2007. One of these studies, “Using a Partitioned Treatment Design to Examine Project WET Impact,” will be published in the Journal of Environmental Education in 2008. She is co-author of the new Arizona Conserve Water Educators’ Guide, published May 2007. She also was on the steering committee and a contributing author of three educational student booklets: *Waters of Arizona, Drought, and Discover a Watershed: the Colorado Educators Guide*. As a result, her work is state-wide and impacts thousands of students.

• Dr. Sabrina Tuttle works with Extension on the San Carlos Indian Reservation. She has submitted a proposal where she and her colleagues would like to learn about successful Extension projects on the reservation, improve their own implementation of projects on their reservation, and then share the knowledge with their colleagues in Extension nationally and internationally through publication of the results of the study. This research project would also help Dr. Tuttle and colleagues in their professional development by teaching them how to do a qualitative research project, and place the research project as an item in their promotion packets as necessary research experience.

• Dr. Barbara Hutchinson has been a member of the Agriculture Network Information Center (AgNIC) since its inception in 1994 and is current past-chair of the Executive Board. AgNIC is a voluntary...
alliance of partner institutions with the common vision and goal to provide Internet access to rich, quality information and expertise in the agricultural sciences. Today, there are 60 institutional partners. Each institution has one or more representatives who serve on the Coordinating Committee. The Coordinating Committee elects the members of an Executive Board, supports the overall direction of AgNIC, attends annual meetings, keeps the institution informed of AgNIC news and events, and coordinates the institutions’ contributions to AgNIC. The initiative has been successful with 18.5 million web visits in 1999 to more than 170 million visits across AgNIC sites in 2006 (http://www.agnic.org). One of the AgNIC member sites is "Rangelands West", a web portal to rangeland and ecology management information and resources (http://rangelandswest.org).

Barbara Hutchinson is a member of the originating team that built this portal which began as a University of Arizona project in 1995 involving both rangeland scientists and library/information specialists from the College of Agriculture and Life Sciences and the Science-Engineering Library. In 2001, the Arizona Rangelands project became a regional initiative and now includes members from nineteen land-grant universities throughout the Western U.S. and is sanctioned by the Western Agricultural Experiment Station Directors as an official regional project. Currently, Dr. Hutchinson serves on the Outreach and Development Committee as well as leads the "Inventory and Monitoring" content development Committee.

- Lisa Lauxman - Lisa Lauxman’s key grant programs are:

  **Grants- Engaging Youth Serving Communities (2A, 4, 5)- To engage five rural communities in Pima, Graham, Greenlee, Cochise and adult partnership in civic engagement.**

  **Grants- Health Rocks! - 1 of six state implementation grants to train teams of teens-adult partners to deliver the training to youth. Health Rocks! is a decision-making program with its beginning-level curriculum currently targeted at youth ages eight to twelve. The experiential education program is taught by teen/adult leadership teams to help youth learn key health messages and skills such as critical thinking, how to manage stress, how to handle peer pressure, and how to communicate effectively. Special emphasis is placed on tobacco use prevention. The program also includes components that bring youth and adults together as partners in developing community strategies that prepare young people to make healthy lifestyle choices.**

  **Arizona 4-H Youth Development has two targeted grants involving military installations and guard and reserve. The one grant involves youth development programming at two Army ( Ft. Huachuca, Yuma Proving Ground) and two Air Force ( Davis-Monthan, Luke) installations as well as four OCONUS Air Force installations (Osan, Korea; Yokota, Misawa, and Kadena, Japan). Operation Military Kids is a grant supported program to develop sustainable, collaborative efforts for youth of the deployed guard, reserve, and active installations.**

- Dr. Ed Franklin plays a major role in the induction program for beginning teachers and has also worked with student teachers in the field.

- Nancy Regens works with the Project CATTs (Collaboration to Advance Teaching, Technology and Science). The project is by the National Science Foundation. It was first funded in the fall of 1999 and refunded in 2004. It is a GK-12 - Graduate Kindergarten through 12th grade teaching fellowship. CATTs places advanced undergraduate and graduate science, math, computer, and engineering University of Arizona students in local K-12 classrooms as science/math resources. The fellowship runs from May to May with a pre-fellowship spring semester workshop to better prepare our fellows for the K-12 classroom setting. Each fellow works 15 hours per week - 10 hours in direct contact with teachers and students during their fellowship year. The graduate stipend is $30,000 with other benefits.

- Jane Shovlin is the AzHOSA State ADvisor for Arizona Health Occupations Students of America. AzHOSA is a Career and Technical Student Organization that is in its third year in Arizona. The national organization is committed to packing the pipeline of future healthcare workers through CTE. She has been visiting all eligible schools in Arizona with an Allied Health or Nursing Service program to help them start a HOSA chapter and take advantage of all the opportunities HOSA has to offer. Jane has also been doing PAR - Program Assessment Reviews for the Arizona Department of Education - CTE. This has allowed her to see how she can assist the
teachers and programs at the schools that have been visited. It also gives the administration feedback on how to improve their CTE program. AzHOSA has two state-wide conferences each year. The Fall Leadership Conference is an opportunity for student to participate in over 15 breakout sessions in areas such as leadership, career opportunities, mock competitive events and network with other students. The Spring Conference will include the elections of our new state officers and over 55 competitive and recognition events.
I. Collaborations with other Units

The faculty members participate in interdisciplinary programs and other such efforts on campus (Arid Lands Resource Sciences, Arizona Project WET, SAMEC [Science and Math Education Center], CATTS [Collaborative for the Advancement of Teaching Technology and Science]), and the University Alumni Association. This involvement draws on the academic expertise in the department in the classroom through formal teaching, service on thesis and dissertation committees and participation in seminars, panel discussions, and conferences. As University citizens, faculty members are often called upon to serve on new faculty member searches, support the work of the University Teaching Center, and participate in advisory committee work.

In the past five years, a conscious effort has been made to attract students from other majors in the various colleges to several of the leadership and teaching courses offered by the Department as well as in the basic computer courses taught by our faculty. This effort has been successful and is credited with expanding the thinking of students in the department who are often not otherwise exposed to the thoughts and ideas of their cohorts from other disciplines, particularly those beyond the College of Agriculture and Life Sciences. To further this effort, a number of courses are now being cross-listed in other departments.

The following items represent some of the collaborative efforts that have and are going on with other groups:

- The Agricultural Education Advisory Committee, made up of former Agricultural Education majors, serves as a communication tool. The group meets twice a year with Dr. Elliot and other members of the department to discuss current issues, concerns, trends, needs, etc. Currently, members of the group are Dr. Johnson Bia, President of Downtown Campus, Pima Community College; April White, Agricultural Education Teacher at Paradise Valley High School; Vaughn Croft, Senior Program Coordinator, Office of the Pima County School, Superintendent; Walter Wesch, Agricultural Education Teacher at Baboquivari High School; Jose Bernal, Agricultural Education Teacher at Amphitheater High School; Lance Fite, Agricultural Education Teacher at Safford High School; Stacey Rich, Director of Learning, American Red Cross; Tori Bourguignon at Amberly’s Place; and Dean Fish, Associate Agent, Santa Cruz County Cooperative Extension.

- The Team Agricultural Education Committee is made up of three entities: the Arizona Department of Education, Agriculture (Dennis Fiscus, Tyler Grandil, and Jimmy Wojcik); U of A (Jack Elliot, Quint Molina, or Jim Knight); and the Ag Teachers (including current and past presidents). The meetings are used as a communication tool between the three entities.

- The FFA competitive field day Career Development Events are a collaborative effort among the various departments in the College and is intended to provide a university learning experiences for students from throughout the state. This has an added benefit in that it serves as a recruiting tool.

- VetScience/Microbiology majors are now being counseled into communication, leadership and education courses in the Department to enhance people skills seen as increasingly necessary for their professional field.

- The Department has a close association with the Science Education faculty who are working together to prepare science teachers and equip them with skills for success.

- Because of the integrative nature inherent in the research programs of some of our graduate students, we have nurtured working relationships with a number of faculty across campus, e.g., from the College of Education, the Medical School, Humanities, Public Health, Anthropology, and the technical departments in the College. These associations are generally rewarding for all concerned and underscore the need to more fully develop interdisciplinary study possibilities across all the colleges.

- Currently another effort is built around a collaborative grant with Plant Sciences initiating new technology use in the field with the additional development of matching curriculum for high school...
agricultural science teachers. This endeavor will allow students in high school classrooms to learn about cutting edge technology at the same time producers in the field are adapting it.

Significant collaborations exist external to the University as well. These relationships are the major source of the outreach efforts.

**Outreach and Service**

The Department of Agricultural Education maintains significant outreach and service activities. Following are the major components of those efforts:

**New and Returning Teachers’ Program:**
Dr. Franklin is currently directing this program and is assisted by Dr. Glen Miller. All new and returning teachers of agricultural education were visited on-site in the fall and spring semesters, and also participated in several seminars that involved curriculum planning and development.

**Arizona Agriculture Teachers Association (AATA):**
Faculty members participated directly in the activities of the AATA. Meetings were held at Peoria, Payson, and Tucson. Mr. Molina is now serving as a board member of AATA.

**Professional Development Projects:**
The Department was responsible for coordinating 15 Professional Development workshops throughout the state of Arizona for agriscience and career and technical educators. Faculty and staff in the Department were involved in a professional development activity called “Strengthsquest” which is a program that analyzes answers to specific questions and based on those answers helps people discover their strengths in academics, career and beyond. These strengths, or themes, allow a Department to realize the greatest potential from their personnel. In addition, Diversity activities are included in our Department meetings every other month.

**Arizona FFA Association:**
In addition to the CDE day in March and the State Leadership Conference in June, the faculty members were involved with numerous local and state FFA events, including Peoria Mini-Leadership Camp, State FFA Camp, local chapter banquets, serving as judges of state FFA awards applications, and working with state winners in preparation for national competition. In addition, Dr. Knight represented the Department on the Board of Directors for the Arizona Agricultural Education/FFA Foundation.

**National FFA Organization:**
Dr. Elliot served as the lead facilitator for the National FFA OMEGA Initiative, a 10-month Young Agricultural Education Faculty Professional Development Process. He also was co-chair of the Leadership Continuum Project. Dr. Franklin is now serving on the National FFA Career Development Event Advisory Committee that makes recommendations for revising CDE events. Dr. Knight has initiated a regional research project to evaluate the effectiveness of past National FFA Degree recipients in entrepreneurial activities.

**Local CTE Directors’ Meetings:**
The Arizona Career and Technical Education Local Directors meet each month during the academic year and the Department participated in those meetings.

**Student Teacher Program:**
Mr. Molina currently coordinates our award winning program that puts faculty members in the classrooms with the student teachers, who are placed throughout the state.
Arizona Career and Technical Education (ACTEaz):
Dr. Elliot completed his term as a member of the Arizona Council of Occupational/Vocational Administrators Board. The Department presented workshops to agricultural educators and administrators at the State ACTEaz Conference held in July 2007 in Tucson. In addition, Dr. Elliot serves on the State Board of Education, CTE Advisory Committee.

Association of Career and Technical Education for Research (ACTER):
Dr. Elliot completed his term as President and is now Past-President. Dr. Knight is the Treasurer.

American Association of Agricultural Educators:
Dr. Foster is the Western Region Secretary and Dr. Elliot is the Western Region Vice President.

National Association of Agricultural Educators (NAAE):
The Department facilitated four workshops for the Teacher Turn the Key event at the National Association of Agricultural Educators Conference in Atlanta in November. This is the fourth year the Department has been asked to facilitate Teacher Turn the Key and it is an honor to present these workshops as well as excellent exposure for us.
### J. Resources

The following information shows currently funded grants. In addition, the Department has a pending grant from the Arizona Department of Education in the amount of $67,538.

**AGRICULTURAL EDUCATION**  
**SUMMARY OF GRANT ACCOUNTS**  
**OPERATIONS/TRAVEL**  
**02/29/08**

<table>
<thead>
<tr>
<th>Type of Account</th>
<th>Account Number</th>
<th>End Date</th>
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<th>$Actual Exp</th>
<th>%Exp</th>
<th>$Enc</th>
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<tbody>
<tr>
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<td>336350</td>
<td>12/31/08</td>
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<td>NAVIT (Elliot)</td>
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<td>PROGRAM REVIEW (Molina)</td>
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<td>PROGRAM REVIEW (Foster)</td>
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<td>0</td>
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<tr>
<td>PROGRAM REVIEW (Franklin)</td>
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<td>USDA (Elliot)</td>
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<td>Tech Prep07 (Elliot)</td>
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<td>09/30/08</td>
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<td>54%</td>
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<tr>
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<td>0</td>
<td>18,692</td>
</tr>
</tbody>
</table>
K. Administration

The Department Head, Dr. Jack Elliot, has provided the administrative leadership and decision making for the unit, following appropriate consultation with faculty, staff, and students. The Head works with the administrative associate and the business officer to administer the financial operation of the Department. Because the Department is relatively small, the committee structure is handled as a “committee of the whole” when possible. In addition, faculty members are identified to provide oversight and leadership for the various programmatic efforts. For example, Dr. Miller has provided leadership to the graduate program and Quint Molina has worked directly with the undergraduate teaching program. Frank Santiago has been leading the recruitment efforts and Dr. Knight has been coordinating the CDE day and other collaborative efforts on and off-campus. Dr. Franklin provides leadership for the induction program for the beginning teachers. All faculty is involved with student advising.
L. Diversity and Affirmative Action

The members of this unit strongly support and adhere to the affirmative action policies and principles of the University of Arizona. We endeavor to conduct well-publicized and open searches for all positions. When soliciting applications for faculty and staff positions, we specifically request assistance in encouraging applications for qualified minorities and women.

The Department’s efforts in this area are demonstrable. With the addition of Dr. Foster to the faculty and an active recruitment program, the number of females pursuing majors in the department has steadily increased. In addition, the number of students from ethnically diverse backgrounds is also rising. Frank Santiago serves a Recruitment Coordinator for the College and this Department, through his efforts a substantial increase in minority students enrolled in both the teaching preparation and agricultural technology management areas can be seen. Quint Molina brings both expertise in teaching and the added value of providing a Hispanic role model as a teaching faculty in the Department. Both Dr. Foster and Dr. Knight have gained national recognition for their work in this arena. As a professional growth service, Dr. Foster presents “Diversity Moments” at alternate Departmental meetings. These include a series of 5-10 minute activities designed to expand our views regarding change and diverse issues on campus.

Believing in the profession and striving to improve it through their efforts, this faculty proves that action and words are more powerful combined than apart. Dr. Foster’s research revolves around women and minorities in agricultural and extension education. From her research and avid interest, Foster developed a general education class for the University, AED 408 Diverse Issues in Contemporary Society. The class, now in its sixth semester, maintains a waiting list of interested students. In addition, this line of research spawned a graduated course, AED 607, Women in Academic Agriculture. The faculty in the Department of Agricultural Education seeks to involve all students in class and extra-curricular activities of the Department, regardless of their gender, ethnicity or socio-economic level. There is a strong believe among this faculty that each individual brings unique gifts and talents to the table and therefore enhances the learning experience of all.

Outside the classroom, Frank Santiago and Billye Foster serve as co-advisors for the USDA sponsored Minorities in Agriculture, Natural Resources and Related Sciences (MANRRS) chapter for the University. Through an ongoing development and recruitment regime, UA MANRRS has grown and become more active both locally and nationally. Our chapter hosted the MANRRS Region VI Workshop/Conference for students the past two years, bringing in students from three states and both community and four year colleges/universities. In addition, a AGTM sophomore served as the National Undergraduate Vice President for Region VI in 2007.

Dr. Foster continues to seek personal development opportunities to enhance her knowledge and understanding of cultures and differences among people as they relate to successful interactions both in the classroom and the workplace. She currently serves as Editor of The Agricultural Education Magazine where she has incorporated a regular column titled, Inclusion Corner, designed to bring ideas and practical applications regarding diverse student clientele to the hands of practicing teachers. In addition to her faculty responsibilities, Dr. Foster serves an administrative role as Special Assistant for Diversity to the College of Agriculture and Life Sciences Dean.

Through the teacher and educator outreach programs conducted by Kerry Schwartz and the Arizona Project WET program, over 500 program participants in the last three years self identified as Hispanic, Asian, American Indian, African American or other. Direct student programming reaches thousands of culturally diverse students each year. Extension programs have been delivered on the Hopi, Navajo, Tohono O’odham and Gila River Indian Community Reservations in the last three years.
### Annual Revenue Sources

<table>
<thead>
<tr>
<th>Revenue Type</th>
<th>Percentage</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
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<td>Publication Revenue:</td>
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<td>$10,088.00</td>
</tr>
<tr>
<td>Grants: Indirect Cost</td>
<td>.60%</td>
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</tr>
<tr>
<td>Summer Session</td>
<td>1.7%</td>
<td>$10,333.00</td>
</tr>
<tr>
<td>Gift: Misc</td>
<td>.50%</td>
<td>$3,500.00</td>
</tr>
<tr>
<td>Huber Scholar Match</td>
<td>2.1%</td>
<td>$12,233.00</td>
</tr>
<tr>
<td>Misc</td>
<td>4.4%</td>
<td>$26,970.00</td>
</tr>
<tr>
<td>Grant Budgets</td>
<td>66.2%</td>
<td>$407,897.00</td>
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</tbody>
</table>

This is approximately what we receive each year

<table>
<thead>
<tr>
<th>Account Type</th>
<th>Percentage</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>Budgeted State Accounts:</td>
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</tr>
<tr>
<td>CALS Temp List:</td>
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<td>$89,927.00</td>
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**Total**                                      |            | **$615,754.00** |
Annual Revenue Sources
## Annual Expenditures

### Regular Expenditures:

<table>
<thead>
<tr>
<th>Description</th>
<th>Percentage</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>Travel (in state &amp; out of state)</td>
<td>9.3%</td>
<td>$56,561.00</td>
</tr>
<tr>
<td>Supplies &amp; Materials</td>
<td>7.8%</td>
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<tr>
<td>Purchased Services/Consultant fees</td>
<td>1.3%</td>
<td>$7,907.00</td>
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<tr>
<td>Printing &amp; Reproduction</td>
<td>2.2%</td>
<td>$13,650.00</td>
</tr>
<tr>
<td>Utilities &amp; Communications</td>
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<tr>
<td><em>Student Worker Payroll:</em></td>
<td>9.4%</td>
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<tr>
<td><em>Employee Payroll:</em></td>
<td>1.7%</td>
<td>$10,862.00</td>
</tr>
<tr>
<td>Grant:</td>
<td>66.2%</td>
<td>$407,897.00</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td>$615,754.00</td>
</tr>
</tbody>
</table>

* Only payroll figures listed are not covered by state funds
Annual Expenditures

- Regular Expenditures
- Student Worker Payroll
- Employee Payroll
- Grant
N. Recruitment

The Department of Agricultural Education has a three tiered recruitment plan.

- Traditional classroom visits by the department’s recruiter as well as recruiter participation in high school and community college career fairs across the state.
- Use of student organization (the Jacobs-Cline Society) in recruitment efforts. Members are available to speak to students about the major and their college experiences. Members also speak to parents to address any concerns they may have. In Fall 207, the Jacobs Cline Society managed to secure 300 tickets to a home football game. Members invited students from across the state interested in majoring in Agricultural Education to travel to the University of Arizona and participate in a departmental information session as well as a “tail gate” party before attending the football game.
- Use of Technology and Research Initiative Fund (TRIF) allocation monies for use as stipends to encourage students to major in Agricultural Education. Approximately $40,000 is awarded in stipends to students every year.
O. Advisors

The advisors for the Department include: Dr. Jack Elliot, Dr. Glen Miller, Dr. Billye Foster, Dr. Jim Knight, Dr. Ed Franklin, Mr. Quint Molina, and Mr. Frank Santiago.
P. State Board of Education Program Review (2006)

The Department of Agricultural Education, College of Agriculture and Life Sciences, has been designated by the Arizona Board of Regents (ABOR) through the University of Arizona as the only Department in the state university system mandated to conduct formal instructional programs for the preparation of secondary and community college teachers of agriculture. Therefore, we are responsible for preparing teachers of agricultural education for secondary schools in the state of Arizona.

The Arizona State Board of Education granted the University of Arizona a five-year program approval for the Bachelor of Science in Agriculture Education, B.S. on April 23, 2007. This program approval is valid until April 23, 2012. The Department was the only one out of 21 teacher education units at the University of Arizona to receive this approval. (Please see Appendix 19 for Review and Letter).
Q. Summary Statement and Future Goals

The Department has experienced some tremendous success in many areas, especially those associated with the teacher preparation phase of the program. The faculty possess a rare combination of talents and professional expertise welded by a very powerful and consistent philosophy based upon service to the constituents of the program. As a Department, they teach an inordinate number of courses relative to other departments in the College of Agriculture and Life Sciences and the University of Arizona. The students rate them highly and are pursuing majors in the Department at higher numbers than ever before in the Department’s history. There has been excellent support for the Department from the College and so the program has experienced needed growth to handle the increased teaching loads.

Acknowledging the Department’s strengths are also its weaknesses, people in the department have studied the recommendations of the review team and believe the following strategies offer the best opportunity for achieving those recommendations.

- Develop a strategic plan that becomes delineated in terms of activities, a division of responsibilities and a calendar of events within the Department.
- Continue to support and encourage the excellent teaching, advising and service activities that have brought the Department to its present status.
- Improve the existing facilities and try to find more space for future growth and development.
- Recognizing that teaching is still Job #1, we will work to bring greater focus to the research program of the Department. This can be done with individual faculty efforts and with Department and College support. The goal will be to have the Department more recognized nationally and internationally for its research efforts and programs. The major focus of our efforts will be related directly to the Departmental vision and mission.
- Strengthen the ties with the Arizona Cooperative Extension.
- Promote and encourage a coherent international dimension in the Department to provide a global perspective to the curriculum, instruction, research, and faculty development.
- Appoint and involve an Advisory committee to assist the Department in looking forward, being responsive to its constituents, and improve all of its programs.

The following are the major items that will provide systematic follow-up and reporting:

- The strategic plan and Departmental Program of Activities (POA) will be developed and used as a guide through the entire process. Within the Departmental POA, a calendar of events will be created. Thus, the document itself will serve as a tool for assessing the progress on the items identified by the review process.
- In several cases, the actual creation of the product or action will demonstrate the progress towards the accomplishment of the goal. For example, the creation of a Departmental Advisory Council is already underway, and once it is organized and convened, it can serve to assist the Department in achieving the goals and activities identified, one of which is the creation of the Council itself. Another example will be the creation of a comprehensive recruitment plan for undergraduate and graduate students. The plan and the processes used to implement it will be a part of the reporting process.
- A follow-up process with graduates of the program will be re-instituted and will also provide necessary feedback for the future of the Department.
- Resolve the publishing issues associated with revised and newly created curriculum materials for secondary agricultural education teachers.
- Create and implement a plan for recruitment of outstanding graduate students for the Department.
- Re-emphasize the undergraduate recruitment efforts, including specific strategies to recruit students from under-represented populations.
• Initiate specific efforts to articulate and collaborate with the community colleges and other universities in Arizona.
• Develop a list of competencies for the Agricultural Technology Management program similar to the one that exists in the Agricultural Education program.
• Create a more systematic approach to the outreach efforts, especially as it relates to off-campus courses and workshops, of the Department.
• Establish a position focused on providing assistance with some outreach efforts, including recruitment of undergraduates and graduates, pursuing internship opportunities, offering major assistance with the annual CDE Day, and assisting with supervision of student teachers and new and returning teachers.
• Continue the development of courses and support systems for career and technical education teachers in Arizona.
• Keep abreast of the technological advances such that students will be afforded access to them as they participate in the programs of the Department.
• Improve the infrastructure of the Department to provide a place where people enjoy working and students enjoy studying and learning.