

**Mid-Term Review of
Five-Year Plan for Graduate
Programs in the
College of Agriculture and Applied Sciences**

**Submitted to the Office
Of Research and Graduate Studies
Utah State University**

Prepared by

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Overview

This reports the progress of the six academic departments in the College of Agriculture and Applied Sciences (CAAS) toward goals set in their five-year graduate programs plan submitted to the University in 2012. Based on reports from the individual departments, significant progress has been made by each department during the past two- and one-half year period on the goals set for their individual graduate programs. Our departments provided realistic goals in their five-year plans and have diligently sought to achieve these goals. As a college, we are proud of these efforts while acknowledging much remains to be done to fully meet and exceed the goals set for each of the departments.

The opening of the School of Veterinary Medicine (SVM) in 2013 represents a major milestone in the history of graduate education in the CAAS. The SVM raises the stature of the College, has injected significant new teaching and research resources into the College, and has generally enhanced all of our graduate programs. Other important events related to graduate programs during the past 2 ½ years in CAAS included merging or modifying degree offerings for efficiency and to align programs with the market for our graduates.

A continuing general concern in CAAS is the relatively low level of our graduate student stipends, especially at the Ph.D. level, compared to other institutions. While our departments have devised different methods to increase graduate stipends, the success in raising stipends to competitive levels remains mixed. Consequently, stipends remain an issue we must address if we hope to compete for the best students in each of our departments. Graduate student numbers are increasing for the CAAS as a whole but not in all of our departments. The departments not experiencing significant growth in graduate numbers have offered explanations and possible remedies, which appear accurate and reasonable. The addition of online opportunities for graduate degrees in our departments should help expand the number of graduate students in some programs.

Progress on Five-Year Plan by Individual CAAS Departments

The following discussion provides a synopsis of the individual reports provided to the Dean by CAAS departments. An overview of graduate programs in each department is provided, a list of goals, and a synopsis of progress toward these goals during the past two and one-half years.

Department of Animal, Dairy, and Veterinary Science

ADVS Graduate Program Description and Changes to Programs

ADVS offers M.S. and Ph.D. degrees in the Animal, Dairy, and Veterinary Sciences and in Toxicology. Students choose from a series of knowledge-based specializations in Animal Nutrition, Animal Molecular Genetics, Reproduction and Development, Animal Health and Disease, and Toxicology. Students specializing in these disciplines become highly trained in the areas of animal reproduction and development, animal nutrition, livestock and dairy management, animal health and disease, virology, toxicology, and molecular genetics. Graduate students also become skilled in the applications of molecular biology, genomics, metabolomics, proteomics and bioinformatics. For students choosing careers in production animal agriculture, ADVS offers an Animal and Dairy Management degree option.

Management options prepare students for the challenges facing the animal industry and commodity groups in the 21st century.

During the past three years, ADVS has streamlined offerings within its graduate programs and also realigned programs (Toxicology) to better meet the needs of graduate students. In 2011, three degree programs (Animal Science, Dairy Science and Bioveterinary Science) were consolidated into a single degree program. Prior to this the three separate degree programs also offered various specializations and were spread out over 20 - 30 students. This resulted in lowered-enrollment numbers in each degree program and specialization. Further, the Bioveterinary Science degree program was often confused with the undergraduate Bioveterinary Science emphasis. The merger of three degree programs brought them under a single umbrella for the MS and Ph. D, degree programs with five specializations: Animal Management (Plan A and B), Animal Health and Disease, Animal Molecular Genetics, Animal Nutrition, and Reproduction and Development. The Animal Management specialization is management based and therefore is only offered as a MS program of study.

Prior to 2013, ADVS was one of several departments participating in offering the Interdepartmental Toxicology Graduate Program. This program consisted mostly of ADVS students and was primarily taught by ADVS faculty. As a result, the three deans participating in the old Interdepartmental Toxicology graduate program (CAAS, Natural Resources, and Science) recommended that ADVS reactivate the Toxicology program and that it be housed solely in ADVS. The faculty of ADVS accepted this recommendation under the conditions the program be restructured and, beginning in 2013 the Toxicology MS and Ph. D. degrees are now offered only in ADVS.

ADVS Progress on Initiatives Addressed in the Five-Year Plan

The report from ADVS provided a list of goals specified in their five-year plan and indicated progress made on each of the goals discussed below.

1. Financial support of graduate students in the form of tuition support, graduate assistantships, and funds for student travel to conduct or present research.

At the beginning of the five-year plan, ADVS offered eight research assistantships (M.S. \$13,000 and Ph.D. \$16,000 with subsidized health benefits). Today, the number of ADVS research assistantships has increased to 11 and a new ADVS Doctoral Research Fellowship (DRF) has been established (\$18,000 with subsidized health benefits). Students receiving the DRF also qualify for a tuition award. Additionally, ADVS and the new School of Veterinary Medicine (SVM) offer a resident program in Pathology/M.S. or Ph.D. Students in this program must have a Doctor of Veterinary Medicine (DVM) and prepare to be board-certified in pathology while completing either an M.S. or Ph.D. The stipend for the DVM/MS/Ph.D. program is \$32,000 with subsidized health benefits. The student also qualifies for a tuition award. Therefore, ADVS and the SVM have made significant progress in increasing graduate student assistance. The Department also encourages the research faculty to include graduate student stipends as a budget item when permissible in their grants.

2. Financial support to aid in recruitment of top graduate students to the limited number of open positions.

In 2014, ADVS successfully competed with the other five departments in the CAAS for a Presidential Doctoral Research Fellowship (PDRF) offered by the Office of Research and Graduate Studies (RGS). The student for this PDRF has now been recruited. A second PDRF was also offered to CAAS. The applicant from ADVS had the strongest academic record, but the

fellowship went to another department mainly because ADVS had already received a PDRF. RGS was approached on this issue and it was agreed between RGS and ADVS that a 50/50 match totaling \$20,000 would be offered to a student for four years similar to a PDRF. Another student was highly recruited and brought to campus during the interview process and chose to enter a Ph.D. program in ADVS. A first time ADVS Doctoral Research Fellowship was made available in 2013 and a highly qualified and highly recruited student was offered the fellowship. This student was brought to campus during the recruiting process. Another top student was being recruited into a Ph.D. program in ADVS and the major professor could offer only \$16,000/year from an extramural grant. The Department augmented that amount by \$4,000 and the student accepted the offer to come to USU (she had been highly recruited by other universities). Altogether, ADVS recruited four outstanding graduate student scholars in fulfillment of its initiative to recruit top graduate students.

Also, it is now Department policy that all extramural grant applications, where allowable, must factor graduate student support into the budget. In addition, the Department Head has informed the research faculty that when possible the Department will augment assistantships if it results in matriculating graduate student scholars.

3. Maintain a critical mass of active researchers in topic areas of the Department. Some core areas are currently deficient in personnel, namely the animal nutrition program and animal/dairy management.

During the past three years, ADVS has successfully hired six highly-qualified faculty members to new positions primarily within the USU School of Veterinary Medicine - Drs. Mason, Meyer, Meyer-Frica, Rutigliana, Campbell, and Vanderwall. All have substantial research appointments except for Dr. Vanderwall who was appointed ADVS Department Head in September 2014. Dr. Vanderwall will still maintain an active research program and continue to mentor graduate students. ADVS anticipates these new faculty members will eventually boost the number of graduate students in ADVS by 25% and thereby grow the program as specified in the five-year plan. Recently a job description was posted for an instructor/researcher in animal nutrition with emphasis in genomics and epigenetics. This will also fill a critical need stipulated in the five-year plan.

4. Maintain current graduate course offerings, and supplement with additional advanced courses (especially in the molecular sciences) to graduate students.

The following School of Veterinary courses (VM) were cross-listed for ADVS graduate students and for students from other departments such as biology.

Vet Microscopic Anatomy (VM 7510 - ADVS 7510)

Vet Physiology I (VM 7519/ADVS 7519)

Vet Physiology II (VM 7520/ADVS 7520)

Vet Immunology (VM 7534/ADVS 7534)

Vet Virology (VM 7535/ADVS 7535)

Vet Bacteriology (VM 7536/ADVS 7536)

General Pathology (VM 7545/ADVS 7545) - 2 hour course without lab for graduate students.

5. Emphasis throughout graduate student program on career counseling.

ADVS has appointed a faculty member (Dr. Lee Rickords - Graduate Programs Coordinator) to advise graduate students on career opportunities. Dr. Rickords is well-informed on opportunities

in genetics, reproduction and molecular biology. In other areas, he may direct students to other faculty members in ADVS or other departments for the guidance they need.

6. More structured application of directed mentoring strategy (via advisor and dissertation committee).

ADVS will continue to include students as authors on refereed scientific publications, continue with an excellent seminar series that brings outside scientists to campus to interact with our students, and continue to support a high level of student involvement in research presentations at local/national/international meetings. The Department has developed an accountability tracking system that enhances student progress, updates and provides online access to the ADVS Graduate Student Handbook, enhances accountability for faculty mentorship, established an annual ADVS Graduate Student/Mentor Symposium that enhances student-faculty interaction and education, and has developed a foundational research course that provides ADVS graduate students with a basic understanding of best-practices for working in nationally-competitive research laboratories. These measures will increase faculty accountability for graduate student mentorship and will provide students with a clearer pathway to completion of their degree program.

Overall Accomplishments for ADVS

In the last 2.5 - 3 years, ADVS has made significant improvements in its graduate programs (e.g., more assistantships, improved website, successfully recruited more top students, hired additional faculty, currently filling a critical faculty position in Animal Nutrition, offers more graduate level courses to students in ADVS and other departments such as Biology, and has taken on a greater administrative role in mentoring and monitoring student progress). Students entering an ADVS degree program complete their program of study and become employed in professional and academic positions. Because of the various initiatives that have been put into place, new graduate student enrollment (based on fall semester counts) is now on the increase: 2012 = 5, 2013 = 4, and 2014 = 12).

Department of Nutrition, Dietetics, and Food Sciences

NDFS Graduate Program Description and Changes to Programs

The Department of Nutrition, Dietetics and Food Sciences (NDFS) offers four graduate degrees including the Ph.D. in Nutrition and Food Sciences, MS in Nutrition and Food Sciences, Master of Dietetic Administration (MDA) and Master of Food Safety and Quality (MFSQ). NDFS's five-year target was to double the number of graduate degrees awarded in the Department. This was to be done largely through increased enrollment into our professional degree programs – the MFSQ and MDA. NDFS also set a goal to increase the number of MS and Ph. D. graduates by 20% over the five years covered by the Plan.

NDFS Progress on Initiatives Addressed in the Five-Year Plan

The report from NDFS provided a list of goals specified in their five-year plan and indicated progress made on each of the goals discussed below.

1. **Goal extrapolated from our five-year plan:** Expand the number of students in the Master of Food Safety and Quality (MFSQ) (Plan B or C).

This program is targeted toward students interested in gaining further expertise in food safety and quality. Many of the required courses can be taken online or as independently-driven experiential learning to accommodate students who may already be in the workplace. Because we no longer have Plan C degrees, the MFSQ is now offered as a professional degree. At this point, NDFS needs to consider whether or not to revise this goal or to improve recruitment to try to meet it. There are at least three ‘challenges’ with increasing numbers in the MFSQ including:

- a. The intent of offering the degree was for people to continue to work while they earned the degree. This implied offering mostly online courses for the degree. Two faculty members are handling most of the MFSQ courses and have insufficient time to develop the necessary online courses to support the degree.
- b. On-campus workshops are a significant part of the MFSQ. Presently, these workshops have to be self-supported. This has proven to be unsustainable. To regularly offer the workshops requires some outside financial assistance from CAAS or the Department. NDFS has decided the benefits of the workshops, including NDFS’s publicity and service to the food industry, outweigh their costs and will continue to offer the workshops.
- c. The candidates for the MFSQ are often already in industry but still must meet the same GRE score standards as other newly-entering graduate students. People in industry have an understanding of what their particular job requires but often find it difficult to obtain a sufficiently-high score on the GRE to be accepted into the program.

2. **Goal extrapolated from our five-year plan:** Focus recruitment efforts on regional recruitment from sister institutions including Brigham Young University (BYU) Idaho, BYU main campus, and Idaho State University.

NDFS needs to simply recruit the best students regardless of their undergraduate institution. NDFS has a high proportion of domestic students in their graduate programs compared to foreign graduate students, but their domestic students are from across the United States and not just the region.

3. **Goal extrapolated from our five-year plan:** Initiate mass emails to specific populations like those with high GRE scores; which list can be obtained through Educational Testing Services.

NDFS is just starting to use the GRE database for recruiting purposes. Having RGS assistantships helps to plan for and recruit additional students as opposed to waiting until a particular faculty member obtains a grant to support additional students.

4. **Goal extrapolated from our five-year plan:** Prepare easy to follow “graduate student folders” containing checklists of department requirements and copies of the forms needed for graduate studies and graduation.

This has been found to not be needed due to the use of a new program called Degree Works and an improved website for students. NDFS has also initiated more graduate

faculty training and a fall social and graduate student training session which helps students understand and follow the program.

Overall Accomplishments of NDFS

NDFS has already met or exceeded the majority of its goals specified in its five-year plan. Although the number of graduate students in NDFS fluctuates from year-to-year, the total number of Ph. D. students in 2014 was 20%, higher than in 2011 which was the goal for the entire five-year period. The increase in the number of MS students was about 17%. The increase in the number of students seeking a professional Master's degree was very good for the MDA and but not good for the MFSQ. The goal was to have a total of 15 MDA students by the end of the five-year period (started with four at the time the graduate plan was submitted), or an average increase of 2.4 students per year. During the past two years, 13 MDA students have been admitted each year and the program currently has 18 students. Seventy percent of MDA students complete in one year, and almost 100% complete within two years. NDFS is not on track to meet the goal of significantly increasing MFSQ students and likely reasons are provided above.

NDFS reports that the RGS has helped in several ways. This includes providing a sufficient number of tuition waivers and, more recently, the RGS assistantships that supply significant funding for graduate students for departments fortunate enough to obtain them. This assistance has facilitated NDFS's recruitment efforts and made it possible to recruit and choose the most outstanding students selected by a graduate faculty committee as opposed to individual faculty selecting students as was done in the past.

Department of Plant, Soils, and Climate

PSC Graduate Program Description and Changes to Programs

During the past three years, the Department of Plants Soils and Climate (PSC) has completed three major changes to its graduate programs. First, the Biometeorology program was renamed Climate with both M.S. and Ph.D. degrees now being offered in Climate Science. Second, new graduate courses in Climate Science have been developed as a result of this change. Third, the Toxicology degree and plan-C M.S. degree in Soil Science have been dropped by PSC. No additional changes to our graduate degree program are planned. However, there is an undergraduate degree in Climate Science that has been proposed.

PSC Progress on Initiatives Addressed in the Five-Year Plan

The report from PSC provided a list of goals specified in their five-year plan and indicated progress made on each of the goals discussed below.

1. Graduate Student Numbers

PSC's graduate student numbers have increased by 20% since 2009 but have held steady since 2012 across all three of their degree offerings (Ph.D., M.S., and MPSH). They report that graduate student numbers are constrained primarily constrained by availability of

funding. As a result, significant increases in graduate student numbers in PSC are not expected in the next two years unless grant funding allows it.

2. Number of Graduate Degrees Awarded

Graduate degrees awarded by PSC have held steady at about 1-2 Ph.D. degrees per year and 5-10 M.S. degrees per year. The number of MPSH degrees awarded has also averaged about 1-2 per year. However, the MPSH is being prepared as a fully online program and as a result PSC anticipates that more MPSH degrees will be awarded each year.

3. Graduate Applications

Graduate applications within PSC have averaged around 30 per year; increasing by 1.3 applicants per year in the last five years. We are pleased to see this number increasing slightly. Looking at all graduate student applications, some of which were incomplete in terms of GPA and GRE scores, a fitted linear trends shows a slight growth in the GPA of PSC applicants between Spring 2009 and Fall 2014 but a slight decrease in GRE scores for PSC graduate applicants during the same time period. PSC does not anticipate the number of its graduate student to increase significantly due primarily limitations on available funding.

4. Recruiting

PSC's five-year plan proposed improving the graduate education sections of their website. These improvements were made through the addition of graduate student videos developed by graduate students during a video contest where they talked about either their research or personal interests. They also improved the visibility of their graduate student scholarships and assistantships both online and through a poster showing past award winners and sponsors. Ongoing work is aimed at raising the visibility of the MPSH degree program and this degree will ultimately be offered online. A giant pumpkin-growing contest in 2013 used social media to promote and advertise PSC's graduate program to undergraduates. Information about specializations within all degree programs was updated on the PSC website. A graduate student brochure was also developed and circulated at recruiting events.

5. Management

Key goals set by PSC for graduate program management included: 1) ensuring all PSC graduate students are appropriately enrolled in health insurance and have their course credits pre-planned to facilitate receiving tuition awards and 2) tracking grants written, papers published, and presentations given by graduate students.

6. Mentoring

Key goals set for graduate student mentoring were: 1) reduce credit requirements for

Ph.D. graduate programs so as to align requirements to similar programs around the country. The Department had planned to conduct exit interviews with graduate students but this became a logistical challenge because students finish and exit at different times. They are considering other options to obtain relevant data on our graduate student's experience in PSC. PSC had proposed a day long training session but RGS has now implemented training sessions for all graduate students that, to some degree fulfill, the goals PSC had in mind.

7. Funding

One key goal for graduate funding in PSC was to budget tuition support into external grant funds where possible. This has been implemented in most of the proposals written recently. PSC also planned to allocate funds for either clerical or faculty time to manage graduate student record keeping and other activities required for their graduate programs. An undergraduate student has provided support for some of this work.

Overall Comments and Suggestions from PSC

PSC reports it has benefitted from the efforts of the RGS to initiate and motivate this self-study opportunity. They appreciate the work of RGS in campus-wide resources such as for graduate student training and also the recently-available metrics on graduate student statistics. PSC reports these numbers were essential for successfully tracking the indicators needed for the graduate program self-study. The PSC report suggests that RGS make data from Digital Measures available for tracking key campus-wide information on graduate student activity. Examples might include data for graduate student involvement in research, teaching, and creative endeavors.

Department of Applied Economics

APEC Graduate Program Description and Changes to Programs

The Department of Applied Economics (APEC) reports having limited funding for graduate students; especially for Ph.D. students. As a result, the Department has elected to admit a Ph.D. student cohort only every other year. Doing so allows the Department to maintain the Ph.D. program while continuing to provide sufficient resources to support their M.S. programs. It also ensures they have a large enough entering Ph.D. cohort to ensure an adequate number of students in Ph.D. courses they offer. Approximately one-half of APEC's Ph.D. students are funded with assistantships with the other one-half being self-supported. However, even this strategy does not permit assistantship levels in APEC to be competitive with other programs either nationally or regionally. APEC reports they are considering either increasing assistantship for fewer entering students or possibly lengthening the interval between entering cohorts even more.

APEC reports that assistantship levels at the MS level are also not competitive. However, they also report that about half of their MS students are willing to self-support themselves in

the program. As a result, they are able to attract good students into the MS program but these students are primarily regional-based.

APEC's MS programs include a Masters of Applied Economics (or MAE, which is a terminal Plan C program), a MS in Applied Economics, and a MS in International Food and Agribusiness. In addition to these programs they also offer an "International Business Administration in Agribusiness" (or IMBA) in conjunction with the Royal Agricultural University at Cirencester, England. The advantage of these Master's-level degree programs is that they require many of the same core courses. This allows APEC to further leverage their resources.

The primary change in APEC's graduate programs during the past 2 ½ years has been the implementation of the MS in Economics and Statistics and the MS in International Food and Agribusiness. APEC has dropped the Plan C MS in Applied Economics as requested by the RGS. The other significant change made by APEC to their graduate programs was to drop the credit-hour requirements to 30 for the three MS degrees (with a bachelor's degree), 33 for the M.A.E degree (with a bachelor's degree, and 70 for the Ph. D. degree (with a bachelor's degree), or 50 for the Ph. D. degree (with a Master's degree).

APEC is considering putting a Plan C Master's degree online with an emphasis in Natural Resource Economics. This would address the needs of federal and state agency personnel for a graduate additional degree for job advancement and training in natural resource issues.

APEC Progress on Initiatives Addressed in the Five-Year Plan

APEC reports already achieving all of the goals they specified as part of their five-year plan. This included initiating a MS in Economics and Statistics as well as the MS in International Food and Agribusiness. The BS program in Natural Resource Economics has also been implemented and is a natural steppingstone into the MS in Natural Resource Economics. They also report being moderately successful in increasing the entrepreneurial activity of some faculty members in the APEC Department in terms of applying for and acquiring external contracts and grants.

There are an increasing number of degree-seeking graduate students applying to APEC. This was also one of their goals specified in the five-year plan. APEC reports it expects enrollment numbers to hold relatively constant over the next five years. They anticipate this will be the case because of (1) an improving national economy and (2) a limit on their ability to advise large numbers of additional graduate students due to the relatively small number of faculty members in the department. Even with the problems associated with assistantship funding reported above, APEC reports they are slightly ahead of where they expected to be when they originally prepared their five-year plan. APEC reports not expecting the number of degrees awarded to change much over the next five years for the reasons identified above.

Overall Accomplishments of APEC

As indicated above, APEC has been able to achieve all of the goals originally spelled out in their five-year plan for their graduate programs. Even with problems related to funding graduate student assistantships, the number of APEC graduate applications increased as we moved through the worst part of the economic decline. They anticipate a slight drop in the number of applications as economic conditions continue to improve. They remain committed to supporting the Ph. D. program and are seeking methods to increase the funding for graduate students. Their MS programs have remained strong with regionally-based students.

The School of Applied Sciences, Technology, and Education

ASTE Graduate Program Description and Changes to Programs

The School of Applied Sciences, Technology, and Education (ASTE) currently offers three Master's degrees: Agricultural Systems Technology (AST MS), Technology and Engineering Education (TEE MS) and a Career and Technical Education (CTE MEd). The School also supports a doctoral degree emphasis in Technology and Engineering Education in partnership with the School of Teaching Education and Leadership (TEAL).

In July of 2013, the Department hired a faculty member, Debra Spielmaker, to teach several courses in the new MEd program, coordinate the graduate programs in the school, serve as the temporary advisor for all graduate degree seeking students, and to provide leadership in the area of marketing and recruitment.

In the past two years, several changes have been made to improve the School's graduate programs and to meet the degree program assessment plans. They are the following:

1. The graduate faculty has met at least twice per semester to discuss programming, schedules, scholarships, and assistantships.
2. Procedures for acceptance into department graduate programs have been developed and communicated to the faculty.
3. Procedures for supervisory committees and student programs of study have been modified for efficiency and consistency.
4. Core course requirements have been modified to take advantage of expertise in the area of research methods offered by the psychology department, thereby freeing up department faculty to mentor graduate students.
5. All graduate course syllabi were reviewed by the faculty and correlated with program outcomes documented in the MEd and M.S. degree assessment plans. Gaps were identified and syllabi were modified to increase required research reading, writing, and to provide more opportunities for student collaboration on course projects.
6. The graduate degree website has been updated for accuracy related to course offerings.

ASTE Progress on Initiatives Addressed in the Five-Year Plan

ASTE provided a report of activities related to the goals specified in their five-year plan and indicated progress on these goals as provided below.

1. Marketing and Recruitment

ASTE reports that marketing and recruitment have been a continual area of emphasis for the School. The MEd has received much attention, as it is a new degree. In 2013, the MEd degree was marketed at a national conference of educators. In 2014, information about the MEd was publicized in a national journal and advertised in three targeted national e-blasts. This exposure resulted in over 50 inquiries about the program. Electronic marketing requires individuals receive multiple exposures to the marketing campaign and the Department will continue to advertise with this medium for the next two years to determine its effectiveness. Additionally, all three degrees were marketed through two educational conference presentations, and faculty exhibited/marketed the degrees at five state-level educational tradeshows.

2. Graduate Student Numbers

ASTE reports that the MEd is one of only five graduate degrees offered completely online at USU. The MEd began in the fall of 2013 with five students. The program has grown to now have 19 students. The goal of the program is to have 40 students in the MEd program within five years (Fall of 2018). ASTE is on target to meet this goal. The MEd program is a professional degree and has been designed to meet the needs of practitioners in the area of Career and Technical Education. Previously, the AST and the TEE degrees were the only option for CTE teachers desiring a related master's degree. The MS degrees required on-campus attendance, which was a barrier for these students. Since the introduction of the MEd, the AST and TEE numbers have remained fairly constant. However, graduate student numbers in the School as a whole have nearly doubled.

3. Number of Graduate Degrees Awarded

To date ASTE's graduate student numbers have remained stable for the MS degree. However, this year ASTE estimates that eight students will graduate with a MEd degree (their first graduating class). Based on the number of students in the program, and anticipated enrollments in this degree as it continues to grow, the School believes it will see a significant increase in graduate degrees awarded over time.

4. Graduate Applications

There has been no growth or decline in the number of applicants for the AST and TEE MS program. ASTE reports that this was anticipated given the addition of the MEd program, but there has been a near doubling every semester in the number of graduate student applications. This type of growth met the expectations ASTE laid out in their five-year assessment plan. Because the Internet is the primary method students use to investigate and receive information about graduate degree programs, ASTE will be

revising and updating their website for graduate student recruiting purposes. They will also continue to advertise in targeted CTE publications and participate in related conferences and tradeshows. They report that while electronic advertisements reach a large number of students, face-to-face presentations have resulted in more applications to their programs.

In addition, the ASTE faculty has determined to support the growth in the non-thesis MEd degree. ASTE's current graduate student numbers provide a student-to-faculty ratio that can support quality research and ensure a positive mentoring experience for their graduate students. Recruiting efforts planned by ASTE include identifying USU undergraduate students working as Extension interns to invite them to investigate the ASTE program and assistantship opportunities. ASTE also plans to improve their website with a unified college design, videos of recent graduates, and search engine optimization that should also improve the program's visibility. Finally, beginning in the Spring of 2015, all of the MS required core courses will be made available online and will provide more flexibility for potential students.

Future Plans for ASTE Graduate Programs

An R-401 has been submitted to the Utah Board of Regents to divide ASTE's AST degree into two separate degrees, each one reflecting a current emphasis area of this degree. If approved, the AST MS would be dissolved and students would enter the Agricultural Extension and Education MS, or the Family and Consumer Sciences Education and Extension MS degree programs. This degree restructuring and resulting name changes would: (1) be more congruent with degrees offered in these areas at other institutions, regionally and nationally,¹ (2) as most institutions use similar titles, these proposed titles are what potential students use when searching for degree offering institutions; (3) these titles are more descriptive of the course work and program that they have been in the past, (4) these titles are reflective of the type of employment graduates are prepared for upon graduation, and (5) marketing and recruiting with these more descriptive titles allows prospective students to easily recognize the graduate programs. ASTE believes these changes will result in a greater number of graduate applications to their programs.

ASTE is also seeking to add an agricultural education emphasis to the Curriculum and Instruction specialization of their TEAL Ph. D. program. This would be similar to their current Ph. D. emphasis in TEE. Because there are few Ph. D. programs in the West, this may increase the number of graduate students in this program.

¹ Based on Internet searches, all but one western state (WA) offers a degree using "education" in the title for similar agricultural education and extension degrees. In addition, all states offering a graduate degree in the area of Family and Consumer Sciences Education do not use agriculture or systems in their graduate titles;

LAEP's Graduate Program Description and Changes to Programs

At the outset of the Five-Year Program Review, the Department of Landscape Architecture and Environmental Planning (LAEP) had not yet begun overseeing the MSBP program. Consequently, the initial report was virtually silent on that program. LAEP is now in its second year of offering the MSBP following hiring a program director. The uniting of the MLA and MSBP has brought together site-scale design and landscape-scale planning - a reconnection with tremendous potential. Though semi-divorced since 2000, these programs logically align and strengthen one another, as well as provide opportunities for numerous collaborations (e.g., with WATS, APEC).

The shift to joint oversight of the MSBP with ENVS is progressing. The three-year Master of Landscape Architecture (MLA) continues to gain strength but, like peer programs nationally, has found the recruiting of top students to be the number one concern. The MLA's reaccreditation review is in 2017. A 2015 curriculum retreat is planned to define how the degrees can be more mutually aligned and beneficial. Additionally, the potential for additional graduate degrees, including a doctoral degree, will be studied.

LAEP's Progress on Initiatives Addressed in the Five-Year Plan

The report from LAEP provided a list of goals specified in their five-year plan and indicated progress made on each of the goals as discussed below.

1. Graduate Student Numbers

LAEP's graduate student numbers have decreased slightly from the average cohort size seen in 2008. This trend is somewhat exaggerated due to unusually large classes in 2008-2010. The addition of the MSBP program has added to overall graduate student numbers, though that program has experienced an impact resulting from the program's founder retiring. Nationwide trends reported by peer programs indicate recruiting is a priority in most schools. Marketing, followed by funding sources, are the primary constraints to increasing student class sizes.

2. Number of Graduate Degrees Awarded

Graduate degrees conferred by LAEP dipped corresponding with smaller class sizes from 2010 forward. This trend, with 2-4 MLA and 1-3 MSBP graduates annually, was significantly influenced by cohorts during the recent recession years finding minimal job openings, and experiencing declining motivation to complete their theses. This trend has been reversed, with job-availability, post-degree hiring, and degree completion rates increasing annually. Market reports indicate no decline in job openings as the land development sector continues to improve. The addition of a Graduate Handbook (including a 'thesis roadmap'), a required Research Methods course, along with publicly scheduled thesis proposal defenses have contributed to

improving degree completion. The MSBP has not yet adopted these items but is to be reviewed in 2015.

3. Graduate Applications

Graduate applications within LAEP have averaged 25-35 per year. To increase numbers, LAEP began utilizing GRE search services in 2013 that the RGS office provides. The almost universally-reported rise in Asian applicants to peer programs in North America is also reflected in the applicant pool to LAEP. As many as two-thirds of LAEP's graduate student applicants hail from China or other Asian countries. Improved program awareness through marketing and recruitment is needed.

4. Recruiting

The primary goals for LAEP's recruiting are 1) increasing cohort diversity and 2) increasing applicant numbers. The former goal has seen acceptable progress, while the latter goal needs more progress. A recruiting committee was formed, and SOP's have been created for recruitment. This same committee will be creating a number of recruiting documents in 2015. The first, focusing on the MSBP, was created in 2014. Increased offers of funding support and support for campus visits are offered to top applicants. Improved national visibility has resulted due to placement of LAEP students in awards and competitions. The Department also offers several support services that few, if any, peer programs provide. Since 2009, LAEP's ranking has improved 1-2 places among the most affordable accredited programs. The distribution of InSites Magazine has grown, and will be increased to over 1,000 in 2015. The LAEP web site is in need of a complete overhaul, with a professional design aesthetic being critical in the new version.

5. Management

LAEP's management goals have generally seen good-to-very-good progress. Increased rates of scholarship, faculty involvement with the newly adopted MSBP, and hiring of doctoral-holding faculty have been areas of success. Greater participation in national competitions and/or publication outlets, along with partnering with ENVIS on MSBP management, need further progress. To aid students in garnering greater external validation of research and design work, LAEP has offering a course focused on entrepreneurship, which guides students in preparing their work for submission to inter/national awards and competitions.

6. Mentoring

LAEP's mentoring goals have generally seen acceptable or good progress. Increased rates of mentoring by practitioners and faculty have resulted from creation of the Utah ASLA Professional Mentor Program and LAEP's new internship/career mentor faculty assignment. Increased training and involvement by LAEP faculty within the MSBP is still needed. Similarly, insufficient data have been collected to gauge the increases in

internships and post-graduation employment. The latter is a specific assignment of the internship/career mentor. A curriculum retreat in 2015 will study means by which the two programs can provide more effective student experiences, including choices of emphases, as well as new degree options.

7. Funding

LAEP faculty have continued the increase in overall and per faculty funding, and have improved graduate funding support as a result. Recent figures provide tentative signs that LAEP's tenure-track faculty are competitive with peers schools nationally. The Department has budgeted increased financial support for recruiting top applicants, and has provided means to stabilize funding for assistantships. Increases in graduate scholarships has been very good, thanks to donor support from the 75th Anniversary Campaign.

Overall Comments and Suggestions from LAEP

Outreach, awareness and funding of graduate students, along with integration/expansion of the MLA and MSBP are chief priorities at this midpoint in LAEP's graduate review. RGS support has assisted with some of those areas. An ongoing area of concern is the exclusion of the MLA degree from RGS support for MS Plan A degrees. This delineation for which degrees are research-focused and which are not is not reflective of the scholarship outputs of MLA Plan A theses, nor the research of faculty overseeing the degrees. Improved tracking and reporting of career placement is an important need for demonstrating the value of graduate degrees.

Summary

The CAAS has a strong focus on graduate student education because graduate students provide critical support to faculty-driven research programs. The quality of research programs in the College is closely-tied to the quality of the graduate students we recruit and train. As a result, recruiting high-quality graduate students must be a priority for the College. We have made some important progress in improving the quality of our graduate students, especially through resources provided through the RGS to help recruit excellent students. An example would be the excellent students recruited recently by ADVS with the help of RGS and CAAS funding and cooperation. But, we need to pick up the pace in providing even more resources for graduate students to stay competitive in some of our programs in the College as a whole.

Progress made by our six departments on the five-year graduate program plans is evidence of strong commitment by our faculty to improving graduate education in the CAAS. We anticipate placing additional emphasis on funding graduate students with grant funds as a method to keep graduate student stipends competitive. Our excellent new facilities and strong faculty will also aid in our efforts to recruit the best graduate students. A number of our departments are also planning to offer master's degrees online. This will help recruit larger

numbers of graduate students into the College and also potentially expand the revenue base to enhance funding for Plan A graduate students. We encourage the continued support of RGS in providing resources, both independently and in partnerships with colleges and departments, to support the recruiting of top-quality graduate students. These types of partnerships have been extremely beneficial in helping our departments remain competitive in graduate student recruitment.