

# TEXAS A&M PLANT BREEDING BULLETIN -- November 2012

**Our Mission:** Educate and develop Plant Breeders worldwide.

**Our Vision:** Alleviate hunger and poverty through genetic improvement of plants.

## M.S. and Ph.D. in Plant Breeding via Distance Technology Approved

We reported in our July 2012 Texas A&M Plant Breeding Bulletin that our proposal to deliver the Master of Science degree in Plant Breeding via distance technology was approved by the Texas Higher Education Coordinating Board. Today, I'm pleased to report that our proposal to delivery the Ph.D. degree in Plant Breeding via distance technology has been approved by the Texas Higher Education Coordinating Board and will become fully operational with the Spring Semester 2013. Distance students can apply and register as distance education students and receive an M.S. or Ph.D. in Plant Breeding without residence on campus at College Station. This action also makes possible any number of arrangements where the M.S. or Ph.D. student can never come to campus or spend a summer or some other length of time on campus.

The M.S. in Plant Breeding non-thesis option (NTO) requires a minimum of 36 approved semester credit hours past a B.S. degree plus a report and the defense of that report on an internship or some other graduate advisory committee approved activity. It does not require original research that results in a thesis.

The M.S. in Plant Breeding thesis option (TO) requires a minimum of 32 approved semester credit hours beyond a B.S. degree and a written thesis on original research directed by the student's graduate advisory committee. The unique requirement to obtain the M.S. in Plant Breeding TO is that there must be a Ph.D. scientist at the student's location who can qualify for membership in the Graduate Faculty at Texas A&M University and serve as co-chair of the student's graduate advisory committee. The student also must have access to research facilities and have a commitment by his/her employer to provide such facilities for the conduct of original plant breeding research.

The Ph.D. degree in Plant Breeding requires a minimum of 64 approved semester credit hours beyond an M.S. degree and a written dissertation on original research directed by the student's graduate advisory committee. As with the M.S. TO, a Ph.D. scientist must be available at the student's location that can qualify for membership in the Graduate Faculty at Texas A&M University and serve as co-chair of the student's graduate advisory committee. The student also must have access to research facilities and have a commitment by his/her employer to provide such facilities for the conduct of original plant breeding research.

All requirements for these degrees are the same as those found in the Graduate Catalog at <http://catalog.tamu.edu/>, <http://soilcrop.tamu.edu/graduatedegrees.html>, or <http://hortsciences.tamu.edu/graduate-programs/>, with the exception that the on-campus residence requirement is waived.

All courses and requirements other than physical presence on campus at Texas A&M University are the same as for on-campus students. All courses are the same as those taken by on-campus students and taught by the same professors but delivered via the internet. Graduate advisory committee meetings and all conferences among co-chairs, committee, and student can be via electronic media.

Individuals interested in the M.S. or Ph.D. in Plant Breeding distance program should:

- [1] Contact either Wayne Smith, Associate Department Head for Soil and Crop Sciences, Mike Arnold, Associate Department Head for Horticultural Sciences, or LeAnn Hague, Distance Education Coordinator in Soil and Crop Sciences, to discuss the application process (contact information below);
- [2] Apply for admission through the Apply Texas on-line application process (<http://ogs.tamu.edu/prospective-students/admissions/applying-to-graduate-school/>);
- [3] All admission requirements, including GPA, GRE, and English Proficiency for non-U.S. citizens, are the same as for those applying for admission for on-campus programs.

The following information is available in a downloadable format at <http://soilcrop.tamu.edu/graduateprogram.html>

# *Distance Education in Plant Breeding*

As the global population increases, providing food, fiber and fuel to meet growing demand has become a significant challenge. We are one of the top tier U.S. universities training future plant breeders to meet this challenge and have expanded our effort through our Distance Education Program in Plant Breeding. We seek to alleviate hunger and poverty through the genetic improvement of plants while educating and developing plant breeders worldwide.

## *Overview*

This program is an extension of the existing Plant Breeding programs offered by the Department of Soil and Crop Sciences and the Department of Horticultural Science at Texas A&M University. We offer the M.S. and Ph.D. degrees completely at a distance to students unable to study on-campus in a traditional setting. This program is designed for individuals employed in private industry, CGIAR centers, government agencies, non-government organizations, and other agriculture professionals who need and desire additional knowledge and training in plant breeding but cannot relocate to a university campus. Distance Education students will take advantage of the same curriculum available to on-campus students with identical course content and professors. Our unique program is designed to deliver a high quality plant breeding education to students across the globe.

## *Available Degrees*

### **Master of Science in Plant Breeding (Non-Thesis Option)**

#### *Description*

The non-thesis option M.S. in Plant Breeding requires 36 hours of coursework, four of which are an internship activity at the student's present company or locale. This is considered a terminal degree for students who do not wish to pursue their education beyond the M.S. level. Courses will vary depending upon the student's career goals and current situation. Students will work with a graduate advisor to determine which courses best suit their needs. A typical degree plan will include a variety of course work in plant

breeding, molecular and environmental plant sciences, statistics, plant pathology, entomology, agricultural economics, and education and human development.

#### *Time for Completion*

Since this program is designed for industry professionals who will continue to be employed full time during their graduate studies, typical course load will be 1 to 2 classes per semester. Many factors will affect completion time, but most students can expect to finish within 3-5 years.

## **Master of Science in Plant Breeding (Thesis Option)**

#### *Description*

The thesis option M.S. in Plant Breeding requires 32 semester credit hours of course work and a thesis on original research. Thesis research can be completed at the student's location. An on-site Ph.D. scientist, educator, or supervisor who qualifies as an adjunct member of the Texas A&M graduate faculty must be available to serve as co-chair of the student's graduate advisory committee and be able to direct thesis research locally. Students will have an on-campus co-chair to oversee the academic aspect of their degree. Communication with committee members, examinations, and thesis defense will be conducted via the internet.

#### *Requirements leading to an M.S. TO degree:*

1. 32 graduate credit hours beyond the B.S. degree; general requirements are:
  - a. 23 course hours approved by the student's advisory committee and the Office of Graduate Studies;
  - b. Statistics 651 or equivalent;
  - c. An exit seminar discussing research findings (SCSC 681 or HORT 681);
  - d. No more than 8 hours of 691 (Research) or 685 (Directed Studies);
  - e. No more than 9 hours of upper level (300 or 400) undergraduate;
  - f. Additional requirements at <http://tamu.edu/admissions/catalogs/>;
2. A thesis written on original research as directed by student's advisory committee.

## **Ph.D. in Plant Breeding**

#### *Description*

The Ph.D. in Plant Breeding requires 64 semester credit hours beyond an M.S. degree in plant breeding or related agricultural field and a dissertation on original research. Dissertation research can be completed at the student's location. Just as with the M.S. degree, an on-site Ph.D. scientist, educator, or supervisor who qualifies as an adjunct member of the Texas A&M graduate faculty must be available to serve as co-chair of the student's graduate advisory committee and be able to direct dissertation research locally. Students will have an on-campus co-chair to oversee the academic aspect of their degree. Communication with committee members, examinations, and dissertation defense can be conducted via the internet.

*Requirements leading to the Doctor of Philosophy degree:*

1. 64 graduate credit hours beyond the M.S. degree;
  - a. No set number of course hours is required; however, most committee chairs and advisory committees expect 32 to 40 semester hours of classroom study, which usually includes courses in fields other than agronomy with the remaining hours taken as "research and dissertation;"
  - b. Graduate seminar (1 hr.);
  - c. Additional requirements at <http://tamu.edu/admissions/catalogs/>;
2. A dissertation written on original research as directed by student's advisory committee.

## *Course Delivery*

Each course has been uniquely designed by the instructor to provide course content in an accessible, understandable format. All courses will be delivered on-line, completely at a distance via Texas A&M University's E-learning system. This system utilizes the Blackboard Vista learning platform to allow students to view instructional materials, interact with other students and faculty, and complete assignments and examinations. (*To check your computer's compatibility with this system visit Texas A&M's [E-Learning](#) and perform the E-Learning Browser Check.*) The web based nature of course delivery allows students to access and complete course material at a time convenient to them.

For thesis option M.S. and Ph.D. students, graduate advisory committee meetings, examinations, and research defense can be handled through electronic communication, including video and teleconferencing. No campus visit will be required.

## *Costs*

Tuition and fees are set by the university and will vary based on tuition rates, residency, course load and applicable fees. An estimate of tuition and fees for a 3 hour course are:

**Texas Resident Tuition and Fees: \$1700 per 3 hour course.**

**Non-resident Tuition and Fees: \$2600 per 3 hour course**

Scholarships and financial aid are available through the [Office of Financial Aid](#). Your graduate advisor can suggest other potential sources of funding. In addition, some employers provide financial assistance for their employee's educational expenses.

## *Admission Procedure*

Applicants should follow all of the guidelines and procedures to apply for graduate studies in a department offering a plant breeding degree at Texas A&M University at College Station using the Texas A&M on-line admission process. On-line application to graduate studies at Texas A&M University can be found at <http://admissions.tamu.edu>. The Department of Soil and Crop Sciences and the Department of Horticultural Sciences confer graduate degrees in plant breeding.

*Additional items to be provided by the applicant:*

### **Non-Thesis Option**

- A letter of application directed to Wayne Smith, Mike Arnold, or LeAnn Hague providing sufficient background information to demonstrate the student's commitment and ability to complete an on-line Master of Science (NTO) program and internship, including prospective internship location or activity.

### **Thesis-Option**

- A letter of application directed to Wayne Smith, Mike Arnold, or LeAnn Hague providing sufficient background information to demonstrate the student's aptitude to conduct plant breeding research.
- Identification of the area of plant breeding research to be pursued and its importance to the agricultural industry.

- A one or two-page letter of support from the perspective distance co-chair indicating commitment of facilities and time for the conduct of the proposed research.

Students applying to the *Department of Soil and Crop Sciences* must send these additional items to the attention of Wayne Smith, Department of Soil and Crop Sciences, 2474 Texas A&M University, college Station, TX 77843-2474 ([cwsmith@tamu.edu](mailto:cwsmith@tamu.edu)).

Students applying to the *Department of Horticultural Sciences* must send the additional items to the attention of Mike Arnold, Department of Horticultural Sciences, 2133 TAMU, College Station, TX 77843-2133 ([dbyrne@tamu.edu](mailto:dbyrne@tamu.edu)).

## *Some of the Available Courses*

The following are examples of courses currently available via distance delivery.

Course Name	Credit Hours
SCSC 304: Plant Breeding and Genetics	3
SCSC 306: Crop Production	3
SCSC 422: Soil Fertility	3
SCSC 641: Plant Breeding	3
SCSC 642: Quantitative Plant Breeding	3
SCSC 643: Quantitative Molecular Plant Breeding	3
SCSC 654: Genomic Analysis	3
SCSC 689: Intellectual Property and Plant Breeding	3
SCSC 660: Experimental Designs	3
SCSC 689: Extension in Agriculture	3
STAT 651: Statistics I	3
STAT 652: Statistics II	3
STAT 653: Statistics III	3
AGEC 314: Marketing Agriculture Production	3
EHRD 602: Human Resource Development	3
EHRD 605: Leadership	3

## *Contact Information*

For more information contact:

**Wayne Smith**

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**Mike Arnold**

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**LeAnn Hague**

Distance Education Coordinator  
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[Leann.hague@tamu.edu](mailto:Leann.hague@tamu.edu)

## *Additional Websites*

eLearning at Texas A&M University: <http://elearning.tamu.edu>  
Office of Graduate Studies: <http://ogs.tamu.edu>

Please direct comments concerning this bulletin to Wayne Smith,  
[cwsmith@tamu.edu](mailto:cwsmith@tamu.edu) or 979.845.3450.