

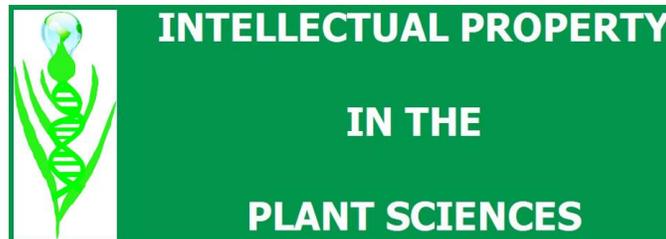
TEXAS A&M PLANT BREEDING BULLETIN

March 2014

Our Mission: Educate and develop Plant Breeders worldwide

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

The Plant Breeding Graduate Program in Soil & Crop Sciences and Horticultural Sciences at Texas A&M continues to grow. We have interest in our Distance M.S. and Ph.D. program from within the U.S. and from around the world. We continue to maintain the number of on-campus graduate students and we are seeking ways to expand international opportunities. We continue to look at innovative ways to expand the course offerings as appropriate for our plant breeding and other graduate students. To that end, Dr. Russ Jessup, perennial grass breeder, has initiated a course entitled “Intellectual Property in the Plant Sciences.” Russ is well equipped to relate IP issues concerning plant breeding to our students, having worked in private industry dealing with bioenergy crop development for the southeastern United States.



The Intellectual Property course developed by Russ focuses on IP as it likely will impact the future lives of our students at the professional level. At the conclusion of the course, students are expected to be able to:

1. Explain the scope, relevance, and impact of IP upon commercial, environmental, and societal interests;
2. Identify various types of plant material eligible for IP protection;
3. Audit and assess the merits of specific plant material for IP protection;
4. Discuss the major forms of IP: patents, trademarks, copyrights, and trade secrets;
5. Describe the current process for filing and obtaining a patent;

- 6. Understand the legal environment that impacts plant breeding activities in regards to plant patents vs. plant variety protection;**
- 7. Demonstrate an understanding of restrictions and participatory countries relative to IP and international treaties;**
- 8. Understand IP transfer and licensing agreement options and strategies;**
- 9. Evaluate existing and propose improvements for IP portfolios and strategies;**
- 10. Identify areas where IPRs could constrain a business and identify the implications of IP for a business plan.**

Dr. Jessup's Intellectual Property course is available also within our Distance Plant Breeding M.S./Ph.D. Program or as Continuing Education modules. In addition to developing and teaching his IP course, Russ teaches our introductory Recreational Turf course. This course is an introductory/service course and introduces turfgrass and agronomy to students within and outside of our undergraduate majors. Russ has brought web-based technology to his teaching style and is comfortable delivering knowledge and information in traditional standup format and with the array of electronic technologies. His students appreciate his understanding of and use of such technologies. Such knowledge serves him well in our Distance and Continuing Education efforts.

When Russ isn't teaching, he has an active and aggressive perennial grass breeding program. He utilizes conventional and genomic technologies to develop improved germplasm and cultivars of perennial grasses adapted to Texas and the southeastern United States. The focus of his research is on perennial grasses used as biofuels, forages, turfgrasses, ornamentals, and renewable bioproducts. Russ has developed unique germplasm of Pearl Millet-Napiergrass (PMN) and Kinggrass hybrids, which are high biomass feedstocks that are sterile triploid crops equivalent to seedless watermelons.



Russ is published in, among others, *Crop Science*, *Genome*, and *Molecular Breeding*, and he has written a couple of book chapters already in his young career. He has an active graduate student program in which he has graduated already three M.S. students, and currently mentors two M.S. and three Ph.D. plant breeding students. These include Charlie Dowling (Improved overwintering capacity in Napiergrass via wide-hybridization, inbreeding, and genomics), Anthony Watson (Seed priming and chemical genetics induced stress tolerance in perennial sorghums and millets), Greg Wilson (Phytotoxicity of diverse herbicides on novel PMN hybrids), Mason Kearns (Genetic and cytoplasmic male-sterility mechanisms within Pennisetum), and Andrea Fonseca (Resource-Use-Efficiency of dual-use biofuel: forage PMN hybrids). Additional projects performed by these students and numerous undergraduate students span novel perennial sorghum spp. hybrids, forage kleingrass, drought-tolerant bermudagrass, seeded St. Augustinegrass, native turfgrass establishment strategies, seed coating or pelleting technologies, and biofuel conversion efficiencies.

You can find additional information about Dr. Russell Jessup at <http://soilcrop.tamu.edu/people/faculty>, or by contacting Russ at rjessup@tamu.edu, (979)315-4242.



Continuing Education in Plant Breeding at Texas A&M University

Continuing education course modules in plant breeding and genetics, and related disciplines are available from Texas A&M University to clientele interested in gaining new information in plant breeding or simply seeking refresher courses. 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 who are not interested in an additional academic degree. A professional certificate can be a part of this program. No campus visit is required. Course modules currently open for enrollment are

[\(https://scsdistance.tamu.edu/purchase/\)](https://scsdistance.tamu.edu/purchase/):

Basic Plant Breeding: W. Smith

Unit 2: Self Pollinated Crops (24 February)

Unit 3: Cross Pollinated Crops (28 March)

Quantitative Genetics and Plant Breeding: S. Murray

Unit 2: (24 February)

Unit 3: (28 March)

Analysis of Complex Genomes: H. Zhang

Unit 2: Recombinant DNA and Cloning (24 February)

Unit 3: Sequencing Genomes and other Genomic Tools (28 March)

Host Plant Resistance: W. Smith

Unit 2: HPR to Diseases (24 February)

Intellectual Property and Plant Breeding: R. Jessup

Unit 2: IP Documentation (24 February)

Unit 3: IP Transfer and Enforcement (28 March)

Other Continuing Education courses in plant breeding and related disciplines that will be available include Host Plant Resistance; Selection Theory; Marker Assisted Selection; Genomic Analysis; Field Crop Diseases; Field Insects; Essential Nutrients in Crop Growth; and others.

Distance Ph.D. and M.S. Program available at Texas A&M University

Graduate degrees, both Ph.D. and M.S., are available via distance technology in plant breeding from Texas A&M. These degrees involve both the Horticultural Science Department and the Department of Soil and Crop Sciences. Availability of plant breeding research facilities and a Ph.D. scientist located at the student's location are requirements of the Ph.D. and M.S. (thesis option) degrees. Courses are delivered on-line and research is mentored by a Graduate Research Committee composed of faculty at Texas A&M University and a co-chair located at the student's research facility. 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 an additional graduate degree in plant breeding and who prefer not to leave their current employment or situation.

For more information, visit <https://scsdistance.tamu.edu/> or contact LeAnn Hague, Distance Education Coordinator in Soil and Crop Sciences at leann.hague@tamu.edu or (979)845-6148.

Upcoming Meetings:

National Association of Plant Breeders 2014 Annual Meeting in Minneapolis MN on August 5 – 8. Visit www.plantbreeding.org for details.

Please direct comments concerning this bulletin to Wayne Smith, cwsmith@tamu.edu or 979.845.3450.