Plant Breeding is a critical discipline to increase global food security and both environmental and economic sustainability - demands for training in Plant Breeding by industry and academia remain high. The Quantitative Genetics and Maize Breeding Program at Texas A&M University focuses on field-based applied plant breeding, molecular quantitative genetics (QTL, association mapping), and statistical methodology to support the design and analysis of these activities. A graduate assistantship is a competitive position with a stipend, comparable to a job, plus pays for your graduate degree, and health care. The Texas A&M University Soil and Crop Science Department is a leader in plant breeding research, education and training and has an extensive community of researchers and students working on many species and technologies. Within the Quantitative Genetics and Maize Breeding Program there are currently two assistantships available but competitive students may develop alternative or additional projects of relevance to the programs objectives.

Graduate Assistantship #1: Cycling of Gametes In Vitro (COGIV)

This assistantship is primarily laboratory based and involves tissue culture and genotyping of samples. The goal of this new research area is to perform ‘plant breeding in a petri dish’. This would vastly decrease costs and time while increasing genetic improvement each year. Assistance with the field-based breeding program would also be expected. For more information about this research project please see http://www.nature.com/nbt/journal/v31/n10/full/nbt.2707.html

Graduate Assistantship #2: High-Throughput Field Based Phenotyping

This assistantship would involve the development and operation of a field based machine (imagine a highboy sprayer) that drives over plots to measure traits like height and estimate biomass in a plot. There are multiple genetic mapping populations and applied breeding program materials that would be measured throughout growth and the results would be used for QTL mapping of growth curves. An interest and/or background in mechanical or computer engineering is strongly desired as is aptitude in these areas. Assistance with the field-based breeding program would also be expected. For more background please see: https://www.agronomy.org/publications/csa/articles/58/3/4

Qualifications: BS degree is required before starting the position; an MS degree is preferred but not necessary.

Contact: Please visit the project website (http://maizeandgenetics.tamu.edu – it is a little out of date) and contact Seth Murray specifically mentioning your interest. (e-mail: sethmurray@tamu.edu phone: (979-845-3469).