Undergraduate Research and Mentoring in New Biology

Sequencing of the SbGl15 gene sequence controlling glossiness in juvenile leaves of *Sorghum bicolor*

Emanuel Paz Perez
Advisors: Jinnu Xia, Carrie Thurber and Patrick Brown

Department of Crop Sciences, University of Illinois at Urbana Champaign, Urbana, IL

Glossy15 is a gene found within the *Zea mays* genome and codes for an Apetala2-like transcription factor. This gene is involved in cuticle wax formation on the leaves of juvenile plants. A *Sorghum bicolor* gene with 69.9% similarity to Glossy15 has been identified (Sorbidraft_10g025053). We are sequencing the entirere *Sorbidra6_10g025053* gene, which includes the promoter as well as all exons and introns, in 9 sorghum lines that differ for glossiness. The expected results are that sequence differences (SNP's, Indels, or frameshifts) will be present between the glossy and non-glossy lines. We are also studying the waxy glossy surface layer phenotype using microscopy of waxy/non-waxy juvenile leaves of juvenile plants expressing the phenotype within the F1 to F11 stages. We look for the gene genotype of the gene sequence using PCR analysis, electrophoresis and southern blot analyses in different species of sorghum plants expressing the phenotype or not within multiple species of homologous, heterozygous species of sorghum. Supported by The Undergraduate Research and Mentoring in New Biology program, NSF award #1041233.