NSF-GRFP RESEARCH STATEMENT OUTLINE

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Project Background:

- greater Zea phylogeny is not well resolved
- Zea luxurians phylogeny is not well resolved
- we are interested in admixture, explain how hybridization can lead to haplotype transfer
- maize is a good study system because it's agriculturally important and has great variety over a wide area
- maize hybrid zones exist
- we have found interesting hybrid populations near proposed areas of maize domestication
- we have many questions about these populations

Project description:

All Zea:

Zea Phylogeny: Treemix/Spacemix (grater phylogeny) (looking at landraces) (resolving luxerians)

Gene Flow: Treemix/Spacemix, STRUCTURE, Fst, heterozygosity

Hybrid populations:

Characteristics: common garden, Fst, heterozygosity

Taxonomy: Dstatistic, Treemix/Spacemix

Gene Flow: Treemix/Spacemix, STRUCTURE, Fst

Resources needed: **People:** me, Matt Hufford, Jeff Ross-Ibara, Mexico collaborators

money: my salary, common garden materials (low cost is a selling point)

Project impacts:

Maize Community: better greater phylogeny, better landrace phylogeny, resolved luxurians

Evolutionary Biologists: more info about the nature of hybridization and it's affect on evolution

Works Cited: