Budget Justification

Personnel

Other Personnel

0.0.1 Postdoctoral Scholars

Funds are requested to support a postdoc for 12 months per year, for all three years of the proposal with a base salary of $42,840. The postdoc would lead the population genetic analysis of GBS and sequence data of introgression and maize-teosinte hybridization.

0.0.2 Technician

Funds are requested for the first two years of the grant for 2 calendar months (17% time) of support for a technician (Assistant Specialist I) to extract DNA and prepare GBS and genomic sequencing libraries, facilitate genotyping/sample prep for collaborating labs, and coordinate the undergraduate laboratory outreach. The base salary for this positions is $42,144.

Fringe Benefits

Fringe benefits are applied to personnel salaries using the university approved rates:

- Postdocs - 17% in FY 2015, 18% in 2016, and 19% in 2017
- Technician - 50.4%(1/1/2015-6/31/2015), 53.4%(6/31/2015-6/31/2016), 55.7%(6/31/2016-6/31/2017), 57.3%(6/31/2017-12/31/2017)

Equipment

No equipment funds are requested.

Travel

Travel for two travelers (the PI or Sr. Personnel and the postdoc) for domestic or international conference travel is budgeted each year at $3,000.

Other Direct Costs

Materials and Supplies In each of the three years of the grant, $5,000 is requested in materials and supplies for library prep for whole genome sequencing, and DNA extraction and preparation for GBS. This also includes funds for standard office supplies, computer supplies (extra storage for our cluster, backup drives for lab members), and other miscellaneous expenses. We have also included $1,000 in supplies to support undergraduate-led research projects.

Whole genome sequencing The genomes of each of eight teosinte will be resequenced to a depth of 30X using 13 lanes of paired end 150bp reads on an Illumina HiSeq 3000. Current lane costs are approximately $2,500 per lane, and library preparations costs are approximately $75, for a total cost of $14,146.00 for two *Zea mays* ssp. *huehuetenangensis* and two *Zea mays* ssp. *mexicana* in year 1 and $18,761 for the larger *Zea luxurians* and *Zea diploperennis* genomes in year 2.

GBS Genotyping-by-sequencing will be performed for our introgression analyses admixture population genetic analyses. GBS will be performed at the Institute for Genomic Diversity at Cornell. Current prices are $34 per sample to run samples at 96-plex. We will genotype 288 individuals in year 1 for a cost of $9,840, and 192 individuals in year 2 for a cost of $6,560.

Publication Costs In year two and three $1,600 is requested for publication fees to an open access journal.

Total Direct Costs

Total direct costs for UCD come to $253,119.

Indirect Costs

Indirect costs are calculated on Total Direct Costs using F&A rates approved by US Department of Health and Human Services. For this project, F&A rates of 56.5% were used from July 1, 2015 through June 30, 2016, and 57% from July 1, 2016 until the end of the project.