**MES Tropical Ecology Elective (Winter 2016)**

A 6-credit course by Dina Roberts and Richard Bigley

Plan for 15 Students (a few more might be possible)

***Class contact commitment*** Meets 4 times on campus during winter quarter for preparation leading to a 14 day field trip to Costa Rica. *Students won’t be able to take another 4-credit elective during winter quarter.*

**Draft Program Description for Tropical Ecology**

*Setting* Tropical forests house over 50% of terrestrial biodiversity yet make up less than 6% of global land area. Costa Rica alone houses over 4% of this biodiversity within a small, but topographically diverse country covering 51,000 km2 (0.03 percent of land area). The complex issues of biodiversity conservation and forest protection align with the strong conservation ethic of Costa Ricans and yet globalization of agricultural crops has led to a push and pull between destruction and preservation of these diverse forests. In this program, we will explore this contradiction through the lens of ecological, agricultural and cultural dimensions during a combination of 4-on campus class periods and a two-week trip to Costa Rica to experience the ecology and culture first hand.

*Pre-trip preparation* On-campus lectures and seminars (approximately 4 pre-trip sessions) will explore (1) biogeographical and ecological explanations for species diversity and distribution, (2) alternate hypotheses and explanations for high diversity tropical forests, (3) ecological interactions and coevolution, (4) pollination and fruit dispersal mechanisms, (5) land use change, forest fragmentation and sustainable development models, (6) Costa Rica’s forward thinking ecosystem services programs and (7) forest restoration as a science and an art.

*Field studies* The two-week field trip to Costa Rica will allow students to begin to apply what they learned on campus. A series of forest walks, lectures, and directed field studies will introduce students to organisms and ecological processes of lowland rainforest, pre-montane and cloud forest. Costa Rican conservation efforts such as protected areas strategies and environmental service payment programs will be examined.

A series of field exercises and data collection techniques will be demonstrated with an emphasis on avian ecology and forestry/restoration monitoring. Students will maintain a field journal during the lab and field components, in which they will take notes on program material and on their own independent observations. Students will conduct independent research and collect field data across multiple sites. Each student or student teams will compile their data and present their research findings during a class Tropical Research Symposium on the final days of the field trip.

*Itinerary for Costa Rica:*

A 14 day field trip will occur during winter quarter week 11 and Spring Break (March 13-27) 2016.

After arriving in San Jose at SJO airport, we will spend one night in Alajuela near the Airport. The following morning we will leave for the Pacific Coast and spend a day traveling to the Osa Peninsula in Southwest Costa Rica just outside Corcovado National Park. We will stay 4 nights at the Osa Biodiversity Center. From there we will travel to San Vito, to Las Cruces Biological Station, run by the Organization for Tropical Studies. We will stay there for 7 nights with a 2 day trip to montane forests of Las Alturas. From San Vito we will travel back to San Jose and potentially stay one night near Continental Divide near paramo forests outside of San Jose before dropping students off back at SJO to depart.

*Itinerary*: 2 instructors, 15-(20) students Sunday March 13, depart Sunday March 27th, 2016

*Cost:* based on 15 students the trip fee cost is $2,175 per student which includes airfare, all ground transportation, and accommodations and all except a couple meals at the front and back end associated with individual air travel.