

BSC 3996, Natural History of Central America

Summer A 2003, May 12th – June 19th

Syllabus

Instructors: Dr. Brad Bennett, Dr. Dan Childers, Dr. Laurie Collins, Dr. Mo Donnelly, Dr. Grenville Draper, Dr. Evelyn Gaiser, Dr. David Lee, Dr. Tim Rawlings

Objectives: This course teaches environmental biological field methods and approaches to research in tropical America. We cover a wide variety of environmental biological fields, including marine biology, terrestrial ecology, wetlands ecology, biodiversity, plate tectonics, paleoenvironments and ethnobotany.

Note: The following schedule of events is subject to change, depending on the availability of faculty and the weather.

Week 1 -- Orientation at FIU

- Monday May 12th. 9:30 – 10:45 am. Aims of the field course, schedule, and checklist. Dr. Laurie Collins, Dr. Brad Bennett
- Wednesday May 14th. 9:30 – 10:45 am. Natural History and Culture of Bocas del Toro. Dr. Brad Bennett, Dr. Laurie Collins

Week 2 -- Orientation at FIU

- Monday May 19th. 9:30 – 10:45 am. Working in the tropics. Dr. Mo Donnelly, Dr. Brad Bennett
- Wednesday May 21st. 9:30 – 1:00 pm. First Aid Procedures, heat management, rules of conduct. Dr. Laurie Collins, Dr. Mo Donnelly, Dr. Brad Bennett

Week 2 -- Travel from Miami to Panama

- Saturday May 24th. Dr. Laurie Collins and students travel to Bocas del Toro, Panama.
Flight schedule: Miami - Panama City, American Airlines #2131, lv 10:50 am, arr 12:40 pm.
Panama City - Bocas del Toro, Aeroperlas, lv 3:00 pm, arr 4:00 pm.

Week 3 -- Geology and marine biology of Bocas del Toro: Dr. Laurie Collins, Dr. Dan Childers, Dr. Gren Draper and Dr. Tim Rawlings. Monday May 25th to Saturday May 31st.

- Geologic history of the rise of the isthmus, 1 day on mainland examining igneous rocks: Dr. Draper
- Survey of *Oreaster* (basket stars)– density study and environmental variables: Dr. Rawlings
- Rise of the isthmus of Panama, earliest evidence (columnar basalts) and paleoenvironments, Small Plantain Cay and Valiente Peninsula: Dr. Collins, Dr. Draper
- Fossil vs. living biotas and paleoenvironments of Bocas del Toro 1 day in field (Cayo Agua) and 1/2 day in lab: Dr. Collins, Dr. Rawlings
- Setting up litter traps on mangroves, Banana River and STRI Point, 1/2 day: Dr. Dan Childers
- Fish inventories on reefs, mangroves, and sea grass environments. 1/2 day in field: Dr. Rawlings
- Lecture on the mission and scopes of the STRI Research Station at Bocas del Toro. Lecture will be delivered by Sr. Luis Mou, Station Manager

Week 4 -- Wetlands ecology and terrestrial biodiversity: Dr. Dan Childers, Dr. Mo Donnelly and Dr. Evelyn Gaiser. Monday June 2nd to Saturday June 7th.

- Mangrove ecosystems, litter traps for river vs. coastal environmental conditions, field and lab activities: Dr. Dan Childers
- Biodiversity of lizards and snakes in Bocas del Toro forests: Dr. Mo Donnelly
- Bird biodiversity of the tropics: Dr. Evelyn Gaiser
- Evening lecture on National Park Activities by park personnel: Dr. Mo Donnelly, coordinator
- Visit to School on Bastimentos Island. 1/2 day in field. Dr. Brad Bennett and Dr. Evelyn Gaiser together with Sr. Luis Mou will coordinate this visit

Week 5 -- Terrestrial biodiversity and ethnobotany: Dr. Maureen Donnelly, Dr. Brad Bennett and Dr. David Lee. Monday June 9th to Saturday June 14th.

- Plant biodiversity: families of tropical plants, Isla Colon forests vs. Plantain Cay islands: Dr. Brad Bennett
- Biodiversity of landsnails in Bocas del Toro. Dr. David Lee. 1/2 day in lab
- Frogs of Bocas del Toro forests, coloration differences among islands: Dr. Maureen Donnelly
- Night walk, nocturnal biodiversity in Bocas del Toro: Dr. Mo Donnelly and Dr. Brad Bennett
- Canopy structure and morphology of trees in Bocas del Toro forests: Dr. David Lee
- Eco-physiological features of trees in Bocas del Toro forests: Dr. David Lee

Week 6: Return to Miami and reports.

- Monday, June 16: Drs. Mo Donnelly and Brad Bennett leave Bocas to return to Miami. Flight schedule: Bocas del Toro - Panama City, Aeroperlas, lv 9:00 am, arr 10:00 am. Panama City - Miami, American Airlines #2132, lv 1:45 pm, arr 5:45 pm.
- Students will write a report of what they found most scientifically interesting during the field course in Bocas del Toro (graded jointly by Dr. Maureen Donnelly and Dr. Laurie Collins). The report will be limited to a maximum of six pages, double spaced, 12 point font (Times). See Evaluation of Student Performance (below) for grading guidelines. The **report** and the **field notebook** are due on Thursday, **June 19 at 5 pm** at either instructor's office.

Living at the STRI Research Station, Bocas del Toro

STRI Facilities

- Laundry: wash \$1.25/load, dryer \$1.00/load; both quarters only
- Internet connection (only one computer)
- Phone: ATT phone cards are cheapest
- Four rooms, we will try to have 2-3 people per room
- Dining room and small kitchen at the dorm

Rules of the station: see handout Code of Conduct (aka THE RULES)

Living in Bocas del Toro

- Faculty will stay in town at the Hotel Bahia.
- One faculty member will have dinner with the students every night.
- Drink only filtered tap water, available in the dorm and at the main building.
- The student leader will be Andy Davis. He is the only student who may drive a vehicle (except for emergencies). Report any problems with the dorm facilities to Andy, who will tell the station manager.
- Daily schedule (except when scheduled otherwise):
 - Breakfast 7:00 am
 - Ready for the field 8:00 am
 - Lunch in field
 - Back to the station about 4:30 pm
 - Dinner 6:00 pm
 - Evening lecture 7:30 pm. We will introduce new material and present the schedule for the next day's activities. Students are expected to take notes.
- Lab component and outside activities
 - We anticipate having labs on plant identification, marine ecology, etc., but the majority of time will be spent in the field.
 - We anticipate at least one night walk to study animals, and possibly a sea turtle watch.
- Be ready to stay at the Research Station because of downpours of rain!!!! We will distribute a reading list for such occasions.
- Free time: starts from the time we return to the research station on Saturdays until Monday morning. If you plan to leave the research station for any reason you must inform both the student leader (Andy) and the faculty, telling them where you are going and when you will return. Meals will be scheduled every day; if you intend to miss any meals, inform Andy a day in advance and he will tell the cook.

Evaluation of student performance

- Field-lab notebook (40% of final grade). It will be graded by Dr. Laurie Collins and Dr. Mo Donnelly. We will pay attention to extent and content of notes taken in the lab and field.
- Participation in the field and lab (20% of final grade) It will be jointly graded by Dr. Laurie Collins and Dr. Mo Donnelly.
- Student report (40% of final grade). It will be jointly graded by Dr. Laurie Collins and Dr. Mo Donnelly. The purpose of the report is to write about what you found most scientifically interesting during the field course in Bocas del Toro. It is limited to a maximum of six pages, double spaced, 12 point font (Times). The report and field notebook are due Thursday June 19 at 5 p.m. in either instructor's office.

Important Phone Numbers and Contact Addresses (Panama country code is 507):

- American Embassy in Panama City: Calle 37 y Avenida Balboa, Apartado 6959, Panamá 5, Panamá. Phone: 507-207-7000, Fax: 227-1964
- Smithsonian Tropical Research Institute Headquarters: Roosevelt Avenue Ancon, Balboa - Tupper Building, P.O. BOX 2072 - Phone: 507- 212-8000
- Hotel Bahía, Bocas del Toro, Panama. Faculty will stay at this hotel in Bocas del Toro. Phone: 507- 757 - 9626, Fax: 507 – 757- 9692
- Smithsonian Tropical Research Insitute (Instituto de Investiaciones Tropicales Smithsonian), Bocas del Toro Research Station. Students and UMEB coordinator will stay in this station. Phone: 507 – 7579794, Fax: 507 – 7579896, email: moul@naos.si.edu
- Emergency contacts at FIU: Daytime: Office of International Studies, 305-348-1913/1918, Laura Cronin (student coordinator)
Evening/Night: Public Safety, 305-348-2626, ask them to reach OIS people

Student Field Equipment Checklist

Documents and Other Paper Items

- Passport
- Photocopy of passport (give Yuria a copy)
- Credit card
- ATM card
- ATT phone card
- Small Spanish-English dictionary (if needed)
- Emergency contacts in U.S. written down
- Reading material

Packing Equipment

- Backpack
- Duffle bag
- Tags for luggage

Field Equipment

- Poncho/rain cover for pack
- Waterproof fieldbook (Rite in the Rain, 4 5/8" x 7 1/4", Item no.118 at Herbarium Supply Company, 1-800 348-2338, www.herbariumsupply.com, \$15.75)
- Waterproof pens & pencils w/ erasers
- Pocketknife
- Hand lens on string for neck (10X, Fairchild has them for \$10)
- Whistle
- Compass
- Watch, preferably waterproof
- Folding umbrella
- Clippers (optional, we will have 2 pairs)
- Water bottles, 2 liters
- Hat or visor
- Binoculars (if you have them)
- Sun screen & chapstick, at least spf 15
- Insect repellent for skin & clothes (can get spray Off in Bocas; no aerosols on plane!)
- Head net (optional)
- Pocket flashlight & extra batteries
- Gatorade mix (optional)

Personal Toiletries

- Soap in plastic soap dish
- Shampoo/conditioner
- Toothbrush & toothpaste & floss
- Comb/brush
- Razor
- Deodorant, unscented
- Foot powder
- Beach towel

- Feminine hygiene products (if appropriate)
- Vitamins (optional)
- Any required prescription drugs

First-Aid Kit

- Aspirin or ibuprofen or tylenol
- Neosporin or similar fast-healing cream
- Band-aids, small and large
- Mole skin
- Anti itch lotion
- Cold tablets
- Benedryl
- Immodium D
- Adhesive tape & gauze patches
- Small toilet paper roll, smashed/kleenex
- Chloroquin (or other antimalarial) and Cipro

Miscellaneous

- Money, enough for 3 days off
- Quarters for laundry machine
- Ziplock baggies of different sizes
- Sunglasses for the field, good quality
- Mask, snorkel, flippers (STRI also has these)
- Twine or thick string, several m
- Travel alarm clock
- Extra pair of glasses or contact lenses
- Few plastic bags for laundry, etc.

Clothing

- Long field pants (2 pair. Nylon/cotton good)
- Light weight, long-sleeved shirts (2)
- Tee shirts (4)
- Shorts (2 pair, preferably fast-drying nylon)
- Underwear, 10 pairs
- Socks including liner socks if desired
- Rubber boots
- Reef walkers/dive booties
- Sandals or tennis shoes for leisure
- Casual city clothes, 1 set
- Swim suit, one-piece

Photographic Equipment

- Camera, lenses & flash
- Extra batteries for camera and flash
- Film (Bocas may have poor selection)
- Lens tissue or chamois cloth
- Equipment instruction booklets