MOOREA 2012

BIOLGY AND GEOMORPHOLOGY OF TROPICAL ISLANDS
Environmental Science, Policy and Management C107 = Integrative Biology 158LF

Professors: Brent Mishler (IB, organizer), Jonathon Stillman (IB), Vince Resh (ESPM),
George Roderick (ESPM,)

GSIs: Matthew Luskin, ESPM, Rosemary Romero (IB), Darcy Kato Ernst (IB)

Websites:
Class information: http://ib.berkeley.edu/moorea; bspace: http://bspace.berkeley.edu;
Gump Station: http://moorea.berkeley.edu

Important dates (please note; dates may change so check the class website and watch for emails)
(9:00 am in 3059 VLSB except where noted; each meeting is important, so we expect full attendance):

May 1: Non-refundable deposit of $500 due; check made out to "UC Regents" and given to George Roderick—you will get a receipt.

May 15: Passport information due: we need a scan of your passport page with picture and info, birthdate, and permanent address; This is needed for the protocole d'accueil. It will be sent as a PDF to Brent Mishler by email.

Aug 23: Rentre (back to school, first day of class). Introduction, questions and answers. Tahiti/Moorea, the Society Islands, the Pacific Ocean, Tahiti, and Moorea. Document check: passports, protocole update, tutorials, tickets, etc. Course and travel details. Introduction to Gump Station. What to bring to Moorea. Cooking groups. Project review from previous years, discuss what makes a good project, and suggestions for potential topics.

Aug 23-Sept 11, Schedule will include these topics and others:
Geology of tropical oceanic islands: tectonics, structural geology geophysics, geomorphology, paleoceanography, climatology, reef structure, and reef evolution
Island biology, with emphasis on plants; insects; fish, marine invertebrates…; Phylogenetics
Peopling of the Pacific; Human impacts on island ecosystems; Ethnobotany of Polynesia
Tours of herbarium and museums (curators of collections)
Discussion of possible projects with current and past GSIs
Introduction to library and information resources; How to take scientific notes
Terrestrial arthropod diversity on islands, Invasive organisms on islands
Freshwater ecology on Moorea
Field exercises on plant and arthropod ecology, stream ecology
Methods for characterizing and studying behavior; Dangerous marine animals
Introduction to scientific thinking and communication in science
Introduction to statistical thinking; Statistics workshop
Islands and popular culture
Required water safety and snorkeling instruction; swimming test
Exam on lecture & workshop material

Sept. 12-13: Free days to pack and get ready

Sept. 14-15: Travel to Tahiti, arrive at Gump Station on Moorea no earlier than Saturday, 15 Sept. and no later than 5pm on Sunday, 16 Sept.

Sept. 16: Sunday evening, first class function at Gump Research Station on Moorea

Sept. 17: Bright and early Monday, begin class activities with island tour

Oct. 1: ••• Remainder of class fees due, $4,300, due through CARS •••

Nov. 17: Saturday, class finishes in Moorea; depart Gump Station. Preliminary draft of complete paper due (draft sections will have been prepared and due earlier).

Nov 18-25: Week for independent travel and study -- you must leave Gump Station on Nov. 17, but many students like to stay in French Polynesia and tour other islands. A good time to have parents or
significant others visit (which we strongly discourage during the class time). Otherwise, come back to California for Thanksgiving and get a head start on your project completion!

**Nov. 26:** Monday, required class meeting in Berkeley 3059 VLSB at 9 AM.

**Nov. 26:** Intensive work finishing up project: consult with faculty on campus, statistics, use labs and/or libraries, etc. as needed. Prepare presentation and improve your paper draft; format paper. Workshops will be given in these and other areas.

**Dec. 5:** **Wednesday.** Class mini-symposium--project presentations in 15-minute slots all day. 2063 VLSB; friend and parents welcome.

**Dec. 11:** **Tuesday 5:00 pm.** Final papers due, must be properly formatted for inclusion in the "class reports" book to be deposited in the UCB Library, Gump Station, sponsoring departments, offices of officials in French Polynesia, and posted on the web. We are under a tight schedule to read these, so there will be a penalty for late papers.

**Dec. 14:** Semester ends; grades available.

**Money matters**

Anticipated costs of the course (class materials fee) will not be more than $4,800 for housing, food, lab/field materials, and in-country travel (after you reach the Gump Station up until the end of the Moorea part of the course in November). We will give you an update on fees in mid-summer. The $500 deposit is part of this $4,800, so you will need to pay the remaining $4,300 through CARS approximately on October 1. You will also be responsible for the round trip airfare from the Bay Area to Tahiti (airfares may vary significantly depending on time of purchase and itinerary -- start looking now!). See the Gump Station website for travel information and/or talk to your own travel agent and/or classmates. *Financial assistance is available for qualified students through the Financial Aid Office, 211 Sproul Hall. Students currently on financial aid can have their fall budgets and allocations adjusted to reflect these additional costs; please see your financial aid counselors about this and/or talk to us.*

Items that are not covered in these fees include your entertainment, special dietary needs or wants, alcoholic beverages, trinkets and gifts, private travel, recreation, personal toiletries, soap, and other personal items.

**Visa and protocole d’accueil**

For this course, US citizens now need only a passport and protocole d’accueil to enter French Polynesia and stay at the Gump Station for this time period. A visa is not needed for stays up to 3 months. If you do not have a US or EU passport, you will responsible for getting your own visa, if needed. The Gump Station maintains a web page with current rules: [http://moorea.berkeley.edu/travel/visa-requirements/](http://moorea.berkeley.edu/travel/visa-requirements/). We will email details if there are changes.

**You must have a passport valid for six months beyond the last day in French Polynesia.** If yours is about to expire, renew immediately! You may need it ahead of time to get your protocole d’accueil.

Each student in the class, including EU passport holders, must have an individual research permit, which we prepare as a class. The research permit is a two-page form to be filled out electronically (including a photo); we will email you the blank form. You need to return the information to us **May 15th at the latest,** so we can send them all together with the general class permit application to Gump Station, which will arrange make arrangements for us with the government. The research permit is required by the government before they will send us the protocole d’accueil.

**Health Information**

You do not need any special shots or other preventive health measures. French Polynesia is quite civilized, with French doctors. There is a small hospital on Moorea and a large one in Papeete. Dengue fever is present in French Polynesia, but avoiding mosquitoes is the best deterrent. For traveling in any tropical area, you might want to bring along a small personal first aid kit that includes aspirin, sudafed, immodium or Pepto-Bismol, band-
aids, calamine lotion, and aloe cream. You might want to bring mosquito repellent (whatever works for you),
though they have very good repellents in French Polynesia. Everyone must have health insurance, and you
should be sure it covers emergency medical evacuation. More information will be given later. For many students
UC now covers this—please check for yourself.

Water Skills

Everyone will be expected to participate in exercises in the lagoon. Swimming skills are essential and snorkeling
is desirable. A swimming test and snorkeling lesson will be required as part of out activities in the fall. You
should practice snorkeling in the ocean or pool so that you are comfortable with the gear. For this class and for
Moorea everyone will be expected to have her/his own mask, fins and snorkel, as well as diving booties and
gloves (gardening gloves do just fine). We recommend getting a good solid pair of booties for walking around on
the reef, etc. These items can all be purchased around the Bay Area, but if you have them already don’t forget to
bring them to Berkeley in the Fall. Again, more info about this will be discussed at the beginning of the semester.

SCUBA diving at the Gump Station is possible only for “UC-certified Scientific Divers”. Others may not dive using
the Gump Station, even if you have other kinds of certification. However, anyone can arrange to dive with one of
the private companies on the island in their free time.

Required Course Text:

*Handbook of Biological Investigation*, most recent is 7th ed. 2007 (Ambrose et al.); earlier eds ok.

Other Summer Reading & Preparation

*Lonely Planet Guide to Tahiti and French Polynesia*, most recent is 8th ed. 2009 (Brash & Carillet)
*Elements of Style* (Strunk and White)

Also see: [http://ib.berkeley.edu/moorea/](http://ib.berkeley.edu/moorea/). Things will be busy in the Fall; this summer would be a relaxed time to
prepare yourself for paradise with general readings and watching 3 versions of *Mutiny on the Bounty*!

Grading (will update in the Fall)

- Exam on lecture material (20%),
- Field exercises/ field notes (10%)
- Project (60%), includes proposals/drafts (5%), symposium presentation (10%), final paper (45%)
- Participation (active buddy, good citizen, station rules) (10%)

Gump Station Rules

The Station rules are available on the web and will be handed out for you to sign in the fall. We do need to
emphasize the importance of these rules, which are based on common sense. The station has the authority to
send disruptive students home at anytime. The local authorities are also quick to take action on legal matters,
which at a minimum would be expulsion from French Polynesia. **We want to particularly underline the
prohibition against illegal drugs.** You must not transport, purchase, sell, or use them; doing so would
jeopardize more than just your future, it would endanger the future of this class and the station. The professors,
GSIs, the station, and the local authorities, must be very strict on this issue. Also, remember that in a foreign
country you are ambassadors for Berkeley and the US, and you must behave accordingly.

The Risks of International Education

French Polynesia is a remote, foreign country with a non-English official language. As a result, living in French
Polynesia entails some risk, including, but not limited to, potential problems with rapid access to health care,
dangers associated with roads, vehicles, and traffic signs, dangers associated with beaches, shores, boat use,
and water activities, dangers associated with trails and forests. While most of these risks are no greater than one
would face in California, one must ALWAYS be careful and USE common sense. **Each student must remember
that she/he takes full responsibility for her/his actions.**
Moorea 2012—Proposed Packing List
List of supplies to take with you—we will discuss again and update this list in the Fall.

**Required**
- passport
- **Attestation d’Accueil (or Protocole or Visa)**
- copy of Passport and important documents/cards
- nice clothes for travel, meetings in Papeete, and evenings out
- t-shirts/tops (many)
- loose fitting long-sleeved top
- shorts to wear hiking and around
- field pants (or zip-offs; jeans take a long time to dry)
- socks, underwear, etc.
- hat for sun
- raincoat (not insulated)
- jacket or fleece
- good trail shoes for hiking (can be sturdy running shoes)
- bathing suit(s)/board shorts
- sun shirt or rash guard to wear around water, intertidal work
- snorkeling equipment: mask, snorkel, fins
- surf shoes, booties, or old sneakers that can get wet and cover toes
- gloves for snorkeling (garden gloves will do fine)
- flip-flops, tevas, or equivalent
- sunblock/sunscren, chapstick with sunscreen (also available in FP)
- sunglasses (UV protection can be found inexpensively)
- insect repellent (Skin-so-Soft from CA; Citronella available in FP)
- personal first aid supplies; any prescribed medications with prescription
- bathroom items (also available in FP)
- daypack or small summit pack (large enough for a day in the field)
- multipurpose “Swiss-army” knife (but do not carry it on the plane)
- water bottle (plastic bottled-water bottle from FP is fine)
- flashlight (preferably headlight)
- digital camera, extra memory card, rechargeable batteries, charger
- waterproof notebook (will discuss in class), pencils or waterproof pens
- lab notebook (will discuss in class)
- magnifying loupe (hand lens; will discuss in class)
- USB memory stick
- credit card or debit card (not all credit/debit cards work; Visa does; check the web)
- **laptop computer** with wifi, 110-240v, and continental Europe electrical plug—will discuss
- earphones or headset for Skype

**Recommended and/or will discuss in class**
- light travel sleeping bag or fleece roll
- binoculars
- GPS (recreational)
- guitar, frisbee, ...
- music, DVDs, portable speakers (note voltage)
- zip-lock bags

Plan to pack light—you don’t want to have to carry a lot around before and after the class. Also, we will ask each student to help carry to Moorea some class supplies and small equipment. We will discuss this more. Many items on the list and all consumables can be found in FP, but are more expensive.