

## Term Information

Effective Term Summer 2017

## General Information

Course Bulletin Listing/Subject Area Evol, Ecology & Organismal Bio  
Fiscal Unit/Academic Org Evolution, Ecology & Org Bio - D0390  
College/Academic Group Arts and Sciences  
Level/Career Graduate, Undergraduate  
Course Number/Catalog 5480  
Course Title Tropical Behavioral Ecology and Evolution  
Transcript Abbreviation TropBehEcolEvol  
Course Description Focus on the evolutionary processes that shape the ecology and behavior of invertebrate systems in a diverse tropical forest with a special emphasis on symbioses. Students will build skills in proposal writing, experimental design, and field research conducted at the world renowned Smithsonian Tropical Research Institute in Panama.  
Semester Credit Hours/Units Fixed: 3

## Offering Information

Length Of Course 4 Week  
Flexibly Scheduled Course Never  
Does any section of this course have a distance education component? No  
Grading Basis Letter Grade  
Repeatable Yes  
Allow Multiple Enrollments in Term Yes  
Max Credit Hours/Units Allowed 12  
Max Completions Allowed 4  
Course Components Field Experience, Seminar, Independent Study, Lecture  
Grade Roster Component Lecture  
Credit Available by Exam No  
Admission Condition Course No  
Off Campus Sometimes  
Campus of Offering Columbus

## Prerequisites and Exclusions

Prerequisites/Corequisites EEOB 4498 with course instructor or permission of course instructor. For graduate students EEOB 6220 or permission of instructor.

Exclusions

## Cross-Listings

Cross-Listings

## Subject/CIP Code

Subject/CIP Code 26.1303  
Subsidy Level Doctoral Course

Intended Rank

Senior, Masters, Doctoral

## Requirement/Elective Designation

The course is an elective (for this or other units) or is a service course for other units

## Course Details

### **Course goals or learning objectives/outcomes**

- Students will appreciate tropical animals, plants and fungi with particular emphasis on social interactions and symbioses
- Students will understand the principles of proposal writing and research design
- Students will develop skills in manuscript preparation
- Students will communicate research ideas informally and formally
- Students will develop skills in research project assessment and peer mentoring

### **Content Topic List**

- Logistics, methods, and practice of field work in a tropical forest in Panama
- Presentations on tropical ecology and evolution by active researchers
- Preparation and assessment of independent research proposals
- Oral and written communication of research results

## Attachments

- Syllabus.docx: Syllabus  
*(Syllabus. Owner: Johnson, Norman F)*
- CourseSchedule.docx: Schedule  
*(Other Supporting Documentation. Owner: Johnson, Norman F)*
- 2\_Academic Components\_TBEE 30Mar16.docx: Academic Justification  
*(Other Supporting Documentation. Owner: Johnson, Norman F)*
- 3\_Logistical Components\_TBEE.pdf: Logistics in Panama  
*(Other Supporting Documentation. Owner: Johnson, Norman F)*
- 5\_Panama Travel Safty Appendix 2\_TBEE.pdf: Safety in Panama  
*(Other Supporting Documentation. Owner: Johnson, Norman F)*
- 4\_Course Goal\_Appendix 1\_TBEE.pdf: Course Goals  
*(Other Supporting Documentation. Owner: Johnson, Norman F)*

## Comments

- The course has been provisionally approved by the Office of International Education pending succesful completion of normal course approval process. *(by Johnson, Norman F on 03/30/2016 03:48 PM)*

**COURSE REQUEST**  
5480 - Status: PENDING

Last Updated: Fink, Steven Scott  
03/30/2016

**Workflow Information**

Status	User(s)	Date/Time	Step
Submitted	Johnson, Norman F	03/30/2016 03:48 PM	Submitted for Approval
Approved	Johnson, Norman F	03/30/2016 03:48 PM	Unit Approval
Approved	Fink, Steven Scott	03/30/2016 04:32 PM	College Approval
Pending Approval	Nolen, Dawn Vankeerbergen, Bernadette Chantal Hanlin, Deborah Kay Jenkins, Mary Ellen Bigler Hogle, Danielle Nicole	03/30/2016 04:32 PM	ASCCAO Approval

**EEOB 5480: Tropical Behavioral Ecology and Evolution.**

*Summer (4 week session), 10 May –5 June 2017. 3 credit hours*

**Course description:**

We will focus on evolutionary processes that shape the ecology and behavior of invertebrate systems in a diverse tropical forest with a special emphasis on symbioses. Students will build skills in proposal writing, experimental design, and field research conducted at the world renowned Smithsonian Tropical Research Institute in Panama (May 2017). In addition, the students will review and discuss the work of their peers, and attend lectures, tutorials and trips throughout the 26 day stay in Panama. A final project report will be submitted in June. This intense course provides unique opportunities to interact with a global community of scientists and learn successful research strategies while working in a Neotropical rainforest!

*\*All graduate students must take Scientific Writing (EEOB 6220) or have the equivalent level of preparation before going to Panama.*

*\*All undergraduates must take Undergraduate Research (EEOB 4498) with Dr. Adams or have the equivalent level of preparation before going to Panama.*

**Faculty instructors:**

-Dr. Rachelle M. M. Adams, EEOB, The Ohio State University

-Dr. Jonathan Z. Shik, Centre for Social Evolution, University of Copenhagen

**Enrollment:**

This course has a minimum enrollment of 8 OSU students (12 max)

**Learning goals:**

- Students will appreciate tropical animals, plants and fungi with particular emphasis on social interactions and symbioses
- Students will understand the principles of proposal writing and research design
- Students will develop skills in manuscript preparation
- Students will communicate research ideas informally and formally
- Students will develop skills in research project assessment and peer mentoring

**Learning outcomes:**

- Students will apply their broader knowledge of tropical biology to their personal projects
- Students will write a proposal and conduct a field research project
- Students will write a manuscript about their personal project results
- Students will present research ideas as "chalk talks" in an informal setting and as a more formal PowerPoint presentation followed by an oral exam
- Students will assess and help peers with their research
- Students will recognize the research possibilities offered at STRI and have information and contacts that could facilitate a future visit

**Readings:** Course materials will be available on the course web site on Carmen ([carmen.osu.edu](http://carmen.osu.edu)). Mendeley Desktop (<http://www.mendeley.com>) will be used to share scientific literature and as a reference manager for all documents.

**Expectations and grading:**

We expect students to prepare for the field component of the course by discussing literature and their personal field project proposal with instructors to ensure scientific interest and feasibility. Students will conduct their personal project, review and discuss classmate's projects, be present at all lectures and excursions, and actively share their research ideas. All deadlines are expected to be met, if they are not, points will be deducted.

The final grade will be based on a portfolio containing:

- 1) Written proposal in STRI Short Term Fellowship format (10%)
- 2) Short write-up about another student's project (10%)
- 3) Logbook and voucher documentation (10%)
- 4) Peer review of another student's manuscript (10%)
- 5) PowerPoint presentation and oral exam (in Panama) (10%),
- 6) Independent project and manuscript (50%)

**Grading scale:**

93% - 100% A	87.0-89.99% B+	77.0-79.99% C+	67.0-69.99% D+
90.0 - 92.99% A-	83.0-86.99% B	73.0-76.99% C	63.0-66.99% D
	80.0-82.99% B-	70.0-72.99% C-	< 59.9 E

**Diversity and Inclusion:** The Department of EEOB strives to create and maintain a welcoming climate for our faculty, staff, and students. Diversity enhances all aspects of our academic efforts including our research, teaching, and service. Diversity provides multiple experiences, generates multiple perspectives, and promotes the free exchange of ideas. We make this commitment to enhance our ability, and that of our students, to understand the biological world and apply that understanding to address problems confronting society. For more information on diversity at OSU, please see [OSU diversity resources](#).

**Academic Misconduct:** It is the responsibility of the Committee on Academic Misconduct to investigate or establish procedures for the investigation of all reported cases of student academic misconduct. The term "academic misconduct" includes all forms of student academic misconduct wherever committed; illustrated by, but not limited to, cases of plagiarism and dishonest practices in connection with examinations. Instructors shall report all instances of alleged academic misconduct to the committee (Faculty Rule 3335-5-487). For additional information, see the Code of Student Conduct at <http://studentlife.osu.edu/csc/>.

**Student Life office of Disability Services:** Students with disabilities that have been certified by the Office for Disability Services will be appropriately accommodated and should inform the instructor as soon as possible of their needs. The Office for Disability Services is located in 150 Pomerene Hall, 1760 Neil Avenue; telephone 292-3307, TDD 292-0901; <http://www.ods.ohio-state.edu/>.

## The Ohio State University Tropical Behavioral Ecology & Evolution

*\*\*Note: dates will be changed to fit the academic schedule*

1 May – **Students arrive!**

**Codes:**

Lectures

Excursions

2 May – Location: Gamboa

**Morning:** Introductions and proposal presentations; Large group discussions about independent projects

**Afternoon:** Leaf-cutter walk, training (searching for bees, ants and termites) and preparation around Gamboa and schoolhouse

3 May – Location: **Panama City** **Coaster bus and driver needed at 8am**

**Morning:** STRI Tour

9am: Introduction to STRI and STRI grants

10am: Library

11am: **Bill Wcislo** (confirmed lecture)

12:30pm: Lunch

2pm: Research discussion with the students; shopping list

4pm: **Tupper Seminar**

**Evening:** Mall stop and dinner pay by cash, Project plans and discussion

4 May – Location Gamboa, Plantation Road and School house

**Morning/ Afternoon:** Forest walk, training and preparation

**Evening:** **Koos Boomsma** – Introduction to our systems and research approach; Students will discuss research in small groups based on research interest.

5 May – Location: PLR and School house

**Morning/Afternoon:** Field trip to PLR, exploration in field (Stalking the wild attines and other insects)

**Evening:** **Rachelle Adams & Jon Shik** – Introduction to our systems and research approach

6 May – Gamboa and School house

**Morning:** Acro. field work with Koos in Gamboa.

**Afternoon:** Project preparation

1:00pm **Rachel Page Lecture** on auditory processing

**Evening:** **Allen Herre lecture TBA**; Students will discuss research in small groups based on field site (Who is doing what and where? Establishment of student collaborations.

7 May – Location: Plantation Road, PLR, Gamboa

**Morning/Afternoon:** Field work, starting independent projects (searching for focal species)

**Evening:** Frog walk in Gamboa after dinner (**STRI Scientist TBA Lecture**)

8 May – Location: Plantation Road, PLR, Gamboa

**Morning/Afternoon:** Field work, starting independent projects (baiting and searching for focal species)

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9 May – Location: Plantation Road, PLR, Gamboa

**Morning/Afternoon:** Field work, independent projects on focal species

**Evening:** Big Group Discussion about projects

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10 May – Location: Plantation Road, PLR, Gamboa

**Morning/Afternoon:** Field work, data collection, processing.

2pm Leave for the city

4pm **Tupper Seminar: TBA**

11 May – Location: Plantation Road, PLR, Gamboa

**Morning/Afternoon:** Field work, data collection, processing.

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12 May – Location: Plantation Road, PLR, Gamboa

**Morning/Afternoon:** Field work, data collection, processing and writing.

**Evening:** **STRI Scientist Lecture TBA**

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13 May – Location: Plantation Road, PLR, Gamboa

**Morning/Afternoon:** Field work, data collection, processing.

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14 May – Location: **Santa Clara (Las Veraneras Coaster bus and driver needed at 7:30am)**

**Day at the beach with course and CSE researchers!**

6:00pm Dinner for everyone attending the beach day.

**Evening:** Students plan for final week in the field!

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15 May – Location: Plantation Road, PLR, Gamboa

**Morning/Afternoon:** Field work or lab work and writing.

**Evening:** Big Group Discussion on independent projects (Do you have enough data and what you need to do to get it!)

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16 May — Location: **Metropolitan Nature Park Coaster Bus needed at 7:30am**

**Morning/Afternoon:**

8am Visit canopy crane at Metropolitan Nature Park Guided by **STRI scientist Lecture**

1:00 Lunch and Nikos

2:00 Miraflores Locks Museum

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17 May – Plantation Road, PLR, Gamboa

**Morning/Afternoon:** Field work, data collection and writing.

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18 May – Location: **Culebra Nature Center** **Coaster Bus needed at 8am**

**Morning/Afternoon:**

9:45am Arrive

10am **Fiddler crab lecture by John Christy** (Exaggeration of a sexual signal, not by female choice, CULEBRA NATURE CENTER)

2:00 Lunch near Culebra Nature Center or Naos (students pay)

4:00pm Tour at Naos Island Laboratories

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19 May – Location: **Barro Colorado Island BCI**

**-take 7:15 boat to BCI. (Must arrive at dock by 7am!)**

-Plan for a day in the field

**Morning/Afternoon/Evening:** Students visit the island

9:00 am Guided tour

12:30 Lunch

1:30 **Mike Kaspari lecture on Ant Ecology**

6:00pm Dinner

7:00pm **Bambi seminar: TBA**

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20 May – Location: Plantation Road, PLR, Gamboa

**Morning/Afternoon:** Field work, data collection and writing.

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21 May – Location: Plantation Road, PLR, Gamboa

**Morning/Afternoon:** Field or lab work and writing.

**Evening:** Clean up and write

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22 May – Location: Plantation Road, PLR, Gamboa

**Morning/Afternoon:** Field or lab work and writing.

**Evening:** Clean up and write

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23 May – Location: Plantation Road, PLR, Gamboa

**Morning/Afternoon:** Field or lab work and writing.

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24 May – Location: Plantation Road, PLR, Gamboa

**Morning/Afternoon:** Presentations

**Evening:** Course Party

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25 May – Location School house

**Morning/Afternoon:** Clean up and pack

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26 May – **Leave Panama!!**

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14 June –

Final report on independent project due!



1.1\_Draft Syllabus (see previous document)

1.2\_Preliminary list of lectures, excursions, and cultural visits (see previous document)

## 2\_Rationale for the number of credits (3 credits)

The students will be required to take a 2 credit **Scientific Writing (EEOB 6220)** course in Spring 2017 to practice scientific writing, submitting scientific permits for Panama (if necessary), and begin drafting a research proposal. Tropical Behavioral Ecology and Evolution course (TBEE 2017) will include 3 ½ weeks of in-country study followed by 5 days of writing in Columbus. Because the projects will be independently chosen by the students, the amount of time they spend on them will be variable. Part of the course will be to learn how to adjust field research so that data collection can be completed and will produce a publishable end-product. Instructors guide and advise the students but time commitment is ultimately up to the student. Approximately 10 lectures are given by instructors and STRI researchers. Flash talk presentations are given by the students and are followed by large group discussions during 5 evenings. Most in-class and field time is spent by students working independently on their personal projects. When returning to the USA, students will then analyze their data and write a manuscript. They are instructed to use the resources they have available in their departments and institutions. They will also stay in touch with a classmate and receive peer-reviewed feedback before submitting their final draft.

The 3 credit allocation is based on the above and modeled after a 12 day undergraduate Panama course already offered by EEOB (EEOB4420H) and the example provided in the OIA Credit Allocation Guideline.

### 3.1\_Audience

The primary student audience for this program will be graduate students in disciplines that require experimental research. The principles of research design, scientific communication, peer mentoring, and manuscript preparation are universal skills that are required for many OSU graduate school programs. The audience of this course is therefore very broad and we hope to recruit students from a range of science disciplines creating an interdisciplinary cohort.

This course is centered around insect-based research so that proposed projects are, 1) within the scope of the instructor's expertise; 2) able to be successfully completed in 3 ½ weeks (insects are very abundant and easy to collect in the tropics), and 3) not space demanding and can be accomplished in STRI facilities in Gamboa, Panama. In addition, if all students work on insects, it allows for a cohesive research group that can share field sites and schedules, making a course such as this, feasible and safe.

The diverse student group is encouraged to explore areas of science that teach them new skills they can apply to their personal thesis projects or work directly on a thesis project. Students in previous courses have developed field work-related tools (e.g., sampling techniques, GIS (geographic information system), transects) and lab-based skills (e.g., bacterial culturing, chemical extraction, DNA extraction, behavioral observation, insect curation).

### 3.2\_Eligibility

Students will be selected to join the course with an application process requiring a cover letter and a CV. Undergraduate students will be considered if they have a strong letter of recommendation and extensive research experience or have taken EEOB ~~3494-4498 (Research for Undergraduate Researchs)~~. All graduate students are required to either enroll in **EEOB 6220 (Scientific Writing)** in the Spring, or make special arrangements with the instructors.

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### 3.3\_Complementarity

There is no other OSU course that offers graduate level independent research in the tropics. However, the Tropical Field Ecology (TFE) course (EEOB 4420H) is complementary to the proposed Tropical Behavioral Ecology and Evolution (TBEE) course.

- 1) *TFE is aimed at undergraduates.* The TBEE course is designed for graduate students and will require more independent and self-directed learning.
- 2) *TFE focuses on large and broad ecological questions including the conservation of biodiversity.* TBEE students should already be well versed in world conservation issues. In TBEE, the students may choose to conduct a project that samples insect biodiversity and practice techniques that can scale to larger ecological questions but are mainly focused in the areas of Behavioral Ecology and Evolution. This is further emphasized by lectures that cover these topics.
- 3) *TFE is a 12 day course that visits many sites with distinct tropical forest habitats in Panama.* TBEE is a 4 week course (3.5 weeks in Panama) where the students choose their research sites based on their questions and study organisms. Although they will travel on brief excursions, the objective of the TBEE course is to learn to lead a project from the proposal stage to the publication stage. Several former TBEE students generated publishable results (Papers: Adams et al. 2013; Kooj et al. 2014; Liberti et al. In Prep.; Shik et al. Submitted; Rytter and Shik In Prep.; Posters: Neupert et al. 2015; Wall et al. 2015; Adu-Oppong et al. 2013; Tripodi 2013) and in 2015, two Italian students were able to incorporate their Panama work into their Master's thesis (likely published in 2016). This is evidence that TBEE students have the potential to further their professional development beyond taking this course.

The first seven Learning Goals for EEOB undergraduates (EE and Zoology majors) and Master's and PhD students are identical in scope but shift in proficiency level. An eighth goal is unique to the PhD students (learning to teach undergraduates). The proposed TBEE course Learning Outcomes corresponds directly with the first seven graduate program goals. Below EEOB Learning Goal numbers are added behind the TBEE Learning Outcomes to illustrate this. For more details see Appendix 1 at the end of this document.

#### Learning outcomes:

- Students will apply their broader knowledge of tropical biology to their personal projects **(1, 2, 3 PhD)**
- Students will write a proposal and conduct a field research project **(2, 3, 4, 5, 6 PhD)**
- Students will write a manuscript **(4 PhD)**
- Students will present research ideas as "chalk talks" in an informal setting and as a PowerPoint presentation **(4, 7 PhD)**
- Students will assess and help peers with their research **(2, 6 PhD)**

### 3.4\_Student enrollment and recruitment

This course was offered as an international course through the University of Copenhagen in 2011 (11 students), 2013 (9 students), and 2015 (12 students) allowing students from all over the world to enroll. Because it will now be offered for mainly OSU students, we anticipate a slight reduction in enrollment. We will allow a minimum of 8 and no more than 12 students. Exceptional undergraduates will be eligible to apply for the course (see 3.2\_Eligibility above).

Efforts will be made to recruit students from a variety of OSU programs (Agricultural and Extension Education; Biochemistry; Biostatistics; Chemistry; Earth Sciences; Education: Teaching and Learning; Entomology; Environment and Natural Resources; Evolution, Ecology and Organismal Biology; Microbiology; Molecular Genetics; Molecular, Cellular and Developmental Biology). Dr. Adams will

personally contact graduate studies coordinators of each program and request to present to the respective graduate students. Fliers will also be permanently posted in high traffic areas and in departmental offices. This course will be offered every two years therefore graduate students will be able to plan to incorporate it into their course program. The course has already gained an international reputation and we anticipate a similar standing at OSU in the future.

**4.1\_Curriculum fit and approval**

Students will be able to take this course as a Life Science elective and therefore credits can apply to any degree. The course has been discussed with the EEOB Chair (Libby Marschall) and the EEOB Curriculum Chair (Norm Johnson) and the curriculum approval process will begin shortly.

## **1\_Host Institution**

We will be hosted by the Smithsonian Tropical Research Institute (STRI) that has hosted hundreds if not thousands student groups over the years (including OSU's Tropical Field Ecology, EEOB 4420H). STRI headquarters in the Republic of Panama, is a unit of the Smithsonian Institution (Washington, DC, USA) and one of the world's leading centers for basic research on the ecology, behavior and evolution of tropical organisms.

Gamboa, Panama, is a small town made up of a friendly community of scientists and is located approximately 30 km from STRI's main headquarters in Panama City. Our students will have opportunities to meet an international community of researchers that live and work in the rainforests and streams of Soberania National Park.

STRI provides state-of-the-art laboratories and accommodations. OSU students will stay in the former "schoolhouse" that STRI has furnished as a dormitory facility for field courses that use Soberania National Park and nearby forested sites. Four large classrooms have been turned into sleeping quarters. There are two bathrooms with showers. There is a single room with a half-bath for the course leader, a washer and dryer, and a fully equipped kitchen. A cook and cleaning staff are provided and the whole facility is air conditioned. Two additional classrooms have been appointed as a dining room (lined with chalk boards) and a projection facility (a slide projector, a screen and an overhead projector are available).

I have been working at STRI as a researcher since in 1999. Not only do I know the STRI scientists but I have worked directly with the STRI Academic Programs staff to organize three courses (TBEE 2011, TBEE 2013, and TBEE 2015). They handle all in-county logistics (bus and van rentals) and excursion scheduling (e.g., BCI, Metropolitan Nature Park, Culebra Nature Center) as well as provide a presentation by Safety officer José Ramón Perurena.

## **2\_Health, welfare, safety, and security**

STRI takes extra precautions when it comes to the safety of students and researchers (<http://www.stri.si.edu/ss/>). In addition to the presentation by Safety officer José Ramón Perurena there are online resources that the students are reminded of throughout the course. Students are not allowed to work alone in the field and groups always have a cell phone and a first aid kit for emergencies.

The TBEE students will be staying in an area that is regularly sprayed to control the local mosquito population. We still ask that all students wear full pants, tall rubber boots, and long-sleeved shirts when in the field or walking at night. We also provide the students with Deet-based bug repellent and regularly remind them to be diligent to avoid mosquito bites. The schoolhouse dormitory is sealed and does not have mosquitos.

Snake bites are rare but still a possibility therefore we require all students to where tall rubber boots (helps protect the legs in case of a snake strike). We also take students out on orientation walks, show pictures of snakes they will likely see, and caution them against carelessly touching vegetation or the ground without first inspecting it for snakes.

For more information regarding safety and security in Panama see (Appendix 2 and Appendix 3) or go to: <http://travel.state.gov/content/passports/en/country/panama.html>

### 3\_OIA Program Information sheet DRAFT

## COURSES AND CREDITS

Upon successful completion of the program, students will receive 3 semester hours of Evolution, Ecology and Organismal Biology 6350.

## ACCOMMODATIONS

Students will stay in dormitory-style housing and meals are provided by the Smithsonian Tropical Research Institute. The group will be based at the Gamboa Field Station, located near Soberania National Park.

## PROGRAM COSTS

Students are responsible for paying The Ohio State University tuition plus a \$#,### program fee. The program fee includes domestic and international travel, room and most board and in country instruction. It does not cover personal expenses and some meals.

This program has been generously subsidized by the College of Arts and Sciences.

If students withdraw or become ineligible any time eleven days after the acceptance notification, they will be held responsible for a cancellation fee. Please refer to OIA's [Cancellation Policy](#).

## APPLICATION INFORMATION

Applicants must submit the Office of International Affairs Study Abroad Application online via [Buckeyelink](#). Please note that upon application, a \$150 application fee will be assessed to your Statement of Account. The application fee will be refunded only if you are not accepted or submit a written request to withdraw your application prior to the application deadline.

## SCHOLARSHIPS

Students should begin researching [funding opportunities](#) before they have been accepted into a study abroad program. [Grants and Scholarships](#) deadlines may occur before the study abroad program application deadline.

## SPECIAL PETITION PROCESS

Participation in programs located in a risk designated country is by special petition only and students must complete a petition at the time of acceptance. If a risk designation is established after acceptance to the program, the International Travel Policy Committee will review the current health and safety conditions within the specific country to determine if the program will proceed. Should the Committee approve the program, students are required to submit a petition acknowledging they have read the travel warning and recognize the risk involved.

## ELIGIBILITY

In order to be eligible to apply for this program, students must be either in a graduate program or have an exceptional application (see undergraduate requirements below).

- Graduate student applications must include a detailed cover letter describing research interests and the reasons for wanting to take the course and an updated CV.

- Undergraduate students will be considered if, in addition to the above, they have research experience or have taken EEOB 3494 (Research for Undergraduates). They must also provide a letter of recommendation from a faculty member.

All students must meet OIA's [General Eligibility Requirements](#) and [Conditions for Participation](#) and enroll in EEOB 6220 (Scientific Writing) in the Spring semester before the course (or make special arrangements with the instructors). All students will also be required to participate in on-campus pre-departure orientations organized by the Office of International Affairs.



SEARCH

[travel.state.gov](#) > [Passports & International Travel](#) > [Country Information](#) > **Panama**[Print](#) [Email](#)

## Panama

Official Name: *Republic of Panama*

LAST UPDATED: AUGUST 22, 2014

### Embassy Messages

[More](#)

### Quick Facts

- **PASSPORT VALIDITY:**  
Passport must be valid for three months after entry.
- **BLANK PASSPORT PAGES:**  
One page required for entry stamp.
- **TOURIST VISA REQUIRED:**  
Not required for stays less than 180 days. USD\$50/month fine for overstay. Immigration may grant extensions if requested before 180 days are complete.
- **VACCINATIONS:**  
Suggested: hepatitis A, hepatitis B, rabies, and typhoid. Routine immunizations recommended in the U.S. should be up to date prior to traveling to Panama. Travelers coming from countries where yellow fever is endemic must have had a yellow fever vaccination in order to enter Panama.
- **CURRENCY RESTRICTIONS FOR ENTRY:**  
Currency in excess of USD\$10,000 must be declared.
- **CURRENCY RESTRICTIONS FOR EXIT:**  
Currency in excess of USD\$10,000 must be declared.

[Expand All](#)

#### **Embassies and Consulates**

#### **Destination Description**

#### **Entry, Exit & Visa Requirements**

#### **Safety and Security**

Avoid travel to remote areas of the Darién Province off of the Pan American Highway. U.S. Embassy personnel are not allowed to travel to the restricted border areas of the Darién and San Blas Provinces except on official business and only with prior approval of the Embassy's Regional Security Officer and Deputy Chief of Mission. This restricted area encompasses the Darién National Park as well as some privately owned nature reserves and tourist resorts. The general remoteness of the region contributes to the potential hazards. Due to scarcity of roads, most travel is by river or by footpath. This, combined with spotty medical infrastructure outside of major towns, makes travel there potentially hazardous. While the number of actual incidents remains low, U.S. citizens, other foreign nationals, and Panamanian citizens are potentially at risk of violent crime, kidnapping, and murder in this general area.

There have been reports of Colombian terrorist groups, drug traffickers, and other criminals operating in the Panama-Colombia border area, increasing the danger to travelers. The Revolutionary Armed Forces of Colombia (FARC) has been known to make incursions into remote areas of Panama's Darién Province. The Secretary of State has designated the FARC as a Foreign Terrorist Organization.

Similarly, U.S. citizens should not travel to the area of Panama referred to as the "Mosquito Coast," an extremely remote and inaccessible area along the Panamanian north coast bounded by Boca de Rio Chiriquí on the west and Coclé Del Norte on the east and stretching inward from the coast for five kilometers. Embassy personnel are allowed to travel to this area only on official business and with prior approval of senior Embassy management. Access to the region is almost exclusively by boat and/or aircraft. The area may also have a few unimproved roads and/or paths that are not marked on maps. This may be particularly true in the mining area along the Petaquilla River. Sections of this coastline are used for narco-trafficking and other illegal activities.

From time to time, there may be demonstrations to protest internal Panamanian issues or, more rarely, manifestations of anti-American sentiment by small but vociferous groups. While most demonstrations are non-violent, it is nonetheless a good security practice to avoid demonstrations. The Panamanian National Police have used tear gas and/or riot control munitions in response to demonstrations, particularly when roadways are blocked or aggression is used against the police.

Protestors have on occasion blocked remote roadways and the Pan American Highway. During these road closures, the security situation can be tense with a potential for violence between Panamanian authorities and protestors. For the most recent information on possible road closures, the Embassy advises U.S. citizens to monitor local news and consult local police.

Visitors should be cautious when swimming or wading at the beach. Some beaches, especially those on the Pacific Ocean and those in Bocas del Toro Province, have dangerous currents that cause drowning deaths every year. These beaches often do not have posted warning signs or lifeguards.

On the Pacific and Atlantic coasts, boaters should be wary of vessels that may be transporting narcotics, illicit materials, and illegal immigrants to and from Colombia. Bales and wrapped packages containing narcotics have been found floating in the ocean or lying on remote beaches. Boaters and beachgoers are warned to avoid these items and not pick up or move these packages, and to immediately report their location to the Panamanian

authorities.

Special permission is needed from the National Environment Authority to visit the National Park on Coiba Island. The island is an abandoned penal colony, although on occasion, prisoners are sent there to care for the animals. Boaters should avoid the southeastern coast of Kuna Yala Comarca (San Blas Islands), south of Punta Carreto, on the Atlantic Coast.

Local maritime search and rescue capabilities are limited and well below U.S. standards. If you are experiencing an emergency at sea or know of someone who is experiencing an emergency off the coast of Panama, please contact the U.S. Embassy immediately who will contact the Panamanian authorities.

To stay connected:

- Enroll in the [Smart Traveler Enrollment Program](#) so we can keep you up to date with important safety and security announcements.
- Bookmark the [Bureau of Consular Affairs website](#), which contains the current [Travel Warnings and Travel Alerts](#) as well as the [Worldwide Caution](#).
- Follow the Bureau of Consular Affairs on [Twitter](#) and [Facebook](#), and follow the U.S. Embassy in Panama on [Twitter](#) and visit the [Embassy's website](#) as well.
- In the event of an emergency, contact us at 1-888-407-4747 toll-free within the U.S. and Canada, or via a regular toll line, 1-202-501-4444, from other countries.
- Take some time before traveling to consider your personal security, and check for useful tips for [traveling safely abroad](#).

**CRIME:** Panama remains relatively safe when compared to other Central American countries, yet crime rates are still higher than one would encounter in most of the United States. Violent crime in Panama started to rise in 2007. However, new efforts by Panama's National Police (PNP) to combat this trend appear to have made an impact. The number of homicides in the country has declined continuously since 2010. Unfortunately, the rate of simple theft has risen, with smart phones being a particular target. The three provinces with the largest cities also had the highest overall crime rates: Panama, Colon, and Chiriqui. The entire city of Colon is a high crime area; travelers should use extreme caution when in Colon.

Police continue to conduct vehicle checkpoints at key intersections in the city in an effort to raise their visibility and hamper criminals' movements. The high crime areas in and around Panama City are El Chorrillo, San Miguel, Santa Ana, Cabo Verde, Curundu, Veracruz Beach, Santa Librada, Rio Abajo, San Miguelito, Panama Viejo, and the Madden Dam Overlook.

Crimes are typical of those that plague metropolitan areas and include shootings, rapes, armed robberies, muggings, purse-snatchings, thefts from locked autos by breaking windows for entry, thefts of unsecured items, petty theft, and occasionally "express kidnappings" from ATM banking facilities, in which the victim is briefly kidnapped and robbed after withdrawing cash from an ATM. There has also been a recent spike in the number of credit card and ATM card fraud reports. Criminals are capturing credit and ATM card information to clone and create fraudulent cards. Kidnappings have occurred in Panama City, many of which appear related to drug or criminal activity.

There has also been a recent increase of thefts from cars. We encourage travelers and residents to take all valuables out of their cars and place them in their trunks before they get to their destinations. Drivers should keep



their windows up and doors locked while in the car to prevent items from being stolen when stopped in traffic or at traffic lights.

Use caution when taking taxis. Use only licensed and registered taxis. Check to see that the number on the side of the taxi matches the number of the license plate. Ensuring the car is a registered taxi with a number on the side is a quick way to help prevent any incidences. Regular taxis are yellow in color. Also, never get into a taxi that already has a passenger and instruct the driver not to pick up any additional fares while en route to your destination. Many hotels also have "tourist taxis" that are not yellow but only pick up passengers in front of well-known hotels.

U.S. citizens are advised to never let a "helpful" stranger direct you to a particular taxi or taxi stand, and always negotiate the fare before getting in to ensure a fixed price.

The use of weapons (handguns and knives) is common in street robberies; however, gratuitous violence is uncommon as long as the victim complies and hands over the property. In 2013, there was an increase in violence during theft. Home burglaries and, more worrying, home-invasion robberies do appear to be on the rise, especially in the more affluent neighborhoods. Panama City has a curfew for those younger than 18 years of age that is generally from 8:00 p.m. to 6:00 a.m. Sunday through Thursday and 11:00 p.m. to 6:00 a.m. Friday and Saturday. The times are subject to change depending on your location within Panama. If you are concerned about the exact time, you may contact local police. This curfew applies to both Panamanian and foreign citizens. Under the law, students attending night classes must have a "carnet" or permit, issued by the school or, if employed, a Certificate of Employment. Minors who are picked up for a curfew violation are subject to detention at a police station until parents or legal guardians can arrange their release to them. Parents or legal guardians may be fined up to USD\$50 for the first violation.

Panamanian customs authorities may enforce strict regulations concerning temporary importation into or export from Panama of items such as firearms and ammunition, cultural property, endangered wildlife species, narcotics, biological material, and food products. Contact the Embassy of Panama in Washington or one of Panama's Consulates in the United States for specific information regarding customs requirements.

Do not buy counterfeit and pirated goods, even if they are widely available. Not only are the bootlegs illegal in the United States, if you purchase them you may also be breaking local law. The [Computer Crime and Intellectual Property Division in the U.S. Department of Justice](#) has more information on this serious problem. For further information about customs regulations, please read our [Customs Information page](#).

**VICTIMS OF CRIME:** If you or someone you know becomes the victim of a crime abroad, you should contact the local police and the nearest U.S. Embassy or Consulate. We can:

- Replace a stolen passport.
- For violent crimes such as assault or rape, help you find appropriate medical care.
- Put you in contact with the appropriate police authorities, and, if you want us to, we can contact family members or friends.
- Although the local authorities are responsible for investigating and prosecuting the crime, consular officers can help you understand the local

criminal justice process and can direct you to local attorneys.

The Panamanian Government also sponsors a program to assist victims of crime. The program is managed by the Oficina de Asistencia a Víctimas de Crímenes (Office of Assistance to Victims of Crime), located at the Policia Tecnica Judicial in the Ancon area of Panama City. Its telephone number is 512-2222.

As in the United States, the emergency line in Panama is 911. The police can be reached directly by dialing 104.

Please see our [information on victims of crime](#), including possible victim compensation programs in the United States.

### **Local Laws & Special Circumstances**

### **Health**

### **Travel & Transportation**

[Please see Fact Sheet for this country.](#)

#### **Assistance for U.S. Citizens**

**U.S. Embassy Panama**  
**Avenida Demetrio Basilio**  
**Lakas,**  
**Building No.783**  
**Clayton, Panama**

- **Telephone**  
+(507)-317-5000
- **Emergency After-Hours Telephone**  
+(507) 317-5000
- **Fax**  
+(507) 317-5568
- **Email**  
[Panama-ACS@state.gov](mailto:Panama-ACS@state.gov)
- **[U.S. Embassy Panama](#)**



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Learning or Course Goal	Learning Outcome or Objective (content/topic + behavior)	Formative Assessment (In class activity or homework)	Summative Assessment (exam question)	Program Goals (# & level)
<b>What will students <u>learn</u>?</b>	<b>If they have learned it, what will students <u>know</u> and be able to do?</b>	<b>What will students <u>do to learn it</u>?</b>	<b>How will students <u>demonstrate they know it or are able to do it</u>?</b>	<i>*Specific phrases have been pasted or paraphrased from the EEOB PhD level learning goals.</i>
Students will appreciate tropical animals, plants and fungi with particular emphasis on social interactions and symbioses	Students will apply their broader knowledge of tropical biology to independent projects	Students will attend lectures by STRI staff and see tropical organisms in the field and in the laboratory	Students will demonstrate what they have learned through in-class and in-field discussions	<p><b>1 PhD:</b> understanding of the processes that underlie evolution, and with their manifestation in the natural world</p> <p><b>2 PhD:</b> understanding of interactions among organisms and their environment.</p> <p><b>3 PhD:</b> understanding of organismal diversity and functioning at all levels</p>
Students will understand the principles of proposal writing and research design	Students will write a proposal and conduct a field research project	<p>-Before arriving in Panama, students will draft their proposal and receive feedback on their writing, experimental design and feasibility of their project.</p> <p>-In Panama, students will hand in their final proposal drafts and conduct their research, adjusting their approach</p>	Students will hand-in a proposal in the format of a STRI Short Term Fellowship application, including a CV. This will be graded but may also be submitted to STRI for funding.	<p><b>2 PhD:</b> understanding of ecological concepts and methods of study</p> <p><b>3 PhD:</b> understand the interplay between organismal functioning and ecological and evolutionary processes</p> <p><b>4 PhD:</b> ability to work as independent researchers by learning to conduct original research following ethical standards of research conduct.</p> <p><b>5 PhD:</b> ability to use mathematical</p>

		when necessary.		and statistical concepts <b>6 PhD:</b> knowledge of the theoretical framework of evolution, ecology and organismal biology and understand science as a process
Students will develop skills in manuscript preparation	Students will write a manuscript	Students will peer-review a classmate's manuscript and write their personal research outcomes in a Biology Letters format.	The peer-review and final manuscript will be graded.	<b>4 PhD:</b> communicate the results of research in written form following standards in the field
Students will communicate research ideas informally and formally	Students will present research ideas as "chalk talks" in an informal setting and as a more formal PowerPoint presentation at the end of the course	Students will present to the class their expected or current results at least 4 times while in Panama	-PowerPoint slides and presentations will be graded by the instructors -Students will take an oral exam following their presentations	<b>4 PhD:</b> communicate the results of research verbally to peer audiences <b>7 PhD:</b> will be able to communicate scientific concepts and processes
Students will develop skills in research project assessment and peer mentoring	Students will assess and help peers with their research	-Students will offer verbal feedback to their peers following all presentations -Students will spend one day as a "field assistant" to learn about their classmate's project -Students will peer-review the final manuscript of a classmate	-Following the day as a "field assistant", students will be required to write a summary about their classmate's project and make suggestions to improve it (graded assignment) -The peer-review will be graded	<b>2 PhD</b> advanced understanding of ecological concepts, methods of study, and the interactions among organisms and their environment <b>6 PhD</b> understand science as a process

<b>In addition:</b>				
Students will learn about the infrastructural aspects of tropical research (e.g. canopy cranes; permanent monitoring plots; STRI resources)	Students will recognize the research possibilities offered at STRI and have information and contacts that could facilitate future visits	Students will attend STRI tours and lectures, visit various field sites, and use STRI resources	Students will fill out an evaluation form at the end of the course that asks about their understanding of STRI infrastructure and if they would like to return for future research	This goal facilitates the potential for students to develop areas <b>1-4 PhD</b> following this course