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Campbell University - Study Abroad Course Proposal Document

A. Course Information

1. Title of course:

"Global Studies – Hawai'I"

2. Name of sponsoring department/college:

Department of Biology/College of Arts and Sciences

3. Dates/duration of course:

First summer session of the 2010 academic year. The trip will last from 3 to 4 weeks. Depending on the success of the course after its first year, the course may be repeated on an annual or biennial basis.

4. Location of course:

Islands of Kaua'i, O'ahu and Hawai'i; future course destinations may include Alaska and Panama.

5. Institutional affiliations during course:

The Hawai'i course will rely heavily on cooperation with staff at The National Tropical Botanic Garden, The Bishop Museum, The Nature Conservancy of Hawai'i, The University of Hawai'i at Manoa, Scofield Barracks Military Reservation, and the Hawai'i Department of Forestry and Wildlife.

6. Director of course:

Dr. J. Christopher Havran, Department of Biology, X 1732, havran@campbell.edu
Dr. Havran has conducted extensive research on the ecology and evolution of native Hawaiian plant species. His dissertation research, conducted over four years at Ohio University, involved three separate trips to the Hawaiian archipelago lasting from 3 to 6 weeks each. During these research trips, he worked closely with land managers and researchers throughout the archipelago to describe the evolution of the endemic Hawaiian violets using ecological, physiological, molecular systematic, reproductive, and geological data. He has traveled extensively throughout the archipelago, especially on the islands of Kaua'i, Moloka'i, and O'ahu.

7. Description of course:

The Hawaiian Islands are one of the most culturally and biologically rich regions on the globe. The five main islands of the archipelago (Kaua'i, O'ahu, Moloka'i, Maui, and Hawai'i) are distributed along a chronosequence from youngest (Hawai'i) to oldest (Kaua'i). Despite their relatively small size, each island possesses a large variety of habitat

types (marine, grassland, desert, bog, alpine, cloud forest) that are distributed largely along an elevation gradient. The large diversity of habitat types supports an equally diverse assemblage of plant and animal species, many of which are found nowhere else on earth. The rich diversity of habitat types, flora, and fauna serve as living laboratories for scientists studying nearly every aspect of biology.

The Hawaiian Islands have also facilitated the establishment and enrichment of cultures from around the globe. The islands have at one point or another been ruled by 5 different nations, each imparting its own culture and traditions. The endemic Polynesian traditions have most recently been enriched with cultural contributions from the United States, Japan, and China. In addition, each island is remarkably different from the next. Hawai'i, the largest island, contains the largest populations of native Hawaiians in the world, and serves to anchor the archipelago in tradition while continuing to grow from its rugged volcanic shorelines. The island of O'ahu, known as the "gathering place", contains Honolulu, the largest city in Polynesia. Serving as a melting pot for the entire pacific region, the city is only a short drive from pristine rain forests and dry forests, containing many plants and animals found nowhere else on the globe. Finally, Kaua'i: the "garden isle", is a lush paradise with a laid-back atmosphere. Population centers in the southeast give way to heavily eroded canyons and high-elevation bogs in the northwest, each easily accessible and home to unique plant and animal assemblages.

Unfortunately, along with the large influx of cultures to the Hawaiian archipelago has also come an influx of invasive and non-native species. Intrusive plants and animals have destroyed much of the native habitats across the archipelago. This, coupled with the encroachment of human settlements into formerly native areas, has resulted in endangerment of most of the native Hawaiian plants and animals. Many plants and animals are tied closely to the native Hawaiian culture. Efforts to rescue the native plant and animal life are rapidly underway, but increased work and education are needed to preserve the unique culture and diversity of the Hawaiian Islands.

The proposed course will immerse Campbell University students in the broad spectrum of biological and cultural diversity of the Hawaiian Islands. The course will be heavily field-oriented, with students conducting primary research regarding the evolution and ecology of native, and sometimes endangered plant and animal species in a variety of different habitat types. In addition to learning and applying field biology techniques, students will meet with and work alongside conservation biologists attempting to restore the native habitats of the Hawaiian Islands. These activities will provide students an opportunity to serve as stewards over the earth, a principle consistent with the Christian mission of Campbell University. In addition, passive and active observations will be made on agricultural practices and economically important crops, human impacts on the environment, and cultural factions of the Hawaiian archipelago. The course will allow students to apply their education from Campbell University to world-wide environmental issues.

B. Course Objectives, Content and Structure

1. Specific educational objectives of the course:

Offer an intensive field course for the sciences that facilitates the synthesis and reflection on Campbell University's Liberal Arts education program. Special emphasis will involve the evolution and ecology of plant and animal communities in oceanic island systems. Students will develop skills in terrestrial plant identification, vegetation sampling, measurements of soil and water chemistry, and engagement in hands-on research on scientific questions pertaining to oceanic island ecosystems. The course will also provide an experience that facilitates intimacy with local cultural foods, traditions and daily life, and fosters interactions with in-country faculty and students at participating institutions.

2. Description of field experiences, practical training, internship, or community service activities offered by the course:

The bulk of the course is field-based and will focus on exposing the students to evolutionary adaptations of plants and animals in different altitudinal zones, educating them on identification of characteristic plant and animal genera in each zone, and train them in the application of field skills essential to systematics, ecology and evolutionary studies. Guest lectures will be provided by in-country professional biologists, and their participation and that of their students in various aspects of the field course will be encouraged.

3. Description of non-classroom activities to be sponsored by the course (field trips, site visits, and extra-curricular excursions):

The field course will be (of course) field-oriented. Various site visits to natural and agricultural areas will be an essential biology-related component of the course.

Island of Hawai'i:

On the island of Hawai'i, students will stay in Volcanoes National Park, on the southeastern coast of the island. Through studies of satellite images, geology, and plant distribution, students will witness and analyze primary succession of the Hawaiian archipelago at the point at which the islands are currently building. On the southwestern side of the island, students will visit the famous Kona coffee plantations. Interviews with plantation managers and tours of the plantations will provide a historical perspective of how island geology has impacted the historical development of the archipelago as well as the devastating impact of economic development on natural systems. Side visits may involve visits to the Mauna Kea astronomical observatories and regional beaches.

Island of Kaua'i:

On Kaua'i, students will reside in the Koke'e State Park in newly renovated cabins. At the park, students will conduct additional plant and soil surveys of the oldest region of the archipelago. Through comparisons with ecological data gathered from Hawai'i, students will provide evidence for habitat maturation across the archipelago. Students will also work closely with local biologists to study and restore portions of destroyed habitat to a semi-natural state. These activities will provide a sense of ownership towards the native

Hawaiian flora and fauna, and a sense of stewardship towards their environment. Additional studies may be conducted to collect raw materials for future research projects at Campbell University. Side visits may involve snorkeling trips to the southern shore of the island, a traditional luau, and regional beaches.

Island of O'ahu:
On O'ahu, students will reside at the East-West Center on the campus of the University of Hawai'i at Manoa. The East-West Center strives to "contribute to a peaceful, prosperous, and just Asia Pacific community by serving as a vigorous hub for cooperative research, education, and dialogue on critical issues of common concern to the Asia Pacific region and the United States." O'ahu is known as the "gathering place" and the unique atmosphere at the East-West Center will serve as a site for the students to synthesize their data and reflect on the cultural and ecological data they have accumulated during their stay in Hawai'i. At the University of Hawai'i, students will meet with and interview ecologists of the Scofield Barracks Military Reservation to learn about their methods of habitat restoration across O'ahu. Students will also conduct research and conservation activities alongside military ecologists at Scofield Barracks. Additional excursions will be made to the herbarium of the Bishop Museum of Natural Science. Students will tour the departments of biology and botany at The University of Hawai'i and will learn about reproductive mechanisms of Hawaiian plants and animals from professors in the department of Plant Biology. Side visits may involve visits to the Pearl Harbor National Historic Site, Waikiki Beach, and O'ahu's North Shore villages.

4. Description of provisions made for immersing students into the local culture and ensuring interaction between students and local citizens:

In Hawai'i, students will live and eat meals in inexpensive hostels or state or national park lodging facilities used as "base camps" on different islands. Students will share supper at a traditional luau on one evening. Students will also work alongside in-country students in the field or at the host institution.

5. Description of how the site was chosen and evaluated:

The course will be taught in Hawai'i, where the instructor has ongoing research projects, and where arrangement of logistics for a field course is relatively straightforward. Three islands have been identified as high priority for research visits, and because they span the geologic time period (oldest to youngest islands) and ecological diversity of the Hawaiian archipelago. Specific sites to be visited and studied on each island will represent very well the altitudinal gradient from tropical rain forest coastline up to montane bogs. Study areas are easily accessible, not too far from medical facilities, and have inexpensive lodging and food associated with them or near them.

6. Description of housing and meal arrangements:

In Hawai'i, students will live and eat meals in inexpensive hostels or state or national park lodging facilities used as "base camps" on different islands. Meals will be taken in city/village restaurants, fixed ourselves from grocery items, or taken on day trips into the

field. On O'ahu, students will stay at the East-West Center on the campus of the University of Hawai'i at Manoa; on Kaua'i, at Koke'e State Park Cabins; and on Hawai'i, at Arnott's Lodge and Mauna Kea State Recreation Area cabins.

9. Description of on-site health care facilities:

On O'ahu: Queen's Medical Center, 1301 Punchbowl St., Honolulu (808-538-9011); and several others in greater Honolulu. On Kaua'i: Wilcox Memorial Hospital, 3420 Kuhio Hwy, Lihue (808-245-1100); and West Kaua'i Medical Center, Waimea Canyon Drive, Waimea (808-274-3901). On Hawai'i: Hilo Medical Center, Hilo (974-6800).

10. Description of how the course will be marketed to students:

Information for the Hawai'i course will be posted on the Campbell University website. Course information will also be made available at public student events through the academic year. Information will be further distributed through informational meetings, in order to provide students the opportunity to increase their financial aid to cover field course expenses. Fliers will also be posted throughout the university and sent to the Study Abroad offices. The website will be an increasingly effective recruitment tool.

11. Description of the pre-departure orientation:

Confirmed participants must take a 2-credit seminar covering all aspects of the region in Spring semester for the Summer session field course. Seminar meetings will also serve as travel and research briefings. One early briefing session will cover issues of tuition and billing, course activities and insurance; other briefing sessions will cover packing details and issues related to the field itinerary. Another session will cover "scientific method" and hypothesis testing, and specifics of the research projects in which students will participate.

12. Description of how the student's experience will be integrated upon return to campus (re-entry activities, student publications, exhibits):

Two evening de-briefings will be held for student evaluations of the course and for brainstorming on innovations to subsequent courses. Potluck supper-slide shows will review personal experiences in an informal environment. Students will construct their own web pages with text and images capturing personal highlights of the field course. Students will be strongly encouraged to continue research from the course with the instructor in the semesters following the return to Campbell University.

C. Correspondence from Supporting Colleagues/Institutions across Hawai'i:

1. **Kapua Kawelo**
   Directorate of Public Works
   United States Army Garrison – Hawaii

   I would be happy to participate as a conservation career person and as someone working on conserving Hawaii's natural resources. I'm ccing your email to our outreach specialists. They could help coordinate the field excursion/work trip and I or another colleague could present a "lecture" about the work we do for the Army's Environmental Office. Congratulations on the new position.

2. **Kim Welch & Candace Russo**
   Environmental Outreach Specialists
   Army Natural Resource Program

   We would love to help facilitate a day in the field for your biology students. I've outlined a typical field/work day to help with your proposal. Feel free to contact myself, or Candace (contact info below) with questions and keep us informed of the progress.

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   Our program (the O`ahu Army Natural Resources Program) offers outreach opportunities for the community to learn about native Hawaiian plants and animals through volunteer service.

   We could provide a day-long project where folks participate in an interpretive hike through a native forest on O`ahu, followed by a couple hours of natural resource management service work (e.g. invasive weed control, common native outplanting, seed collection, etc).

   The service project and location will depend on the time of year (Dec-Feb is our outplanting season).

   We typically limit the group size to 10-15 people (minimum of 5). We will provide transportation to and from the volunteer service site. Our meeting site is usually here at our baseyard in Wahaiawa.

   Locations include: Palikea (Southern Waianae Range, elev. ~3000 ft.); Kahanahaiki (Northern gulch of Makua Valley, elev. ~2200 ft.); Mt. Ka'ala (elev. 4025 ft.); Kahuku Forest (Northern Ko'olau Range, elev. 500-1000 ft.). Most Service projects in these areas focus on controlling invasive weed species in native forests.

   We like to schedule these volunteer trips on Fri, Sat, or Sun.

   A typical days schedule would be as follows:

Kahanahāiki Volunteer Work Day - tentative schedule
8:00 a.m. Arrive at
Wahiawa Baseyard
8:15-9:15 Drive to
Kahanahāiki (Pahole Access Rd.)
9:15-9:30 Welcome, Safety Briefing, Bathroom break
9:30-10:15 Hike to Project Site
10:15-10:30 Project Demonstration
10:30-12:30 Weed Control Project
12:30-1:00 Lunch
1:00-1:30 Interpretive hike
1:30-2:30 Hike out to Parking area
2:30-3:00 Clean-up/Load up vehicles
3:00-4:00 Return Drive to Wahiawa Baseyard

3. **David H. Lorence, Ph.D.**
   Director of Science
   National Tropical Botanical Garden

   Glad to year you have successfully defended your dissertation and now have a faculty position. I've forwarded your message to our director of Education, Dr. Tavana, as they usually coordinate classes and courses such as you propose. What sort of time frame are you thinking about for the session? Multiple classes and field excursions? Would NTBG staff receive compensation for their time? I'd like to know what sort of time commitment would be involved and other details before agreeing to participate. Also, at least one other university group spends time at NTBG each summer in August, so housing is in high demand at this time.

4. **Don Drake, Ph.D.**
   Associate Professor of Botany
   Department of Botany
   University of Hawai'i at Manoa

   If I am here and available, I would be willing to talk to your class. However, I really can't commit to anything that far down the road. At any point during the typical summer, there's a 50:50 chance I'll be away. Sorry I can't be more definite.