

**Annual Study Center Review
CIEE Tropical Marine Biology and Conservation Program in Bonaire
Summer
2007**

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CIEE Academic Consortium Board Program Evaluation: N/A

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Each summer, program directors write a Study Center Review for each CIEE Study Center program commenting on the previous academic year. The program director writes the review based on input from the CIEE Academic Consortium Board members, resident directors, sending institutions, and student evaluations. Each report is made public on the CIEE website at www.ciee.org.

Program Goals

The CIEE Tropical Marine Biology and Conservation in Bonaire is designed for students with biology-related majors who have completed at least one semester of biology or environmental science and seek an intensive and innovative two-week classroom and field-based academic program focused on diverse tropical ecosystems in the Southern Caribbean with a focus on marine plant and fish life.

The program goals were fully met through the specially-designed CIEE course and its accompanying co-curricular activities.

Previously (summer 2005 and 2006), faculty and staff from Indiana University were instrumental in implementing this program on behalf of CIEE. CIEE is grateful to their assistance. In July 2006, CIEE hired a full-time resident director and the summer 2007 program was led entirely by CIEE staff.

The 2006 monitoring process recommended that the resident staff implement a distinct orientation that was separate from the regular academic program and to ensure that vegetarian meal options were included.

New & Noteworthy Features

Academic

During orientation, some basic phrases in Papiamentu are covered so that students can use them in local interactions. However, English is widely spoken on the island and is the language of instruction for all courses.

This intensive, two-week program offers one required three-credit course entitled, Marine Biology and Ecology in the Southern Caribbean. The course incorporates classroom-based and field-based learning and was co-taught by the Resident Director, Dr. Rita Peachey and the Assistant Resident Director, Caren Eckrich. The course underwent some content changes in the past year to better reflect the course title. In summer 2007, the course focused on the marine environment rather than the marine and terrestrial environment. The course introduces students to basic ecological and biological principles such as competition, diversity, symbiosis, disturbance, adaptation,

reproduction, as well as basic identification of the major taxa living in coral reef ecosystems. SCUBA and snorkeling excursions to the coral reef supplement the lectures and teach scientific research methods for studying marine ecology. The course was very well evaluated by students.

The program integrates out of classroom learning as an integral part of the academic program. As part of the overall academic curriculum, students completed 12 dives around Bonaire and Klein Bonaire. During these dives, students learned to identify various underwater species of fish and coral, observe the behavior of these various species, and learn various field research techniques.

On land, students visited the following locations as part of the organized academic out-of-classroom activities:

Washington-Slagbaai National Park
Flamingo Reserves (Pekelmeer, Gotomeer)
Slave huts on the south of the island
Willemstoren lighthouses
Bonaire Prawn, a shrimp aquaculture site
Boca Onima, a gallery of Indian paintings

Students also snorkeled in four sites on the island including a serendipitous experience of snorkeling along the coastline with dolphins spotted during an excursion to the lighthouse.

Non-Academic

Participants were able to search for sea turtle nests in Lac Bay with the Sea Turtle Conservation of Bonaire. Students participated in a kayak tour of the mangroves in Lac Bay.

CIEE Orientation

In summer 2007, resident staff implemented a distinct orientation, which was recommended by the 2006 monitoring process. The orientation included group icebreakers, information on living in Bonaire (cultural awareness, environmental issues such as conservation of water & electricity), practical information about living at the center, academic information on the course, and understanding safety and security guidelines. In addition, students learned some basic Papiamento phrases and identified their individual learning goals. The orientation was well evaluated by participants.

Housing

All participants live at the CIEE Research Station. Due to the fact that there were only five participants; each student had their own room with a private bath. All meals are taken at a restaurant across the street. Accommodations and meals were evaluated as excellent by participants, including a vegetarian student who was very pleased with meal options.

Shopping, restaurants and cafes are all within walking distance of the center. The program offers meals across the street at a local bistro; students evaluated the food very highly but indicated they would the flexibility to prepare breakfast on their own at the center, which CIEE will ensure in the upcoming academic year.

Diving Safety

By the time this report is printed, CIEE Bonaire will be an organizational member of AAUS (American Academy of Underwater Sciences). AAUS is an organization that provides guidelines for dive safety and enjoys a global membership including universities in the US and Australia, American governmental organizations like NOAA and consulting agencies. CIEE Bonaire adheres to the dive safety guidelines and Rita Peachey and Caren Eckrich attended the AAUS Annual Symposium in March 2007 for training. Caren Eckrich is the site's Dive Safety Officer.

Community Engagement and Integration

As the program is only two weeks in length and very intensive academically, students have little time to participate in either a for-credit or non-credit internship or volunteer service in addition to their challenging coursework.

Challenges & Future Directions

Academic Challenges

The course was well received by students, although they did cite that it was very intensive.

Non-Academic Challenges

Laboratory supplies for the plankton lab were not readily available. In many cases, laboratory equipment like microscopes, and underwater fluorescent flashlights had to be shared among 5 students.

Students that are not certified divers arrive one day earlier to complete their open water dives (please note that students must complete all pool and coursework prior to arrival). Regardless, resident staff noted that all students wanted to review their skills and try out their equipment prior to the start of the academic course.

Future Directions

The resident director plans to shift the schedule in summer 2008 to provide larger periods of blocked time for students to complete readings and assignments. In addition, required readings will be available one month prior to the program start date for all participants.

Program dates will shift in summer 2008 to ensure that all students arrive one day earlier to either complete open water dives and to review diving skills and test their SCUBA equipment.

CIEE plans to purchase more scientific lab equipment prior to the start of the fall 2007 semester in order to better distribute the equipment among participants.