Feature Educator Highlight

Kathleen Nolan

Interviewed by Laura L. Mays Hoopes

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Note from the Editor

Educator Highlights for CBE-LSE show how professors at different kinds of institutions educate students in life sciences with inspiration and panache. If you have a particularly creative teaching portfolio yourself, or if you wish to nominate an inspiring colleague to be profiled, please email Laura Hoopes at lhoopes@pomona.edu.

LH: Hi Kathy, you are doing something unusual—teaching a marine biology course abroad. How did you get started teaching that course?

KN: St. Francis only has approximately 2,000 students. We're a commuter school and we have lots of students who've never traveled, but also some Trinidadian students. I thought it would be good to collaborate with someone at University of the West Indies to teach a marine biology class there during January term. This aligns with the new eco-tourism, using travel to highlight some of the problems caused by global warming. At first, circumstances were not in my favor, but two years ago our current dean said, "Why don't you do it?"

LH: So did you work with the University of the West Indies?

KN: No, several years had passed while I kept thinking about the idea. By the time the opportunity arose, I had found a new collaborator: Belize Marine TREC (Tropical Research Education Center). The year I got permission to teach the course, Belize Marine TREC offered me a free preview trip.

LH: A free trip sounds good. You had a background in marine biology, right?

KN: Yes, I was trained through a cooperative education program at Northeastern University. My co-ops in the field were at the Sandy Hook Marine Laboratory in New Jersey and working for the National Marine Fisheries Service in Portland, Maine.

LH: The tropical ocean must have been enticing after all that cold water! Did you go ahead with the free preview?

KN: Yes and no. Actually, I did not want to go to Belize alone, so I offered the class and enrolled five students in January 2008. We did preparation before we went and spent a week there.

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LH: Does global warming affect coral reefs much?

KN: Yes, unfortunately there's a die-off of the symbiotic algae (zooanthellae) called coral bleaching (that occurs) when the water is too warm. It's a worldwide problem.

LH: What kinds of learning activities did the students engage in there?

KN: There was observation by snorkeling in the morning and afternoon. In the evenings, we had some lectures. Once we went seining with a minnow net, working off the shore. Once we got to snorkel at night. The students saw a lot of different organisms, and became familiar with different ecosystems there. And many of them were away from home for the first time.

LH: Do you emphasize ecology, taxonomy, or both?

KN: Both. I decided to let nonmajors participate if they wished to, so I have somewhat different activities for majors

and nonmajors. I do think taxonomy is neglected these days, and with the threats to ecosystems, it's important to have students learn about the normal system, including the names of organisms. My students learn both Latin and common names.

LH: Tell me about the reactions of students who are away from home for the first time. Were they homesick?

KN: Yes, sometimes. I don't necessarily know about it except by accident. One told me, and I said, "But you went to Italy!" However, that trip had been with family, and this one was not. That made a huge difference. I like to provide this sort of opportunity for students to travel abroad when they might not ordinarily get an opportunity to do so. It's important to reach out to students who think study abroad is for the privileged. It's really for everyone.

LH: Do you study mammals at all on the trips, or mainly coral reef invertebrates and fish?

KN: At the Belize site, there are manatees in May, but they are only visible for a short time, so I developed a program with the Honduras Roatan Institute for Marine Science (RIMS) where we can study dolphins. The time I took the course there, students found the dolphins quite interesting, and there was some good physiology to study and behavior they could observe.

LH: Tell me about your preparatory materials for the class. What do you do before the trips?

KN: Students learned about reef ecology, trophic levels, and a selection of organisms we hope to see, with their scientific names. The students picked topics and each pair made presentations to the other students on coral reef ecology. I also had them read *A Whale for the Killing*, by Farley Mowat. It's

about northern oceans, about a whale that washed up and how some tortured it and others wanted to save it. It introduces a different kind of environment and also raises ecological and conservation issues that we can discuss throughout the course. I had each person write a report on that book. One student did an extra report on *The Enchanted Braid*, more about coral reef ecology.

LH: Did the students get to do any project work in the class?

KN: Yes, in Honduras the students did a transect looking for rock-boring sea urchins, which have changed in abundance there. They looked at the abundance inshore compared with farther from shore. These urchins have displaced some of the more benign urchins in the neighborhood. The students found more urchins inshore and hypothesized that they might be protected by the rocks along the shore.

LH: What kind of assessment did you use for this class, just the paper and presentation?

KN: We also had pre- and posttests on their biological knowledge. The answers improved from near zero to approximately 80% in response to the course material and the trip. I asked the whole class to collaborate on a poster to show to students who might consider the class in the future. I was also very interested to see if the course affected their attitudes toward international travel, so I asked them to participate in a Survey Monkey survey. Fifteen of the 25 students who have taken the course (it's been offered four times) took my online survey. There was a strong sentiment that they would be more likely to go abroad again after the course, which really pleased me.

LH: Thanks for telling CBE-LSE about your marine biology class abroad!