

Science 2011-12

MAC Abroad: Field Ecology through Regional Immersion

Summary:

Lane has few study abroad opportunities and **MAC** (Mexico, Alaska and Costa Rica) **Abroad** will offer students an exciting new series of field-based emphasis courses (BI 103X) to ecologically significant sites, both nationally and internationally. This request is for curriculum development hours for three faculty members in the science department to develop a template for field ecology abroad courses, develop new courses to Alaska and Mexico and revise our Costa Rica course. Learning outcomes for the developed courses will focus on ecology and evolution, cultural diversity and sustainability in significant ecological sites. Ongoing assessment will be done to determine whether our goals have been met and ways to continue to improve all three courses.

Description

Biology faculty members Carrie Newell, Bert Pooth and Joe Russin will develop a template that faculty can use to quickly and efficiently develop courses to be taught at distant locations. One such course has been developed, BI 103B taught by Joe Russin in Costa Rica as a summer offering. We will assess what Joe has already learned and apply this knowledge to the development of two new courses plus revise the Costa Rica course. It has been documented already that the Costa Rica class offered important pedagogical advantages. These included exposure to unfamiliar, stimulating natural environments, new cultures and perspectives, and new approaches to sustainability. The template will help specify the amount of time needed for students to learn theoretical concepts before the class moves to a distant location where these concepts will be applied and experienced in real-life situations. The template will also focus on logistics. We will develop assessment tools to determine the effectiveness of these courses in comparison to on-site (Lane campus) courses. Once the template has been established, we will test it by developing two new field courses: one in Alaska and one along the Baja California coastline in Mexico plus enhancing the existing Costa Rica course.

The initiative authors developed a schematic drawing that illustrates how the existing BI 103B, Field Biology in Costa Rica, will be the starting point for assessing the curricular and logistical components that work and those that don't work. The diagram shows the products will be the two new classes (Alaska and Mexico) and the revised Costa Rica class. Finally, assessment methods will be used to evaluate the success of all three courses over time, leading to continuous improve. We are unable to include the diagram in the initiative database.

Lane has demonstrated that it recognizes the importance of "study abroad" courses by hiring an International Programs Coordinator. She is facilitating the marketing and logistics of the currently offered Costa Rica Biology class, and is committed to doing so for future similar courses as well.

Education abroad, to a greater extent than local classes, offers a direct and immersive learning experience. Classes that are taught in foreign or distant environments offer many benefits to community college students. Education abroad "encourages the development of politically active citizens who can contribute towards participatory democracy and social service, and provides career skills needed for work in the global economy".* The literature also shows that students who take classes abroad "experience a significant growth in interpersonal skills, academic performance, cultural proficiency, and personal growth."* Many students who take these courses have not traveled outside of their own neighborhoods. For them, study abroad can be a life-altering experience that can significantly influence and enhance their career choices.

*from Expanding Education Abroad at U.S. Community Colleges. Institute of International Education Study Abroad White Paper Series, Issue Number 3, September 2008.

Questions and Answers

How is the initiative linked to the Unit Plans most recently submitted?

1. How does it continue the achievement of those goals?

2. If this is a continuation of an initiative started last year, make sure that relationship is clear.

How is this initiative linked to the efficiencies and productivities plans you had last year?

1. How does it continue the achievement of these plans?

2. If this is a continuation of an efficiency or productivity plan started last year, make sure that relationship is clear.

This initiative continues the achievement of the two themes in the FY2011-12 Science Division Unit Plan, which have been consistent over the past three years. This initiative also supports Lane's strategic direction for

A) Optimizing sustainable access for students and options for quality learning

B) Optimizing the curricula and resources we already have.

Specific goals and activities are:

1. Manage enrollment effectively
2. Increase sustainability-related curricula in support of sustainability in learning goals.

8. Enhance curriculum in disciplines.

The proposed curriculum will enable students to:

- Increase knowledge about ecology and evolution concepts.
- Increase the focus sustainability topics in biology courses;
- Increase awareness of diversity issues and improve cultural competence.

Lane is unique in offering emphasis biology courses that meet general education requirements. Expanding the emphasis courses internationally will give Lane students an opportunity to do a study abroad program by first-hand experience in learning ecology on site and this may attract additional students to the college.

A proposal for development of a template for courses taught overseas was submitted last year but was not funded. This initiative functions to renew consideration of that proposal. We made extensive revisions to the proposal in the form of additional information and justification.

Increasing offerings of different emphasis courses increases the likelihood that students will enroll in general biology classes. Registration patterns for two other field experience courses, Nature of the Northwest GS 101 and Forest Ecology BI 103, indicate that this type course is very popular. In each course, students camp in three different locations. In the Nature of the Northwest course, they compare and discover the differences between the geology, botany and zoology of the High Desert, Willamette Valley and Oregon coast. In Forest Ecology, they explore ecosystems of the temperate rain forest, high elevation forests and coastal redwoods in California. These courses have almost 100% retention. The experience the instructors gained in these courses can be utilized in the development of the courses abroad.

Describe the resources needed:

Developing the template, two new courses, revision of one course and the assessment package will require 180 hours of curriculum development funding to be utilized by Joe Russin, Carrie Newell and Bert Pooth.

What specific measurable program outcomes do you expect to achieve with this initiative? The outcomes should be specific enough to be measurable. Also, outline the method that will be used to determine the results.

We will develop an abroad course template that targets all aspects of course development including timelines, logistics, equipment usage, and assessment tools. Student retention and success, global awareness and cultural competence will be measured as part of our assessment package. We expect that the hands-on approach will result in high levels of student success both in grades and retention. So far, in the two classes that have gone to Costa Rica, retention rate has been 100% and grades have averaged around 85%, higher than similar, but more traditional sections. The template and its assessment tools will be tested by developing two new courses and revising a third course.

Department Priority:

8

Unit Resources:

Priority ranking for this initiative was determined by SAC members drawing numbers randomly. All the initiatives are valuable to the Division and to the proposing disciplines; all have the support of the Division.

Courses will be planned and taught by Biology faculty. Many of our science faculty has the experience and expertise in teaching off campus courses as noted above. Some supplies needed for the overseas courses are available from our stockrooms. Others are available from hosts at the distant locations. Contacts in all the localities including Anchorage and Homer, Alaska and San Ignacio, Mexico have offered to make equipment available.

Funding Request: Carl Perkins

Funding Request: Curriculum Development

1. List the following information

- **Course Numbers (titles if not currently offered)**
- **Instructor Name(s) who will work on the curriculum development**
- **Whether each of the courses is in, or has been through, the curriculum approval process**

BI103X, General Biology: Field Ecology through Regional Immersion in Costa Rica

(Currently taught as BI 103B General Biology: Field Biology in Costa Rica; has been approved by Curriculum Committee in that version)

BI103X, General Biology: Field Ecology through Regional Immersion in Alaska

To be developed; Not approved yet.

BI103X, General Biology: Field Ecology through Regional Immersion in Baja California, Mexico

To be developed; Not approved yet.

Joe Russin, Carrie Newell and Bert Pooth will collaborate on this initiative.

The template for overseas courses has not been through the approval process, nor have the courses to be taught in Baja California, Mexico or in Alaska. The course taught in Costa Rica has been approved and has been taught twice. As a result, it will function well as an *a posteriori* assessment of the course template.

2. List each course number (or title) and the materials to be created for each class

- **Instructional goals, objectives, syllabi and outlines**
- **Lab instruction packets**
- **Practice, quiz, presentation &/or demonstration materials**
- **Other (specify)**

Information about the hours needed for this multi-course initiative is included here because there is no other place to put it. 180 hours of curriculum development will be shared by Joe Russin, Carrie Newell and Bert Pooth and all three will collaborate on all parts of this initiative.

BI103X, General Biology: Field Ecology through Regional Immersion in Costa Rica – 40 hours

BI103X, General Biology: Field Ecology through Regional Immersion in Alaska – 60 hours

BI103X, General Biology: Field Ecology through Regional Immersion in Baja California, Mexico – 60 hours

Plus template and assessment package – 20 hours

The overall course template will include guidelines of course materials such as those listed above. In addition, we will produce a set of tables that course developers can use to properly plan logistics and the course calendar. For example, an electronic calendar could have cells that allow input of lodging, meals, and other requirements, based on the number of students attending. Another table could be used for developing a budget, permitting the faculty member to correctly calculate course fees plus a table for assessment.

In addition to the typical course material preparation (materials listed above), distant location courses require a great deal of logistical planning. Logistics include transportation, documentation needed for international travel, travel insurance, food and lodging, learning spaces, instructional materials including lab and field instruments, boat and other tours, and arranging for guest lecturers or tour guides with expertise in the areas to be visited.

To assess the template, the existing Costa Rica course will be aligned with it to see if it functions effectively as an existing model. To assess its utility in designing new courses, it will be used to develop courses to be taught in Baja, Mexico and in Alaska. These assessment pieces will require at least 20 hours each. We do not recommend partial funding. It is not reasonable to develop the template without planning to assess its utility. Because the template is meant to make future developments easier by formalizing the application of our past experience, it would not be wise to try to develop the Baja and Alaska courses without first developing the template. If those courses were to be developed independently, at least 100 hours would be required for each. The request of 180 hours is an efficient plan to develop the template, assess it, develop two new courses and revise a third.

3. List each course number (or title) and give your timeline for beginning and completing each course curriculum development.

BI103X, General Biology: Field Ecology through Regional Immersion in Costa Rica

BI103X, General Biology: Field Ecology through Regional Immersion in Alaska

BI103X, General Biology: Field Ecology through Regional Immersion in Baja California, Mexico

Development will begin in summer of 2011. We anticipate completion by the end of fall term 2011.

4. What are up to 3 departmental instructional goals that are met through the development of curriculum in each class?

1. Increase curricula for teaching ecological principles and evolution (themes of the BI 103 survey of biology grid). Development of a course template will enable us to use our experience to simplify the process of designing additional overseas courses. Two new courses are to be developed at once, both to increase our offerings and to assess the usefulness of the template. These new courses will be taught in Mexico (Baja California) and in Alaska. A course already being offered in Costa Rica will be aligned with the template and used as an additional assessment tool. The template will then be available for other faculty to develop additional overseas courses.

2. Providing on site opportunities for studying sustainability as it is practiced by other cultures. For example, in the course currently offered in Costa Rica, students visit sustainable coffee plantations. During the Baja California, Mexico course, students will see how Mexicans live sustainably in the El Vizcaino Biosphere Reserve which contains small fishing communities, ancient petroglyphs, deserts, dunes, mangroves and whale breeding lagoons. They will also see a rural economy moving from fishing to ecotourism. Without this change, the local waters would have been over-fished. With the new source of income, fishing can be done sustainably so there is a need to conserve the quality of the local ecosystem. In Alaska, where global warming is having profound effects on ecosystems as well as on people, students will study how these changes are being accounted for in the planning of resource development and conservation.

3. Increase student cultural competency through immersion into foreign cultures. In Costa Rica, the students are immersed in Latin American culture. Students partake in daily activities, including dietary choices, social and recreational customs, and communicating in Spanish. The same would be true for students in the Baja Mexico course. In Alaska, students will meet native Alaskans to discuss how they attempt to maintain their traditional lifestyles in the face of a radically changing environment. The Indians and Eskimos of Alaska have been involved, to some extent, in decisions about resource use, in part because native philosophies include sustainability ideas that can inform best practices.

5. List each course number (or title) and give the value of the development of curriculum in each course to other faculty members.

BI103X, General Biology: Field Ecology through Regional Immersion in Costa Rica

BI103X, General Biology: Field Ecology through Regional Immersion in Alaska

BI103X, General Biology: Field Ecology through Regional Immersion in Baja California, Mexico

The aim of the proposal is to develop and assess a template that would be available to all faculty that wanted to develop a field course taught overseas. In addition, returning faculty and students will act as resources. They will be able to address ecological issues from the perspective of new environments, and will be in a position to discuss sustainability from the perspective of another culture. Their immersion in a foreign culture will make them valuable resources for broadening cultural competency throughout the division and the college.

Photographs and specimen samples (where applicable) from each region will be available for other faculty to use in their courses.

6. List each course number (or title) and say how many students will be served by the development of curriculum in each class.

BI103X, General Biology: Field Ecology through Regional Immersion in Costa Rica

BI103X, General Biology: Field Ecology through Regional Immersion in Alaska

BI103X, General Biology: Field Ecology through Regional Immersion in Baja California, Mexico

We anticipate enrollment in the two or three courses to be 18-26 students each. If the demand is high enough, our template will easily allow us to open additional sections in exciting new destinations. We may also be able to recruit students from other institutions.

7. List each course number (or title) and give the specific benefits to students that you expect from the development of curriculum in each class.

BI103X, General Biology: Field Ecology through Regional Immersion in Costa Rica

BI103X, General Biology: Field Ecology through Regional Immersion in Alaska

BI103X, General Biology: Field Ecology through Regional Immersion in Baja California, Mexico

The template will allow for the development of courses that immerse students in an unfamiliar natural environment and a distant culture. Students will benefit from the intimacy of this experience by encountering such fascinating organisms as toucans in the rainforests, friendly gray whales in their breeding lagoon, and grizzly bears facing global warming. They will see first-hand how residents of distant rain forests, taiga, coastal villages and other exotic places interact with their natural environments. Besides being an unforgettable experience, these hands on courses will strongly reinforce the biological concepts being taught by presenting them in a way that will make them unforgettable: as real processes unfolding in the natural environment.

8. List each course number (or title) and give the specific benefits for diversity that you expect from the development of curriculum in each class.

BI103X, General Biology: Field Ecology through Regional Immersion in Costa Rica

BI103X, General Biology: Field Ecology through Regional Immersion in Alaska

BI103X, General Biology: Field Ecology through Regional Immersion in Baja California, Mexico

Education abroad “heightens the cross-cultural communication skills through which the individual can reconcile conflicting ideologies, perceive multiple perspectives, and respect a relativity of differences. There is no better environment than a different culture to learn how to think about the world in unique ways.”* (asterisk here refers to same citation as in the “description” section).

These courses will expose students to new cultures, both dominant ones and minorities. In Baja California, Mexico, students will live and work with Mexican fishing and whale-watching guides and will learn approaches to sustainable life-styles. Similarly, in Alaska, students will meet and talk with Native Americans and learn of their approaches to living with nature and dealing with the effects of global warming. While studying and living Costa Rica, Mexico or Alaska, students will be completely immersed in the local culture.

9. List each course number (or title) and give the specific benefits to sustainability that you expect from the development of curriculum in each class.

BI103X, General Biology: Field Ecology through Regional Immersion in Costa Rica

BI103X, General Biology: Field Ecology through Regional Immersion in Alaska

BI103X, General Biology: Field Ecology through Regional Immersion in Baja California, Mexico

In addition to items listed above, the challenges faced in different parts of the world allow students to get a broader understanding of sustainability issues. In Alaska, for example, the effects of global warming are severe and present an immediate danger that the Alaskans are struggling to deal with at environmental, social and economic levels. In Mexico, the rural population struggles with changing economies and the need to preserve the natural ecosystem to

support the newest source of income: ecotourism. In Costa Rica, students see how sustainable extraction practices are replacing rapacious clear-cutting, and how economically important exports are produced in ecologically friendly ways.

10. List each course number (or title) and give the specific effects on distributed learning that you expect from the development of curriculum in each class.

BI103X, General Biology: Field Ecology through Regional Immersion in Costa Rica

BI103X, General Biology: Field Ecology through Regional Immersion in Alaska

BI103X, General Biology: Field Ecology through Regional Immersion in Baja California, Mexico

These classes will require students to participate in a field experience. It is likely, however, that various materials (photos, videos, samples, course packets) will be made available to those teaching distance learning courses. Also, by developing relationships with colleagues in other lands, we may be able to establish web-based connections that can be used by distance learning courses. It is also possible that the new template may be modified to serve as a template for other kinds of courses, like distance learning courses.

Hours requested for Curriculum Development funding:

Please enter the amount of one of the following:

- **100 hours maximum for new development.**
- **70 hours maximum for course revision**
- **50 hours for 3-4 credit conversion**
- **other (use if multiple courses addressed in one initiative)**

Do not enter any characters other than numbers and a decimal.

How many hours are you requesting? If there are multiple courses addressed in the initiative, please list each course number (or title) and give the number of hours requested for each course.

180

Can this initiative be partially funded?

No

Partially funded curriculum development HOURS requested:

Explanation of effect of partial funding:

Funding Request: Technology Fee