A Model For Undergraduate Naturalist Training: Lessons from UCSC’s Natural History Field Quarter Class

Started in 1973 by the late professor Ken Norris, UCSC’s Natural History Field Quarter (NHFQ) class has developed a time-tested method of learning about nature based on direct observation, journal-based reflection, and a nurturing learning community. Every spring, a relatively small group of students, each earning 15 units, travels around California for the entire quarter on 7 to 12-day field trips to some of the most diverse ecologically unique habitats in the state. We learned through an alumni survey in 2012 that many NHFQ students credit their course as THE pivotal undergraduate experience that led them into their post-college environmental careers. At its core, NHFQ combines the following tools and principles into a quarter-long transformational experience:

Students

Find and Pursue Their Own Passions
While all students are expected to learn a core set of natural history skills, NHFQ offers students the freedom to explore their own natural history interests, their own ideas about how nature works, and how we should relate to it. As a result, many students report both working harder and learning more than they ever have in any other class.

Teach and Learn From One Another
Instructors encourage peer-to-peer collaboration by creating opportunities for students to share their knowledge and talents with one another. From formal presentations, to group field journal assignments, to informal group bonding, students are constantly inspired by one another.

Develop Their Own Personal Connection to Nature
Deep emotional attachment forms the basis for developing a strong ethic of environmental stewardship and the lifelong discipline of studying nature. This affective basis for developing a strong ethic of environmental stewardship and the lifelong discipline of studying nature prepares students to explore their own career pathways of natural resources through history prepares students to explore their own career pathways and future roles as ecologically-minded citizens.

Get Outside As Much As Possible, In the Backyard Or In the Backcountry
Extended immersion in diverse natural areas is ideal, but even small fragmented natural areas can be effective contexts. On extended trips, car camping is best (self-care while backpacking is too time consuming). The University of California Natural Reserves provide ideal accommodations for many kinds of educational institutions and programs.

Instructors

Teach Skills & Facilitate Self-Discovery
While instructors teach content (ecology, botany, geology, etc.), foundational naturalist skills (using dichotomous keys, field sketching, etc.), and use the core teaching model, they act more as mentors and facilitators than authoritative sources of knowledge.

Provide Constant Feedback
NHFQ faculty provide continual structured feedback on the format and quality of observations and interpretation in each student’s field journal as well as more open-ended feedback that encourage students to develop their own desired naturalist skills.

Give Full Attention To Each Person
Instructors strive to get to know each student as a unique and complex individual. They give “sustained compassionate attention” to each person, consistent with that student's individual learning path.

Support & Participate With the Group
Setting and maintaining clear behavioral expectations, facilitating group bonding experiences/traditions, and participating in group activities are all critical NHFQ ingredients that go beyond the traditional role of a classroom teacher.

Core Teaching Model

Observe. Observe. Observe. It’s Complex!
Look. Then look again from another perspective. Always consider context. Focus some of your observing on how organisms and places vary over space and through time.

Use All Your Senses
Quiet your mind and come to your senses. Strive to make this a meditative practice.

Slow Down
Better yet, sit down. Take the time to really look. Short hikes over long periods of time work best.

Ask Questions
Engage your curiosity and pose questions about what you’re observing. Use further observations and investigations to help answer them.

Reflect
Alongside accurate observation and interpretation there is also room for heartfelt personal expression.

Write & Illustrate In A Field Journal
As NHFQ’s central learning tool, a field journal goes well beyond a simple record of observations; it becomes a creative outlet that draws each student into deep levels of observation and inquiry. From dawn to dusk, everything goes in a field journal, whether describing a flower, hypothesizing about ecological succession, interpreting animal behavior, researching land use history, taking notes from instructors, sketching an insect, composing poetry, or reflecting on an experience or conversation.

Natural Reserve System

Environment

Emphasize Human History And Natural Resources Management
Understanding human stewardship and use of natural resources through history prepares students to explore their own career pathways and future roles as ecologically-minded citizens.

Community

Growing the Vision
With a generous gift from the David and Lucile Packard Foundation, the new Kenneth S. Norris Center for Natural History will build upon Dr. Norris’ original vision by supporting a growing naturalist learning community at UCSC. In addition to preparing future NHFQ students and sponsoring NHFQ graduates in senior natural history projects, the Norris Center offers natural history opportunities for many students from diverse disciplines and continues to work with other UCSC faculty to grow the natural history program and specimen collections at UCSC.

Instructors

Ken and students observing a trap-door spider at UCSC

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