

Norris Center for Natural History and Natural History Field Quarter at UC Santa Cruz
August 2015 Annual Report

Norris Center for Natural History

Thanks to the generosity of the Packard Foundation, the Norris Center was established in March 2014 to expand on UC Santa Cruz's long commitment to natural history teaching, training and experiential learning. The center is dedicated to cultivating natural history skills for students of all ages, fostering each student's passion for the natural world, and supporting natural history research that serves as the basis for understanding the complex and rapidly changing ecosystems around us. In April 2015, we held a highly successful dedication ceremony which was attended by over 300 students, faculty, alumni, community members, and other supporters.

Below we summarize the progress that has been made in the past year towards the short-term goals for the Norris Center that were listed in the funding request to the Packard Foundation. We also briefly discuss plans for the coming year. The Norris Center Executive Committee (Appendix 1) met three times and corresponded regularly via email, providing invaluable input on Center priorities.

- 1. Create a dynamic, on-campus natural history resource center that includes a reference library, meeting and learning space, and access to the campus specimen collections.*

Over the past year we have transformed the Norris Center space. The natural history collections were organized and moved to a new room, and the large room that previously housed the collections now serves as the dynamic interactive learning space that we envisioned. This space includes a reference library; exhibits on Ken Norris and other local natural history topics; natural history artwork; tables for curating natural history collections; and a meeting space with couches and a table.

This space was renovated with extensive help of students and volunteers, many from the Friends of the Norris Natural History Programs, and material donations from several supporters. Students painted a mural on the wall outside the Center which has helped to attract many students. The Center is now open six hours each weekday during the school year and is nearly continuously occupied by students and other volunteers. For example, it is typical on Thursday mornings for a group of 6-10 people to meet to curate plants specimens, including undergraduate students, doctoral students, local naturalist Randy Morgan, and members of the Santa Cruz Chapter of the California Native Plant Society.

- 2. Support more hands-on learning opportunities through internships and laboratory and field activities in undergraduate classes; work to expose undergraduates to natural history training opportunities early in their college careers*

We offered several Natural History courses during the past year, including Natural History of the UCSC Campus, Natural History Field Quarter (NHFQ), Natural History of the UCSC Reserves, Curation of Natural History Collections, and Environmental Interpretation. Students in ~20 UCSC classes used specimens or other resources from the Norris Center. In addition to formal classes, the student-led Natural History Club met weekly in the Norris Center and offered natural history training to students of all class levels. Moreover, upper class students offered natural history walks for first year students through the UCSC colleges. The Center also hosted a student-led Natural History Symposium in March that was attended by >70 students and alumni.

In addition, we raised \$38,000 from alumni, family and friends of Annais Rittenberg (a former NHFQ student who died in an accident in 2013), which was matched by \$16,500 from UCSC, to support an ongoing scholarship to enable a diverse set of students to participate in NHFQ.

A high priority for the coming year will be to expand outreach efforts to first and second year students, through entry level courses and the colleges, to make a wider set of students aware of the natural history coursework and internship opportunities related to the Norris Center. We are also developing an online description of the natural history opportunities on campus to help students navigate the many choices. Finally, we are planning to build a student-alumni network for career mentoring in natural history-related fields.

3. Competitive grants program

We developed guidelines for and advertised the new [Norris Center Student Project Awards](#) with the helpful input of the Norris Center Executive Committee. We made [eight student awards](#) (Appendix 2) to support a diverse set of projects, ranging from three exhibits now displayed in the Norris Center to a field guide to the spiders of the UCSC campus to a manual for ongoing monitoring of reptiles and amphibians in the forests on the UCSC campus. The awards provided important support for student projects sponsored by six different faculty in both the Environmental Studies and Ecology and Evolutionary Biology Departments. In the coming year we will increase efforts to advertise the award to students conducting natural history-related work in other majors.

4. Support Natural History Field Quarter

The Norris Center supported NHFQ by providing a much-needed space from which the class made its base when in Santa Cruz in between trips. This class also made substantial use of the natural history collections, library, and field equipment. Norris Center Administrative Director Chris Lay (who also taught NHFQ) did all the pre-planning for the course, including hiring staff, advertising the course, and making lodging and transportation reservations. See also, “Course highlights,” below.

5. Curate important collections

Over the last year, a dedicated volunteer group consisting of undergraduate students, graduate students, and community members of the Santa Cruz Chapter of the California Native Plant Society have made significant improvements to our plant collection. These include updating our database of over 7,000 specimens, adding hundreds of new specimens (including voucher specimens of county species and voucher floras of important local places), and working with local naturalist Randy Morgan on his taxonomic work of various California plant genera. In collaboration with the Fungus Federation of Santa Cruz, we continue to grow and organize our collections of over 1,000 local fungus specimens. With undergraduate and graduate student help, we are supporting ongoing DNA sequencing and taxonomic work by local expert Christian Schwarz. Finally, we continue to work on curating and supporting further research with the Morgan Insect Collection. In particular, we successfully moved all of Morgan’s collection into our new collections room and developed a more thorough and organized method of monitoring the collection. We now have a permanent display about Randall Morgan in the main Norris Center that highlights and displays part of his collection. We also continue to support graduate and undergraduate research using his collection.

In the coming year, we will be writing grant proposals to continue to curate the valuable Morgan insect collection. Another priority is to improve our digital database of collections.

6. Outreach with broader community

We spent considerable time designing our new website (norriscenter.ucsc.edu) which provides information to a broad audience about the resources available. During the past year we fostered ongoing and made new connections with numerous natural history organizations. We continue to work with members of the Fungus Federation of Santa Cruz and the Santa Cruz Chapter of the California Native Plant Society on curating collections.

We recently received funding from the Helen and Will Webster Foundation to support a collaborative project with the new leadership of the Santa Cruz Museum of Natural History to update their first grade field trip program about local animals to inquiry-based techniques and align with Next Generation Science Standards. This project will provide an excellent opportunity for UCSC student interns to gain experience in curriculum development and teaching. Our students are writing natural history content for [Mobile Ranger](#) a web app-tour to provide information about the natural and human history in the Santa Cruz area to a general audience.

We are in the initial stages of planning a short-course program for natural history course instructors in collaboration with the California Naturalists Program and the Lawrence Hall of Science. We are also discussing potential collaborations with a number of other groups, including the California Academy of Sciences. Our goal for the coming year is to move forward on a few key collaborative initiatives.

7. Actively fundraise

In addition to the scholarship and outreach fundraising described above, we were fortunate to receive financial support this past year from several private donors, one National Science Foundation grant, and from the Environmental Studies (ENVS) Department, Ecology and Evolutionary Biology (EEB) Department, Social Sciences Division, and Physical and Biological Division at UCSC. We raised a new donation from the March Conservation Fund, which covered our annual operating expenses, including hiring student assistants, and paid for the construction of new work tables as part of the Center remodel.

In addition, immediately following the Norris Center Dedication Ceremony in April, the Helen and Will Webster Foundation made a \$500,000 gift to endow a chair for the UC Santa Cruz Natural Reserves. This gift was matched by \$500,000 from the UC Office of the President. The Natural Reserves System is another major component of Ken Norris's legacy.

We have begun raising funds for the [Norris Center Graduate Fellows Program](#) to support graduate students who will mentor undergraduate students working on natural history and museum collections; and coordinate student projects with ongoing natural history research on campus. We will continue to work to raise funds to fully support the salary of the Center Director and specific projects of the Center, through both grants and private fundraising.

Natural History Field Quarter

The Natural History Field Quarter (NHFQ) class was successfully taught for the 42nd time during the spring quarter of 2015. The responsibility for overseeing staffing, budgeting, course evaluation, and planning for 2015 and future years was accomplished by the newly formed NHFQ Executive Committee (Appendix 1). This committee met once in February 2015 and agreed to meet twice a year starting in September 2015 after the first NHFQ endowment payout is available.

1. NHFQ staffing

This year the NHFQ class was staffed by the Norris Center Administrative Director Chris Lay and adjunct faculty member Winifred Frick, who is an NHFQ alum. Beginning this coming year, our goal is to train a pool of instructors that can assist with teaching the course in subsequent years. To meet this goal, we created a hiring subcommittee within the NHFQ Executive Committee to identify and hire new instructors.

2. Course highlights/accomplishments

This year the NHFQ course consisted of 27 students, two course assistants (both recently graduated alumni of the course), and two instructors. In addition to the traditional places that NHFQ has visited, the course visited Tejon Ranch in the Tehachapi Mountains in Southern California, which provided an unprecedented opportunity to camp on a private inholding within the heart of the ranch. We made two noteworthy additions to the instructional aspect of the course. We developed a detailed rubric for evaluating and coaching students as they develop their field journaling skills; this rubric allowed the instructor team to give more detailed feedback to each student throughout the course. We also facilitated the student group to create a [blog](#) detailing their experience with pictures and their own words.

3. Student scholarships

As referenced above, we raised enough funds to create an endowed scholarship for NHFQ students. This year, we awarded five scholarships for a total of \$2,000 to help offset the course fee that students pay in addition to their tuition. We anticipate being able to give away \$2,000 in scholarships each year on an ongoing basis.

4. NHFQ Outreach

To advertise the course, we visited both ENV5 and EEB Biology classes in both the fall and winter quarters at UCSC, and held an evening informational meeting. Through this process, we identified many potential candidates and reached a broader audience than in the recent past. We have also worked to identify new campus organizations with whom we will collaborate in the coming year.

5. Alumni/Post-graduate career connections

A growing number of alumni contributed to the success of NHFQ this year. We had a record number of visits and guest lectures, including a visit from the BEETLES (Better Environmental Education, Teaching, Learning, and Sharing) group at the Lawrence Hall of Science. The NHFQ Facebook page continues to be very active, with nearly daily postings and over 450 members. Our intention is to keep growing the ways in which alumni can interact with the class. We also continued to make stronger connections with employers interested in hiring NHFQ alumni. One successful new connection has been with the National Park Service in Yosemite National Park, where four recent NHFQ alumni are working as park rangers, researchers, and interns.

6. Future priorities

One goal for the coming year is to create and conduct a yearly NHFQ course evaluation to help improve the class each year. We will be working with the BEETLES group of field course instructors at the Lawrence Hall of Science at UC Berkeley to continue to refine the NHFQ curriculum. Finally, we are creating detailed risk management resources for future NHFQ and other UCSC field course instructors.

Appendix 1. Advisory Committee Members

Norris Center Executive Committee

Jenny Anderson, retired Environmental Studies staff & instructor and representative of the Friends of the Norris Natural History Programs

Karen Holl, Norris Center Faculty Director and Professor of Environmental Studies at UCSC

Bruce Lyon, Professor of Ecology and Evolutionary Biology at UCSC

Chris Lay, Norris Center Administrative Director

Richard Norris, Professor of Geosciences at UC San Diego and representative of the Friends of the Norris Natural History Programs

Natural History Field Quarter (NHFQ) Advisory Committee

Ryan Carle, NHFQ Instructor

Jenny Keller, NHFQ alumnus and Representative from the Friends of the Norris Natural History Programs

Chris Lay, Norris Center Administrative Director and NHFQ Instructor

Erika Perloff, NHFQ alumnus and Representative from the Friends of the Norris Natural History Programs

Andrew Szasz, Chair, Environmental Studies Department at UCSC

Breck Tyler, NHFQ alumnus and former instructor

Appendix 2. Norris Center Student Project Awards for 2014-2015 Academic Year. For project descriptions click [here](#)

Student	Faculty Sponsor	Title of Project
Chris Santomero	Karen Holl	Seeing Nature Through Ken's Eyes (Museum Exhibit Honoring Ken Norris)
Jenny Reike	Greg Gilbert	The Importance of Ecological Research on a Mapped Forest Plot (Museum Exhibit on the UCSC Forest Ecology Research Plot)
Cady Watts	Deborah Letourneau	The Collections and Work of Local Naturalist Randall Morgan (Museum Exhibit)
Melanie Good	Don Croll	Building a photo-identification database for blue whales in the northern Indian Ocean
Maycee Hash	Stacy Philpott	A Field Guide to the Spiders of UCSC
Alex Prieto	Laurel Fox	Climate Change and Native <i>Bombus</i> Species
Alexander Shenton and Alexandra Molen	Stacy Philpott	Investigating Impacts of Anthropogenic Disturbance on Small Mammal Species in UCSC Upper Campus
K. Stevenson, A. Horvath, H. Burrill, B. Charles	Greg Gilbert	Herps on the FERP (Forest Ecology Research Plot)