

NORTHERN
ARIZONA
UNIVERSITY



Offering students the opportunity to gain real world experience on the region's most critical environmental issues.



To learn about more opportunities in the environmental sector at NAU, check out "Navigating the Green Road," available at emaprogram.com.

Ecological Monitoring & Assessment Program

March 2009

Student Connections

Connecting NAU students with environmental opportunities

Lots of Learning on the San Juan River

NAU's Wild Outdoor Classroom

The San Juan River in southwestern Utah is rich in opportunities for adventure and learning. The meandering San Juan offers whitewater, beautiful beach camps, ancient Puebloan dwellings and artifacts, fossils, astounding petroglyph panels, wildlife, and spectacular views. The Ecological Monitoring & Assessment Program and NAU Outdoors have partnered to offer multi-day rafting trips on the San Juan lasting anywhere from three to eight days. San Juan trips are wonderfully unique in that the experience is tailored to the specific needs of each group.

Each boating season, we offer a variety of river based courses for credit as well as custom trips designed to meet the needs of special groups for teambuilding, research, fundraising or adventure and relaxation. To find out more about our 2009 San Juan River trips and other great trips on the Verde River and Colorado River, contact NAU Outdoors: 928-523-3229, or <http://home.nau.edu/outdoors/>.

To find out more about the San Juan River Program and the Native American Guide and Cultural Interpretation course, see page 5 and the EMA Program website: maprogram.com/emaweb/ema/site/EducationalPrograms.asp



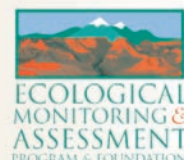
"The San Juan River trip was a wonderful learning experience in terms of discovering the richness of the river environment. . . It is a journey everyone should experience!"

Karolina Chmiel
NAU graduate student

Upcoming San Juan River Trips

- Open Kayaking - March 16-18 (open enrollment)
- Women's Gender Studies (WGS499/599) - April 17-19 (contact: Janice.Carpenter@nau.edu)
- Honors Trip (PRM 203h) - April 23-25 (contact: Robyn.Slayton-Martin@nau.edu)
- Intro to Multi-Day River Guiding (PRM 232b) - May 12-17 (open enrollment)
- Environmental Science (ENV375) - May 20-23 (contact: Claudia.Walecka-Hutchinson@nau.edu)
- NAU Alumni Trip - June 5-7 (open enrollment)
- Native American Guide & Cultural Interpretation (PRM 432a) - June 9 -18 (open enrollment thru 6/05/09)
- Wilderness Welcome Trip - August 18-21 (open enrollment)
- Open Rafting - Fall 2009 (TBA) (open enrollment)

For more information about Student Connections or to list a project, contact:
Shawn Newell, NAU Box 5845 • Flagstaff, AZ 86011 • 928-523-8285
Shawn.Newell@nau.edu, www.EMAProgram.com



INTERNSHIPS & JOBS

NAU AND NAU COLLABORATIONS

Grand Canyon National Park / Ecological Monitoring & Assessment Program (EMA) Partnership Projects
EMA and Grand Canyon National Park
Application deadline: March 25, 2009

Science Communication and Outreach Program Intern

This intern will help the Park's science and resource management personnel communicate their activities to broad audiences, including Grand Canyon National Park staff, partners, stakeholders, and the general public. This project may include assisting with coordination of the Scientific Research and Collection Permitting process at the park.

Implement Best Practices for Optimizing Energy Efficiency of Water Systems Intern

Project personnel will work with Park personnel to prioritize and implement recommendations from the South Rim water-energy assessment completed in 2008. The goal will be to collaboratively develop operational priorities, action plans, and recommendations for immediate and ongoing reduction of energy consumed in water supply and treatment. Action plans and recommendations will integrate opportunities for water conservation identified in the Sustainability Audit, a 2008 partnership project.

Science Research Intern New Grand Canyon internship!

The intern will assist with science research coordination at Grand Canyon National Park. Specifically, will help organize historical and current research information and communicate this information to park management and interpretation staff. It also includes assisting with the development of a targeted research program to identify and encourage policy relevant research to assist park managers with successfully managing and protecting park resources. Duties may include assisting with the establishment of a Grand Canyon science advisory group.

For more information or to apply for any of the above internships, e-mail a cover letter and resume with two NAU faculty references to Shawn Newell, Shawn.Newell@nau.edu, 928-523-8285. Please specify which internship you are applying for.

Zero Energy Home Software Evaluation Intern

Resource Conservation Group, Inc., Flagstaff
Application deadline: Open until filled

A Zero Energy home is one that utilizes renewable energy to produce as much energy as it consumes. To develop cost-effective strategies for retrofitting homes to Zero Energy, energy modeling software should be used for evaluation of the home and prioritizing retrofit options by cost-effectiveness. ReGroup is looking for a student or group of students to evaluate currently available software, as well as to research programs in development by the National Renewable Energy Laboratory (NREL) and other research institutions worldwide. Once we understand what is available, we are looking for suggestions on developing programs to bridge identified gaps and for suggestions for implementing a web-based homeowner estimator for Zero Energy retrofits. This is currently an unpaid position, but may develop into a paid position.

Contact: Chris Watson, Resource Conservation Group, Inc, chris@regroupconserve.com, 866-444-4033
www.ReGroupConserve.com

Water Adequacy Internship

Special Initiatives Unit, Coconino County, Flagstaff
Application deadline: Open until filled

Coconino County offers an outstanding internship program for undergraduate and/or graduate students for spring and fall semesters (2009). The State of Arizona recently passed a law (S.B. 1575) granting authority to counties to consider water availability when considering development. For the law to take effect, the Board of Supervisors must vote unanimously to establish water authority over development in Coconino County. This initiative involves providing the Board with the pros and cons associated with water authority and stakeholder and public input. Specific tasks include developing ordinances; communications with stakeholders, the Board of Supervisors and other elected officials; and providing input to Arizona Department of Water Resources as it finalizes the water adequacy rules. Interns must be available to work at least 4 hours every week. Although no compensation is currently available, we will assist with college credit for the experience and pursue internship funding. If successful, funding will be made available to the intern.

Contact: Lucinda Andreani, landreani@coconino.az.gov, 928-779-6576, or Eslir Musta, emusta@coconino.az.gov, 928-679-7176

Parks and Recreation Management Interpretation Intern

Riordan Mansion State Historic Park/Arizona State Parks, Flagstaff
Application deadline: Open until filled

Riordan Mansion is seeking undergraduate or graduate students to assist in basic park operations: greeting visitors and providing guided tours of the Riordan family homes. Interns may also have the opportunity to develop an interpretive exhibit. This is a non-paid internship; however the student could receive academic credit from the sponsoring college.

Contact: Nikki Lober, nlober@azstateparks.gov

Museum Studies Intern

Riordan Mansion State Historic Park/Arizona State Parks, Flagstaff
Application deadline: Open until filled

Riordan Mansion is offering an opportunity for students to learn hands-on curatorial and archives skills in a small museum setting. Interns may also be trained to give guided tours and assist in the visitor center. This is a non-paid internship; however the student could receive academic credit from the sponsoring college.

Contact: Nikki Lober, nlober@azstateparks.gov

Native Landscaping Design Intern

Riordan Mansion State Historic Park/Arizona State Parks, Flagstaff
Application deadline: Open until filled

Riordan Mansion would like to enhance the existing landscaping using more native and water conserving plants. There are two areas of the park that need to be addressed.

Contact: Mike Davis, mdavis@azstateparks.gov

Research Opportunities - Business/Forestry/Art History/History/Political Science

Riordan Mansion State Historic Park/Arizona State Parks, Flagstaff
Application deadline: Open until filled

Riordan Mansion has many opportunities for interested students or team of students to research and either write a paper or create an exhibit on their findings. Many of the family's papers have been preserved and are stored at the NAU Cline Library in Special Collections. Some suggested topics are:

- Research financial investments of the Riordan family and the financial structure of the Arizona Lumber & Timber Company.
- Harvesting methods used by the Arizona Lumber & Timber Company
- Research artwork in the house, including Native American art
- The involvement of the Riordan family in Arizona's statehood efforts, U.S. Food Administration and Good Roads Movement

Contact: Nikki Lober, nlober@azstateparks.gov

OTHER ORGANIZATIONS

Conservation Interns (a variety of unpaid positions with housing) - American Conservation Experience, Flagstaff, AZ

Application deadline: Open

Contact: Diana DiMuro, 928-226-6960, Diana@usaconservation.org, [Program website](#)

National Commission on Energy Policy Intern (paid) – NCEP, Washington, D.C.

Application deadline: March 23

Contact: [Program website](#)

Sevilleta LTER Summer Interns (paid) – University of NM Sevilleta Field Station, Socorro, NM

Application deadline: March 31 or until filled

Contact: Jennifer Johnson, jjohnson@sevilleta.unm.edu

Energy Resource Development Tribal Internship Program (stipend, housing & transportation) – U.S.

Department of Energy Argonne National Laboratory

Application deadline: April 3, 2009

Contact: Lreed@dep.anl.gov, [Program website](#)

Ocean Policy Internship (housing) – Marine Conservation Biology Institute, Washington D.C.

Application deadline: April 6, 2009

Contact: Emily Douce, Emily.douce@mcbi.org, 202-546-5346, www.mcbi.org

Transportation Interpreter Volunteer Intern (stipend, housing & transportation) - National Park Foundation, National Parks nationwide

Application deadline: April 11, 2009

Contact: [Program application](#)

NSF Undergraduate Research Fellowships in Marine Science, Oceanography & Global Climate Change

(stipend & transportation) – Bermuda Institute of Ocean Sciences, St. George's, Bermuda

Application deadline: May 30, 2009

Contact: education@bios.edu 441-297-1880 x238, [Program Website](#)

Environmental Studies Internship Program (stipend) - Smithsonian Environmental Research Center (SERC)

Application deadlines: June 1 (for August to December)

Contact: Dan Gustafson, Internship Coordinator, SERCintern@si.edu, 443-482-2217, [Program website](#)

FUNDING OPPORTUNITIES

NAU AND NAU COLLABORATIONS

NAU Graduate Student Organization Travel Awards

Application deadline: March 13, 2009

The GSO travel award for professional development travel from January 1st through June 30th 2009 is available on the [program website](#).

2009-10 Undergraduate Mentoring in Environmental Biology (UMEB) Fellowships (\$12,000)

Application deadline: March 27, 2009

UMEB is a scholarship-mentoring program that helps Northern Arizona University undergraduates from diverse backgrounds succeed in Environmental Biology by gaining research experience and exposure to the scientific endeavor. UMEB scholars are involved in the scientific process from the beginning. They choose a mentor from among 21 faculty members from 10 different academic units on the NAU campus. Together they develop a research prospectus and plan. Over the next year scholars complete the research plan and prepare a final paper to be presented at a professional meeting. Scholars benefit from four levels of mentoring and advisement: UMEB program staff; faculty mentors; UMEB co-scholars; and university support systems.

UMEB scholars are awarded \$12,000 per year in a combination of scholarships and wages. During the summer scholars work full-time on their research. Each semester UMEB scholars are required to take a 1-credit course, Foundations of Research (ENV 499). During fall semester the course introduces scholars to the many mentors and their diverse research programs. Scholars choose a mentor by the end of the semester. During spring term the course covers research ethics and research methods. Scholars work as part-time researchers during the spring term and full-time researchers during the summer. At the end of the summer scholars share their findings during a research symposium. Scholars and mentors prepare their research for presentation at a local, regional, national, or international professional meeting. Every week scholars meet with a graduate student mentor to review academic progress and get assistance when necessary. Scholars have many opportunities to meet with UMEB co-scholars and alumni for peer mentoring.

Contact: Nancy Johnson, Nancy.Johnson@nau.edu, 928-523-6473, [Program website](#)

San Juan River Basin-Student Scholarship (up to \$1,200)

EMA Program

Application deadline: May 31, 2009

The San Juan Scholarship is available to students doing research or taking an NAU academic course on the San Juan River. Scholarships offset all or part of the cost of the river trip. Awards are based on financial need. Recipients are required to complete a project defined by the scholarship administrator and the student. Native American scholarships are also available for Native American students enrolled in the Native American Guide Training Program.

Contact: Shawn Newell, 928 523-8285, Shawn.Newell@nau.edu

OTHER ORGANIZATIONS

2009-2010 Art & Science Fund (for non-profit organizations) - Flagstaff Cultural Partners & City of Flagstaff

Application deadline: March 23, 2009 (recommended workshop on February 11, 2009)

Contact: Robin Cadigan, 928-779-2300 ext.104, www.culturalpartners.org/grants.htm.

Francis and Evelyn Clark Soil Biology Scholarship (\$1,000) - Soil Science Society of America

Application deadline: March 24, 2009

Contact: Leann Malison, lmalison@agronomy.org, 608-268-4949, [Program website](#)

Ben Avery Scholarship (\$1,000) – Arizona Chapter Soil & Water Conservation Society

Application deadline : April 30, 2009

Contact: Kris Graham Chavez, krisgchavez@yahoo.com, [Program website](#)

VOLUNTEER OPPORTUNITIES

NAU AND NAU COLLABORATIONS

Partners in Recycling Education (PRE)

Merriam-Powell Center for Environmental Research

NAU's Merriam-Powell Center for Environmental Research has joined forces with Arizona Department of Environmental Quality, Coconino County, the City of Flagstaff and Willow Bend Environmental Education Center in the Partners in Recycling Education (PRE) to coordinate regional recycling education and outreach to students, residents and businesses in northern Arizona. PRE plans to increase recycling education and awareness through a range of advertising, promotion and community outreach events. Their goal is to increase recycling rates and decrease recyclables going to the regional landfill. Look for the PRE's collaborative message, "Recycle-we're all in this together!" Program volunteer opportunities will be ever-changing.

For more information visit: <http://recycling.nau.edu>

COURSES & RESEARCH PROJECTS

Riordan Mansion State Park Interpreter Training

Riordan State Park, Flagstaff

March 21, 28, and April 4, 2009, 8:30 to 10:30 am

Learn about local history and interpretation and qualify to join the Riordan Mansion volunteer team. The workshop is free and will be held on three consecutive Saturday mornings. Learn from local historical experts about Flagstaff's early history, the Riordan families, basics of interpretation and techniques for giving a guided tour. All are welcome.

Contact: 928-779-4395

Native American Guide & Cultural Interpretation Training (PRM 432a)

NAU Campus and San Juan River, Utah

June 9-18, 2009

This 10 day experiential river-based course is open to all students interested in an introduction to river rafting skills and interpretation of Native American culture. This course is an excellent choice for people interested in working as an outdoor guide or interpreter. It meets a significant need for accurate interpretation of local

Native American culture, the history of the land, archeological sites, and animals and plants in the Southwest, with a focus on the San Juan River. Scholarships may be available.

Contact: Nikki Cooley, Nikki.Cooley@nau.edu, 928-523-0715, [Program Website](#)

San Juan River - Interdisciplinary Research Site and Ongoing Restoration

Available for ongoing projects

NAU students have unique access to the San Juan River for conducting independent research and participating in long-term restoration work. The Ecological Monitoring Program and NAU Outdoors collaborate to support river-based applied projects. Students interested in independent research projects, provide a brief description, timeline and contact information.

Contact: Nikki Cooley, Nikki.Cooley@nau.edu, 928-523-0715

The Wild Bill Ecological Center - Interdisciplinary Research Site

Available for ongoing projects

The Wild Bill Ecological Center is a 24-acre site owned and managed by NAU's Ecological Monitoring & Assessment Program in the Ponderosa Pine grasslands ecosystem 20 minutes west of the NAU campus. The site and surrounding Babbitt Ranch lands are available for student research. Interdisciplinary projects are strongly encouraged. The site includes a grazing exclusion plot and adjacent stock pond. Biological inventories, soils investigations, demonstration and testing of rural energy and water technologies, archaeological investigations, research and demonstration of restoration and sustainable development practices are examples of desirable projects for the site. Please provide a brief project description, timeline and contact information.

Contact: Shawn Newell, 928-523-8285, Shawn.Newell@nau.edu

Merriam Powell Research Station

Available for ongoing projects

NAU's MPRS offers housing and facilities for students and researchers visiting Northern Arizona as well as opportunities for NAU students to conduct field research. The station is jointly run by Merriam Powell Center for Environmental Research and the Arboretum at Flagstaff. It is located 5 miles southwest of Flagstaff on Arboretum property and is surrounded by NAU's Centennial Forest, Coconino National Forest and C. Hart Merriam Gradient Research Sites.

Contact: Amy Whipple, Amy.Whipple@nau.edu, 928-523-8727, [Program website](#)

Centennial Forest

Available for ongoing projects

The Centennial Forest is designated as a research and teaching laboratory and administered by the Arizona State Land Department and NAU School of Forestry. The nearly 50,000 acres of the Centennial forest are divided roughly in half: one half north of Flagstaff, Arizona just west of Wupatki National Monument, and the other half southwest of town interspersed in a checkerboard pattern within the Coconino National Forest. The rich historical, geological, and archaeological resources, and the unique stewardship agreement of the Centennial Forest are attracting researchers from all over the NAU campus.

Contact: JJ Smith, JJ.Smith@nau.edu, [Program website](#)

CONFERENCES, WORKSHOPS, & OTHER OPPORTUNITIES

NAU AND NAU COLLABORATIONS

Grand Canyon National Park and Grand Canyon Association's Lecture Series

Cline Library, 7:00 pm

April 1: **Climate Lessons from Grand Canyon: Can 1.8 billion years of history help us predict the next century?** - Carl Bowman, Air Quality Specialist (Ranger Lecture Series)

April 29: **California Condors in Arizona!** – Kathy Sullivan

May 6: **Science on the Edge: Preserving Grand Canyon National Park's Natural and Cultural Resources** - Martha Hahn, Chief of Science and Resource Management (Ranger Lecture Series)

May 20: **The Resurrection of Glen Canyon** – Annette McGivney and James Kay

The Park's Division of Science and Resource Management will be presenting monthly community lectures in Flagstaff in collaboration with the Grand Canyon Association and Northern Arizona University's Cline Library. The series will feature resource specialists from the park speaking about the National Park Service's scientific work to monitor, manage and preserve Grand Canyon's natural and cultural resources for present and future generations.

Contact: Allyson Mathis, 928-638-7923, [Program website](#)

NAU Environmental Caucus - Ongoing

The Environmental Caucus is a group of faculty, staff and students at NAU interested in issues related to sustainability and the environment. The group is currently formulating its mission and action plan.

Contact: Shelly Silbert, Shelley.Silbert@nau.edu, 928-523-7635.

OTHER ORGANIZATIONS

SEEDS Field Trip to Rocky Mountain Biological Lab

Crested Butte, Colorado

June 7-13, 2009 (sign up by: February 23, 2009)

Tour RMBL, learn about their research being, conduct group investigations and present results, visit the town of Crested Butte, hike, and learn about the important cultural history of the area. A career panel and writing workshop will offer ideas of the diverse career paths in ecology. [Opportunities for undergraduate students at RMBL](#) will be presented, including [Research Experience for Undergraduates](#) (REU) opportunities.

Contact: [Program website](#)

Study Group for Wildlife and Open Spaces

Ongoing – Coconino County

The Study Group for Wildlife and Open Space is a group of scientists and wildlife/open space advocates is a network of scientists (YOU!) that can contribute expertise to the planning process for preservation of wildlife and open spaces in Flagstaff and Coconino County.

Contact: Tish Bogan-Ozmun, tish@uneedspeed.net, 928-606-0882

LINKS TO MORE OPPORTUNITIES

NAU AND NAU COLLABORATIONS

[Green Jobs](#) (a clearinghouse of environmental opportunities for NAU students)

[CEFNS Student Opportunities](#)

[Gateway Connects](#)

[Merriam Powell Center for Environmental Research Weekly Updates](#)

[Research and Internships](#)

[Research Funding Resources](#)

OTHER ORGANIZATIONS

[2009 Co-op/Internship Opportunities in Ecology, Animal & Plant Biology & Marine Science](#)

[Environmental Career Opportunities \(Ecojobs.com\)](#)

[Marine Conservation Biology Careers](#)

[National Science Foundation Research Experiences for Undergraduates \(REU\)](#)

[National Council for Science and the Environment Campus to Careers](#)

[Orion Grassroots Network](#)

Rocky Mountain Biological Laboratory – [Jobs & Internships](#) / [Student Research & Instruction](#)

[Student Jobs with the U.S. Government \(studentjobs.gov\)](#)

For more information about Student Connections, contact:

Shawn.Newell@nau.edu, 928-523-8285