

## USGS 2019 Cooperative Summer Field Training Program



The National Association of Geoscience Teachers (NAGT)/U.S. Geological Survey (USGS) Cooperative Summer Field Training Program is the longest continuously running internship program in the Earth sciences. Over the past 50 years, over 2,500 students have participated in this program, with many participants continuing on to distinguished careers with the USGS, with academia, or with industry.

The cooperative program was launched at the Geological Society of America meeting in Kansas City in early fall of 1965 when William “Bill” Pecora, then the newly appointed Director of the USGS, held a meeting with a small group of distinguished professors and officers of the NAGT. Pecora wanted to get the professors’ reactions to an initiative that would provide a stronger link to academia while providing better summer research assistants for the USGS. He suggested that the USGS would provide support through internships for outstanding newly graduated geoscience majors, while NAGT would solicit outstanding student nominations from the directors of the nation’s geoscience field camps. (Field camp, a tradition in the education of a geoscientist, is an intensive course that applies classroom and laboratory training to solving field-based geoscience problems. As employers value the skills and applications developed in the field camp experience, enrollments have shown a remarkable three-fold increase in the past decade.)

Needless to say, ‘Pecora’s Plan,’ as it became known, met with instant approval.

Although some modifications have been made over the years, the NAGT/USGS Cooperative Summer Field Training Program operates today much as it did from the beginning. With active participation and support from the highest levels of both organizations (including the Director of the USGS), a joint committee oversees the program. The program year begins in September with the field camp directors (now numbering over 120) being provided information about the program. Each director has the opportunity to nominate up to three students, based on their camp enrollment. Nominated students apply by sending a resume, letter of interest, and transcripts to the USGS. At the same time, USGS scientists interested in working with an intern submit a proposal about their field and laboratory projects. A science review and placement panel then matches candidates by their course work, skills and interests with up to five projects. The list of candidates and accompanying academic information are sent to USGS scientists for their review, followed by candidate interviews and ranking for preferred selection. While the interviews provide useful opportunities for candidates and scientists for determining a good fit, the USGS scientist makes the final intern selection.

As interdisciplinary science is a cornerstone of USGS science, all science disciplines are encouraged to take advantage of this program. Students hired through this program have continually received outstanding reviews from scientists and supervisors alike. In 2017, the USGS extended this program by forming a new partnership with the GIS Certification Institute, and in 2018 another partnership with the Ecological Society of America. Both organizations have nominated outstanding students and this has allowed our Cooperative Summer Field Training Program to provide top-flight students to many new enthusiastic supervising mentors from all science disciplines.

The Program continues Pecora’s vision of greater educational involvement and provides a first rate professional experience to students early in their careers. It is a wonderful partnership that influences the career paths of future scientists in positive and exciting ways.

## NAGT/USGS 2019 Cooperative Summer Field Training Program Internship Placements

**Intern:** Gui Askit  
**Field Camp:** University of Washington  
**Mentor:** James Vallance, Alexa Eaton, and Cynthia Gardner  
**Location:** Vancouver, Washington  
**Project:** Volcanic hazards in the Pacific Northwest

**Intern:** James Atterholt  
**Field Camp:** Indiana University  
**Mentor:** William Stephenson and Alena Leeds  
**Location:** Golden, Colorado  
**Project:** High resolution geophysical investigations of hazardous faults and seismic ground motions

**Intern:** Arty Bateman  
**Field Camp:** University of Oregon  
**Mentor:** John Nimmo and Kim Perkins  
**Location:** Menlo Park, California  
**Project:** Quantifying fluxes and resources in the water cycle

**Intern:** Deisree Bayouth Garcia  
**Field Camp:** University of Puerto Rico  
**Mentor:** Angie Diefenbach  
**Location:** Vancouver, Washington  
**Project:** Quantifying past and present topographic change in the crater of Mount St. Helens

**Intern:** Jonathan Bell  
**Field Camp:** Ohio State University  
**Mentor:** Chris Curran, Kristen Jaeger, and Rick Dinicola  
**Location:** Tacoma, Washington  
**Project:** Vance Creek groundwater/surface water interactions

**Intern:** Jackson Bodtker  
**Field Camp:** University of Utah  
**Mentor:** Ben Melosh  
**Location:** Menlo Park, California  
**Project:** Structural evolution and uplift of the northern California coast ranges

**Intern:** Connor Broaddus  
**Field Camp:** Fort Lewis College  
**Mentor:** Isa Woo and Susan De La Cruz  
**Location:** Olympia, Washington  
**Project:** Evaluating the Nisqually River Delta: 10 years after restoration

**Intern:** Max Burnham  
**Field Camp:** New Zealand Frontiers Abroad  
**Mentor:** Heather Wright  
**Location:** Vancouver, Washington  
**Project:** Global volcanic hazard and risk database for the Volcano Disaster Assistance Program

**Intern:** Darek Caro  
**Field Camp:** University of California, Davis  
**Mentor:** Brent Topping  
**Location:** Menlo Park, California  
**Project:** Arsenic sources in Klamath Basin, Oregon

**Intern:** Daniel Colwell  
**Field Camp:** University of St. Andrews  
**Mentor:** Jared Peacock  
**Location:** Menlo Park, California  
**Project:** Geophysical investigations related to geothermal, mineral, water resources, and natural hazards in the western U.S.

**Intern:** Brandon Dean  
**Field Camp:** Colorado State University  
**Mentor:** Jared Peacock  
**Location:** Menlo Park, California  
**Project:** Geophysical investigations related to geothermal, mineral, water resources, and natural hazards in the Western U.S.

**Intern:** Sarah Dunn  
**Field Camp:** Indiana University  
**Mentor:** Sue Kahle and Andy Long  
**Location:** Tacoma, Washington  
**Project:** Aquifer recharge area study/water-budget components of Guemes Island

**Intern:** Olivia Enriquez  
**Field Camp:** Sul Ross State University  
**Mentor:** Jeffrey Ziegeweid  
**Location:** Mounds View, Minnesota  
**Project:** Fluvial geomorphology of the Chippewa and Upper Mississippi River basins

**Intern:** Clayton Forbush  
**Field Camp:** Brigham Young University Idaho  
**Mentor:** Carma San Juan  
**Location:** Denver, Colorado  
**Project:** USGS Mineral deposit database

**Intern:** John Grab  
**Field Camp:** Montana State University  
**Mentor:** Daniel Dzurisin  
**Location:** Vancouver, Washington  
**Project:** Geodetic monitoring of volcanoes in the western U.S.

**Intern:** Michael Greenfield  
**Field Camp:** Indiana University  
**Mentor:** Jeffrey Chaplin  
**Location:** New Cumberland, Pennsylvania  
**Project:** Characterization of hydrologic resources in Pennsylvania with emphasis on pesticides in vulnerable aquifers and variation of groundwater quality with time

**Intern:** Jiyun Hatami  
**Field Camp:** Wasatch Uinta Field Camp  
**Mentor:** Greg Noe  
**Location:** Reston, Virginia  
**Project:** The influence of floodplain geomorphology on nutrient biogeochemistry, water quality, and watershed processes

**Intern:** Jaime Hirtz  
**Field Camp:** University of Texas Austin  
**Mentor:** Mark Hudson  
**Location:** Denver, Colorado  
**Project:** Ozark Dome-Arkoma Basin-Ouachita belt transect

**Intern:** Amanda Jayo  
**Field Camp:** University of Utah  
**Mentor:** Jill Baron  
**Location:** Fort Collins, Colorado  
**Project:** Field validation of remotely sensed alpine lake productivity

**Intern:** Wes Johns  
**Field Camp:** Western Washington University  
**Mentor:** Stephen DeLong  
**Location:** Menlo Park, California  
**Project:** Natural hazards research

**Intern:** Ellen Justis  
**Field Camp:** Iowa State/University of Nebraska  
**Mentor:** Josh Koch and Mike Carey  
**Location:** Anchorage, Alaska  
**Project:** Hydro-ecology of arctic thaw

**Intern:** Sean Kacur  
**Field Camp:** University of Texas Austin  
**Mentor:** Mary-Catherine Leewis and Courtney Creamer  
**Location:** Menlo Park, California  
**Project:** Phytostabilization in action: optimizing plant-microbial communities for enhanced colonization of acidic tailings

**Intern:** Regina Khoury  
**Field Camp:** Humboldt State University  
**Mentor:** Albert Hofstra  
**Location:** Denver, Colorado  
**Project:** Melt and fluid inclusion analysis in resource investigations

**Intern:** Liam Knudsen  
**Field Camp:** Western Michigan University  
**Mentor:** Carma San Juan  
**Location:** Denver, Colorado  
**Project:** USGS Mineral deposit database

**Intern:** Adrian Landstedt  
**Field Camp:** University of New Mexico  
**Mentor:** Kristin Jaeger and Chris Curran  
**Location:** Tacoma, Washington  
**Project:** Quillayute Basin sediment production

**Intern:** Ashley Lynn  
**Field Camp:** University of North Carolina  
**Mentor:** Marci Robinson  
**Location:** Reston, Virginia  
**Project:** Shallow marine foraminifera during past warm intervals

**Intern:** Andrew Madsen  
**Field Camp:** Wheaton College  
**Mentor:** Walter Mooney  
**Location:** Menlo Park, California  
**Project:** Earthquake and tectonic studies of the central and eastern U.S.

**Intern:** Brandon Maples  
**Field Camp:** University of Oklahoma  
**Mentor:** John Lane  
**Location:** Storrs, Connecticut  
**Project:** Applied hydrogeophysics research

**Intern:** Gary McGaughey  
**Field Camp:** University of Nevada Reno  
**Mentor:** Kristina Hopkins  
**Location:** Raleigh, North Carolina  
**Project:** Understanding the impacts of green stormwater infrastructure on water quality

**Intern:** Maurice Mitchell  
**Field Camp:** George Mason University  
**Mentor:** Andrew Waite  
**Location:** Ithica, New York  
**Project:** New York surface water and ground water data collection

**Intern:** Daniel Mongovin  
**Field Camp:** Central Washington University  
**Mentor:** Belle Philibosian, Carol Prentice and Suzanne Hecker  
**Location:** Menlo Park, California  
**Project:** Northern California active fault mapping and paleoseismic studies

**Intern:** Marissa Murr  
**Field Camp:** University of Wyoming  
**Mentor:** Cheryl Miller and Jason Alexander  
**Location:** Cheyenne, Wyoming  
**Project:** Using remote sensing data to analyze hydrogeomorphic changes in a small high-desert stream

**Intern:** Grant Palmer  
**Field Camp:** North Carolina State  
**Mentor:** Katie Skalak and Adam Bentham  
**Location:** Reston, Virginia  
**Project:** Quantifying sediment transport and lag times

**Intern:** Emily Perman  
**Field Camp:** University of Oregon  
**Mentor:** Cal Ruleman and Shannon Mahan  
**Location:** Denver, Colorado  
**Project:** Field mapping and luminescence geochronology

**Intern:** Rachel Phillips  
**Field Camp:** University of Texas Arlington  
**Mentor:** Rich Briggs  
**Location:** Golden, Colorado  
**Project:** Earthquake geology in the western U.S.

**Intern:** Karlee Prince  
**Field Camp:** Northland College  
**Mentor:** Jessica Rodysill  
**Location:** Reston, Virginia  
**Project:** Holocene drought history inferred from lake lowstands in the southeastern U.S.

**Intern:** Pablo Saunders-Shultz  
**Field Camp:** New Zealand Frontiers Abroad  
**Mentor:** Ben Pauk and James Vallance  
**Location:** Vancouver, Washington  
**Project:** Volcanic hazards in the Pacific Northwest

**Intern:** Max Saylor  
**Field Camp:** Dartmouth College  
**Mentor:** Lesleigh Anderson  
**Location:** Denver, Colorado  
**Project:** Hydroclimatic change in Alaska from Holocene proxy records

**Intern:** Daniel Schmidt  
**Field Camp:** University of Missouri Columbia  
**Mentor:** Albert Hofstra  
**Location:** Denver, Colorado  
**Project:** Melt and fluid inclusion analysis in resource investigations

**Intern:** Max Schwid  
**Field Camp:** University of Wisconsin Oshkosh  
**Mentor:** Ralph Haugerud and James O'Connor  
**Location:** Portland, Oregon  
**Project:** Missoula flood mapping project

**Intern:** Mackenzie Shepherd  
**Field Camp:** Bowling Green State University  
**Mentor:** Geoff Cromwell and Don Sweetkind  
**Location:** Santa Maria, California  
**Project:** Three-dimensional digital hydrogeologic mapping of the Santa Maria Valley and the California Coast Ranges

**Intern:** Joseph Syzdek  
**Field Camp:** Illinois State University  
**Mentor:** Alicia Gearwar  
**Location:** Troy, New York  
**Project:** Surface water and ground water networks

**Intern:** Jeffrey Wade  
**Field Camp:** Wasatch Uinta Field Camp  
**Mentor:** Denis LeBlanc and Timothy McCobb  
**Location:** Northborough, Massachusetts  
**Project:** Cape Cod aquifer hydrologic studies

**Intern:** Katherine Worms  
**Field Camp:** University of Utah  
**Mentor:** Michael Toomey  
**Location:** Reston, Virginia  
**Project:** Late Holocene Colorado River discharge to the Gulf of California

**Intern:** Jordan Wang  
**Field Camp:** University of Washington  
**Mentor:** Shane Detweiler and Walter Mooney  
**Location:** Menlo Park, California  
**Project:** Geological and geophysical studies of the San Andreas Fault system, California

**Intern:** Lara Yagodzinski  
**Field Camp:** Southern Illinois Carbondale  
**Mentor:** Jean Self-Trail  
**Location:** Reston, Virginia  
**Project:** Gulf Coast project

## ESA/USGS 2019 Cooperative Summer Field Training Program Internship Placements

**Intern:** Morgan Andrews  
**College:** Michigan State University  
**Mentor:** Jill Hardiman and Ian Jezorek  
**Location:** Cook, Washington  
**Project:** Cooperative fish population and restoration assessment

**Intern:** Marci Caballero-Reynolds  
**College:** University of Arizona  
**Mentor:** Seth Munson  
**Location:** Flagstaff, Arizona  
**Project:** RestoreNet: Developing suitable ecological restoration practices across environmental gradients

**Intern:** Theresa Benton  
**College:** University of Michigan  
**Mentor:** Theodore Kennedy  
**Location:** Flagstaff, Arizona  
**Project:** Aquatic invertebrate monitoring and research in the Colorado River and Grand Canyon National Park

**Intern:** Liza Chang  
**College:** Rutgers University  
**Mentor:** Any Royle  
**Location:** Laurel, Maryland  
**Project:** Population study of box turtles on the Patuxent Refuge

**Intern:** Eric Branch  
**College:** Western Michigan University  
**Mentor:** Joan Hagar  
**Location:** Corvallis, Oregon  
**Project:** Purple Martin use of BLM regeneration harvests and national forests restoration sites

**Intern:** Cora Davies  
**College:** Occidental College  
**Mentor:** Amy Symstad  
**Location:** Hot Springs, South Dakota  
**Project:** Annual brome adaptive management

**Intern:** Schyler Brown  
**College:** University of North Texas  
**Mentor:** Craig Snyder  
**Location:** Kearneysville, West Virginia  
**Project:** Brook trout vulnerability to drought: eastern component of USGS national integrated ecohydrological research and monitoring plan

**Intern:** Casey Gill  
**College:** University of Mississippi  
**Mentor:** Rob Massatti  
**Location:** Flagstaff, Arizona  
**Project:** Biological data collection in support of restoration across the Colorado Plateau

**Intern:** Kenan Goodwin  
**College:** Utah State University  
**Mentor:** Michael Adams  
**Location:** Corvallis, Oregon  
**Project:** Occurrence and status of sensitive amphibian species in Oregon

**Intern:** Kyle Haley  
**College:** Ferrum College  
**Mentor:** Vincent D'Angelo and Clint Muhlfeld  
**Location:** West Glacier, Montana  
**Project:** Experimental suppression of invasive lake trout in Glacier National Park, and measuring streamflow as part of the USGS Integrated Drought Science Plan

**Intern:** Allison Hendryx  
**College:** University of Montana  
**Mentor:** Diann Prosser  
**Location:** Laurel, Maryland  
**Project:** Waterbird research on a restoration island in the Chesapeake Bay

**Intern:** Holli Holmes  
**College:** Ohio State University  
**Mentor:** Vincent D'Angelo and Clint Muhlfeld  
**Location:** West Glacier, Montana  
**Project:** Experimental suppression of invasive lake trout in Glacier National Park, and measuring streamflow as part of the USGS Integrated Drought Science Plan

**Intern:** Darren Kirkendall  
**College:** George Mason University  
**Mentor:** David Bunnell  
**Location:** Ann Arbor, Michigan  
**Project:** Variation in zooplankton productivity in Lake Huron

**Intern:** Chad Kluender  
**College:** University of Wisconsin Madison  
**Mentor:** Matt Germino  
**Location:** Boise, Idaho  
**Project:** Monitoring and research of plant recovery on the 2015 Soda Wildfire

**Intern:** Kim Koval  
**College:** California State University Fullerton  
**Mentor:** Kurt Kowalski  
**Location:** Ann Arbor, Michigan  
**Project:** Developing sustainable control strategies for invasive *Phragmites australis*

**Intern:** Penny McCowen  
**College:** Baker University  
**Mentor:** Amanda Demopoulos  
**Location:** Gainesville, Florida  
**Project:** Deep SEARCH: Deep sea exploration to advance research on coral, canyon, and cold-seep habitats

**Intern:** Shane McGlaughlin  
**College:** Trinity College  
**Mentor:** Kathleen Conn  
**Location:** Tacoma, Washington  
**Project:** Coastal habitats in Puget Sound

**Intern:** Sarah Midolo  
**College:** Elon University  
**Mentor:** Mitchell Eaton  
**Location:** Raleigh, North Carolina  
**Project:** Understanding the impacts of climate and global change on habitat dynamics and linking with species responses from a management perspective

**Intern:** Logan Neu  
**College:** University of Minnesota  
**Mentor:** Abigail Lynch  
**Location:** Reston, Virginia  
**Project:** Estimating global river fisheries harvest potential

**Intern:** Mary Powley  
**College:** Rutgers University  
**Mentor:** Clint Otto  
**Location:** Jamestown, North Dakota  
**Project:** Pollinator health and habitat

**Intern:** Ethan Ready  
**College:** Duke University  
**Mentor:** Nicholas Johnson  
**Location:** Millersburg, Michigan  
**Project:** A test of sterile male release to control invasive sea lamprey in the Great Lakes

**Intern:** Mari Rodriguez  
**College:** The College of New Jersey  
**Mentor:** Madeline Rubenstein  
**Location:** Reston, Virginia  
**Project:** National synthesis of species responses to climate change

**Intern:** Ariana Sanchez  
**College:** California State University Fullerton  
**Mentor:** Mary Ann Evans  
**Location:** Ann Arbor, Michigan  
**Project:** Great Lakes cladophora growth study

**Intern:** Jeni Sidwell  
**College:** Utah State University  
**Mentor:** Tabitha Graves  
**Location:** West Glacier, Montana  
**Project:** Evaluation of huckleberry phenology response to drought

**Intern:** Savannah Wilson  
**College:** Luther College  
**Mentor:** Mike Duniway and Jayne Belnap  
**Location:** Moab, Utah  
**Project:** Drought experiments on the Colorado Plateau

**Intern:** Veronica Winter  
**College:** Purchase College SUNY  
**Mentor:** Kristen Hart  
**Location:** Davies Florida  
**Project:** Sea turtle movements and habitat use, and American crocodile nest monitoring

**Intern:** Alexa Youre-Moses  
**College:** Purchase College SUNY  
**Mentor:** Vincent D'Angelo and Clint Muhlfeld  
**Location:** West Glacier, Montana  
**Project:** Experimental suppression of invasive lake trout in Glacier National Park, and measuring streamflow as part of the USGS Integrated Drought Science Plan

### **GISCI/USGS 2019 Cooperative Summer Field Training Program Internship Placements**

**Intern:** Brittany Bufford  
**College:** Texas A&M University  
**Mentor:** Nancy Simon and Terence Slonecker  
**Location:** Reston, Virginia  
**Project:** Identification of Genera of Cyanobacteria using hyperspectral imaging

**Intern:** Michelle Field  
**College:** University of Memphis  
**Mentor:** Melanie Vanderhoof  
**Location:** Denver, Colorado  
**Project:** Post-fire state transitions across the Western U.S.