

# **University of Wyoming – National Park Service Research Station**

**40<sup>th</sup> Annual Report, 2017**



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## **2017 UW-NPS Research Station Personnel**

Michael Dillon, Director  
Bonnie Robinson, Office Manager  
Gordon Richman, Facilities Superintendent  
Andy Bergin, Facilities Staff  
Annika Dotson, Summer Staff  
Coleman Cook, Summer Staff  
Callahan Jobe, Summer Staff  
Jaide Wachtel, Summer Staff

## **2017 Proposal Review Committee**

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Grand Teton National Park

Christie Hendrix  
Research Permit Facilitator  
Yellowstone National Park

## **Director's Column**

### **40<sup>th</sup> Annual Report 2017**

During the period of this report the University of Wyoming-National Park Service (UW-NPS) Research Station supported and administered research in the biological, physical and social sciences and cultural resources performed in national parks, national forests and surrounding areas in the Greater Yellowstone Ecosystem. The UW-NPS Research Station solicited research proposals from university faculty, governmental research scientists and non-governmental research organizations throughout North America via a request for proposals. Research proposals addressed topics of interest to National Park Service scientists, resource managers, and administrators as well as the academic community. Studies conducted through the Station dealt with questions of direct management importance as well as those of a basic scientific nature.

The Research Station continues to administer a small grants program to fund research addressing applied and basic scientific questions, often related to park management. Research proposals are reviewed and evaluated by the Research Station's proposal review committee, which is composed of University faculty and National Park Service representatives and is chaired by the Director of the UW-NPS Research Station. Research contracts are usually awarded by early April.

The UW-NPS Research Station operates a field station facility at the AMK Ranch on Jackson Lake in Grand Teton National Park. The Research Station provides researchers in the biological, physical and social sciences and cultural resources an enhanced opportunity to work in the diverse aquatic and terrestrial environments and the cultural resources of Grand Teton National Park, Yellowstone National Park and the surrounding Greater Yellowstone Ecosystem. Station facilities include housing for up to 60 researchers, wet and dry laboratories, a library with internet access, an herbarium, boats, and shop facilities. The research station is available to researchers working in the Greater Yellowstone Ecosystem regardless of funding source, although priority is given to individuals whose projects are funded by the Research Station.

A summary of the 2017 users and activities at the Station is included below. Additional information about the UW-NPS Research Station, including the current year's Request for Proposals, housing and facilities request forms, summaries of past and current research, upcoming seminars and other events, and location information, can be found at the station's web site: <http://uwnps.org/>.

### **Availability of Research Project Reports**

The following project reports have been prepared primarily for administrative use. The information reported is preliminary and may be subject to change as investigations continue. Consequently, information presented may not be used without written permission from the author(s). Reports from past research at the Research Station are available online. For reports 1954, go to the Jackson Hole Research Station Archives (<https://journals.uwyo.edu/index.php/jhrs/issue/archive>), and for reports 1977-present, visit the UW-NPS Research Station Archives (<https://journals.uwyo.edu/index.php/uwnpsrc/issue/archive>).

## 2017 UW-NPS Research Station Users and Activities Summary (3,439 total user-days)

▲ Funded by the UW-NPS seed grants program

★ Direct impact on UW: direct involvement of UW faculty or students

■ Direct impact on WY: direct involvement with or addressing priorities of state agencies

### Research projects with residence at the station

*42 research teams from UW and 20 other universities, federal agencies, newspapers, and biodiversity and conservation organizations – 2108 user days, 2 day use guest*

- ★ University of Wyoming – Aquatic Invasive Species – 1 researcher – 3 days
- ★ University of Wyoming – Beavers – 4 researchers – 29 days
- ★ University of Wyoming – INBRE Conference Preparation – 1 researcher – 1 day
- ★ University of Wyoming – Ecology and Management of Bumble Bees – 4 researchers – 30 days
- ★ University of Wyoming – Honors Course Planning – 3 researchers – 4 days
- ★ University of Wyoming – Invasive Snails – 4 researchers – 7 days
- ★ University of Wyoming – Library Science – 1 researcher – 2 days
- ★ University of Wyoming – Museum of Vertebrates Specimen Collection and Preservation – 2 researchers – 1 day
- ▲ ★ University of Wyoming – Natural Diversity Database – 2 researchers – 1 day
- ★ University of Wyoming – Sensory Biology – 3 researchers – 3 days
- ★ University of Wyoming – Sounds of Bees in Art and Science – 1 researcher – 3 days
- ▲ ★ University of Wyoming – Stream Nitrogen Cycling – 2 researchers – 7 days
- ★ University of Wyoming – Wet Plate Collodion Photography – 3 researchers – 3 days
- ▲ ★ University of Wyoming, Casper – Fire Ecology – 11 researchers – 3 days
- Biodiversity Research Institute, Portland – Harlequinn Duck Migration – 3 researchers – 6 days
- ▲ ■ Boise State University – Bat Ecology – 4 researchers – 4 days
- Colorado State University, Fort Collins – Pollinators – 15 researchers – 20 days
- Gossamer Labs – Spider Ecology and Art – 2 researchers – 14 days
- ▲ ■ Idaho State University – Outdoor Recreation History and Acoustic Ecology – 3 researchers – 9 days
- Idaho State University – Raft Guides and Climbing Rangers – 1 researcher – 5 days
- ▲ ■ Idaho State University – Teton Fault – 6 researchers – 10 days
- Iowa State University – Climate Change – 2 researchers – 46 days
- ▲ ■ Montana State University – Snow and Whitebark Pine – 1 researcher – 2 days
- ▲ ■ Montana State University – Wetland Biodiversity – 3 researchers – 3 days
- New York Times – Climate Change and Wildfire Danger – 1 researcher – 2 days
- Oregon State University – Geophysics of Yellowstone Magmatic System – 4 researchers – 30 days
- Oregon State University – Leigh and String Lakes Visitor Use – 2 researchers – 30 days
- Pennsylvania State University – Leigh and String Lakes Visitor Use – 2 researchers – 30 days
- Pennsylvania State University, Altoona – Invasive Snails – 1 researcher – 7 days
- ▲ ■ Southern Illinois University – Ecology and Management, Beavers – 3 researchers – 15 days
- Texas State University – Rock Glaciers as Water Towers – 2 researchers – 21 days
- ▲ ■ United States Geological Survey – Braided River Processes/Habitat – 6 researchers – 6 days
- University of California, Los Angeles – Impact of Environmental Noise on Yellow Warbler – 1 researcher – 20 days
- University of Kentucky – Uplift of the Teton Range – 4 researchers – 10 days
- University of Montana – Mormon Row Archaeological Inventory – 1 researcher – 3 days

- University of Washington – Wildflower Phenology – 1 researcher – 1 day
- University of Wisconsin, Madison – Fire Ecology – 15 people – 21 days
- Utah State University – Bumble Bees – 1 researcher – 1 day
- Utah State University – Butterfly Evolution and Population Ecology – 5 researchers – 16 days
- Utah State University – Leigh and String Lakes Visitor Use – 3 researchers – 38 days

### Classes and field research courses

*10 classes from UW and 5 other universities and high schools with 144 students and 23 faculty – 668 user days*

- ★ University of Wyoming – Art/Science Cross Pollinators Project – 5 students/1 instructor – 4 days
- ★ University of Wyoming – Geology – 26 students/6 instructors – 3 days
- ★ University of Wyoming – Science Initiative’s Summer Institute – 29 students/3 instructors – 5 days
- ▲★ University of Wyoming – Folklife field school, Dude Ranches – 14 students/5 faculty – 3 days
- ★ University of Wyoming – Visual Art – 8 students/1 instructor – 6 days
- Clayton High School – Behavioral Ecology of Sagebrush Crickets – 5 students/1 faculty – 13 days
- Clemson University – Field Ecology – 11 students/1 instructor – 1 day
- University of Nebraska, Lincoln – Inquiry-based Geoscience Course – 18 students/1 instructor – 2 days
- University of Pittsburgh – Geology and Ecology – 16 students/2 instructors – 3 days
- West Virginia University – Photography/Art/Ecology – 12 students/2 instructors – 6 days

### Workshops and meetings

*5 workshops and meetings for the University of Wyoming, a community college, state and federal agencies and research affiliates – 164 user days, 137 day use guests*

- ★ University of Wyoming – Migration Initiative – 4 researchers – 9 days
- Gossamer Labs – Spider Workshop – 3 researchers – 14 days
- Grand Teton National Park – Invasive Vegetation – 2 researchers – 1 day
- Laramie County Community College – Geology – 3 researchers – 7 days
- National Park Service – Clemson Institute for the Parks – 21 researchers – 6 days

### Interns resident at the station

*2 interns co-funded by UW and GTNP and selected competitively for work with GTNP staff, and 1 guest intern from Australia – 216 user days*

- ▲ ■ GRTE/UW – Cultural Resources in Science & Resource Management Division – 87 days
- ▲ ■ National Park Service – Ecology and Management – 89 days
- University of Sunshine Coast, Queensland – Mammal Survey Design – 40 days

### Residencies

*8 residencies in writing, art, and music composition from UW and 3 other universities and affiliates – 63 user days*

- ★ University of Wyoming – Artist Residency, Sculpture for Cross Pollinators Project – 4 days
- ★ University of Wyoming – Composer Residency, Bear and the Eclipse – 17 days



- ★ University of Wyoming – Writer Residency, Social Sciences/Education – 14 days
- ★ University of Wyoming – Writer Residency, Tourism in Wyoming and GTNP – 1 day
- ★ University of Wyoming – Writer Residency, Saw Toths, A Novel – 8 days
- Columbus State University – Write Residency, Dude Ranching History – 4 days
- Nelson Robotics – Artist Residency, Grand Tetons drawing – 4 days
- University of California, Davis – Writer Residency, Mining in Wyoming – 11 days

### Harlow Summer Seminars – UW-NPS Research Station at the AMK Ranch

Weekly seminars and special events from mid-June to mid-August with receptions or BBQ dinner followed by a seminar – attended by the general public from the Jackson Hole/Greater Yellowstone Area – 220 user days, 920 day use guests

- **Pollinator hotshots: Engaging students in field experiences using citizen science**  
Gillian Bowser, Colorado State University, Fort Collins, CO (June 15)
- **From wolf ecology to microbiology: An overview of Yellowstone’s contributions to research and science**  
Sarah Haas, Yellowstone Center for Resources YNP, WY (June 22)
- **Live on the rocks: A Portrait of the American Mountain Goat**  
Bruce Smith, Science Writer and Wildlife Biologist, Jackson, WY (June 29)
- **The role of the acoustic environment in shaping behavior, community structure, and evolution**  
Jesse Barber, Boise State University, Boise, ID (July 6)
- ★ **Life in the tropics: Dispersal, reproduction, and survival in tropical birds**  
Corey Tarwater, University of Wyoming, Laramie, WY (July 13)
- **Bighorn sheep in the Teton Range**  
Sarah Dewey, Grand Teton National Park, GRTE, WY (July 20)
- **Tetons alpine streams: unsung heroes of diversity and vulnerability**  
Debra Finn, Missouri State University, Springfield, MO (July 27)
- ★ **Biology of the invasive New Zealand mudsnail in the GYE**  
Amy Krist, University of Wyoming, Laramie, WY (Aug 3)
- ★ **Eclipses, Einstein, Eddington, and the shattered star that has yet to shatter**  
Adam Myers, University of Wyoming, Laramie, WY (Aug 17)

### Outreach

#### 2017 Outreach Activities

- ★ Anne Guzzo, University of Wyoming – 2<sup>nd</sup> Annual Wyoming Festival – New Music in the Mountains – Aug 10
- ★ University of Wyoming – A Celebration of the solar eclipse with Science Friday and Discovery Days – Aug 18, 19
- ★ University of Wyoming – World to Wyoming seminar series/school outreach – Aug 13, 14
- Cosmic Image Inc, Montreal, Quebec, Canada – Einstein’s Incredible Universe – Documentary – Aug 17-21
- Moose Corner Children’s Academy – Butterflies, ground squirrels, pollinators – Jun 20
- Teton Plein Air Painters – Aug 15
- West Virginia University – Photography – Jun 24