Greetings all! I’m sad to let you know that after 34 years at the University of Wyoming and 21 years as director of the UW-NPS Research Station, I will be retiring. My experiences and rewards as director go beyond measure. It has been a joy to interact with the hundreds of researchers over the years who have worked so hard at their studies and who have treated me, the UW-NPS staff and the AMK ranch with respect and kindness. My fondest memories will be of late afternoons sitting on my porch with dozens of faculty, students and family members walking, talking and laughing on the station as they unwind after a rigorous day in the field; everyone tired but happy and getting along in harmony. What a gift you have given me and my family over these years; for this I thank you.

Documents such as the National Park Service State of the Park Report, National Academy of Science report on Science and the National Parks as well as the National Research Council and National Park Omnibus Act have made us aware of threats to our National Parks and the need for scientific research to understand ecosystem function and provide data to make sound management decisions in National Parks. Our program has enthusiastically responded to these needs in the Greater Yellowstone Area (GYA) beginning in 1953 as the Jackson Hole Biological Research Station located on the Snake River in Grand Teton National Park (GTNP), and then in 1976 as the UW-NPS Research Station at the AMK Ranch. The UW-NPS Research Station is one of only a few nationwide field research stations that are located within the boundaries of a National Park with a university administrative presence. During my tenure as director, we have made great strides at strengthening this cooperative bond and enhancing research productivity within the GYA. We signed an ongoing General Agreement with the National Park Service that allows discussion and bolstering of ties between the University of Wyoming and GTNP. Our weekly seminar and dinner series have become a valuable outreach event with nationally and internationally renowned speakers addressing an audience of between 80-190 people from the GYA and Jackson community. We support two interns each summer with free housing and a stipend to work in the National Park while providing them experience and exposure to this setting to help make the National Park Service a career goal. We established the L. Floyd Clarke scholarship program to fund graduate and undergraduate students and provide housing at the AMK Ranch to conduct research in the GYA. Our grants program has continued to grow with 12-15 new studies supported each year to address issues of concern to our National Parks and National Forests that make up the GYA. Our Annual Report over the years has evolved into a beautiful publication of around 190 pages with color pictures, graphics and high quality appearance which rivals many professional journals thanks to our office manager, Celeste Havener. Celeste has developed desktop publishing skills that, along with her bookkeeping and clerical abilities, have maintained the grant budgets, Newsletter, website and tracked the housing needs of researchers. The library has been expanded in the Berol lodge to have a new annex, increased holdings and internet service due to the efforts of our resident University of Wyoming librarian, Mary Ann Harlow. We converted the boat house into an aquatic laboratory and the
Directors Column cont.
from page 1.

historic buildings at the AMK Ranch have been maintained at a standard that makes it a showcase for structures on the National Historic Register. For this, we are grateful to Rich Viola who will be retiring as caretaker of the AMK ranch during the summer of 2014. Occupancy of the research station has continued to grow and reach its carrying capacity during the mid-summer months. To accommodate this demand, we are in the final stage of an Environmental Assessment (EA) to replace the water and septic systems at the AMK Ranch, refurbish the shoreline and construct a 6000 square foot dormitory to house 25 people. These proposed construction efforts and vigor of the UW-NPS program have been possible through the foresight and continued support of Superintendent Mary Gibson-Scott, Chief of Science and Research Management Sue Consolo-Murphy and all GTNP planners. Working with National Park Service employees from law enforcement, maintenance, resource and science over the years has been a productive and truly rewarding experience.

The UW-NPS Research Station is indeed a collaborative venture between the University of Wyoming and the National Park Service to accommodate the National Park Service State of the Park Report and National Academy of Science report on Science and the National Park to facilitate quality research and help protect the wondrous beauty of the GYA. The UW-NPS Research Station has an exciting future and I feel privileged to have been a part of its evolution as a home at the AMK Ranch and supporter of researchers from around the world. It is a pleasure to introduce my friend and colleague, Dr. Harold Bergman who will be the acting director for 2014-2015.

Hank Harlow
Director Emeritus

Dear Friends of the UW-NPS Research Station,

Somehow, I am going to do my very best to step into Hank Harlow’s very big shoes and guide the programs and activities of the UW-NPS Research Station at AMK over the next year while Hank and Mary Ann move on to new adventures in their well-deserved retirement (note, though, that they are not really retiring – they are off to Australia and other exotic places for new research and teaching challenges). I know you will all join me in wishing Hank and Mary Ann the very best and in urging them to return often to Wyoming and the AMK to tell us about their new adventures!

Hank has earned our heartfelt and everlasting thanks for the absolutely terrific job he has done for UW, the UW-NPS Station at AMK, Grand Teton National Park, the Greater Yellowstone Ecosystem, and thousands of researchers and students who have passed through the AMK Ranch over the 21 years he has directed the station. Last year, UW honored Hank with the George Duke Humphrey Distinguished Faculty Award, UW’s top award given to just one faculty member each year, for his outstanding research and teaching career, but also for his outstanding service over the years as the UW-NPS director. Though I can only attempt to fill Hank’s shoes, in my capacity as acting director I will do my very best to follow Hank’s example on everything and anything that comes up over the next year while the University and our colleagues at GTNP work together to identify the next director for the station. In the meantime, feel free to contact me at any time at Bergman@uwyo.edu with your questions, requests, concerns or suggestions.

My best regards,
Harold Bergman
Professor and Acting Director

Mercury and other trace elements in glacier meltwater at Grand Teton National Park
Greg Carling, University of Utah

Melting glaciers are a potential source of mercury (Hg) and other trace elements that have accumulated in the ice during the industrial era. As glaciers melt at an alarming rate, these potentially toxic metals are released to the environment. In order to evaluate the impact of glacier melt on water quality in high elevation watersheds, researchers from Brigham Young University (PI-Greg Carling and students) sampled transects along the Teton and Middle Teton glaciers and proglacial streams during early-July and mid-August 2013. During July, the glaciers were snow-covered, and thus water samples primarily represented melt from the previous winter. During August, the glacier ice was exposed, and thus samples likely represented true ice melt. These contrasting sample sets will allow for a determination of the impact of snowmelt versus glacier melt on water chemistry in the high elevation watersheds. Ten samples were collected each month along the Teton transect: four of surface drainage on the glacier, three near the terminal moraine, and three downstream of the glacier. Thirteen samples were collected each month along the Middle Teton transect: one above the glacier at the Grand Teton-Middle Teton saddle, four of surface drainage on the glacier, two near the terminal moraine, two at the moraine of Teepe Glacier, and four samples downstream of the glaciers. All water samples have been analyzed for Hg, a suite of trace elements (including As, Pb, Cd, and Mo), and major anions. Sample analyses are still underway for stable isotopes (δ²H and δ¹⁸O) and tritium (¹³H), which will be used to differentiate between seasonal snow and “old” glacier melt. The final dataset should be complete during the early part of 2014, at which time we will begin to evaluate contributions of Hg and other trace elements from the melting glaciers.
Nutrient Limitation and Uptake Rates in Streams and Rivers of the Greater Yellowstone Area

Alexander J. Reisinger and Jennifer L. Tank, Dept. of Biological Sciences, Univ. of Notre Dame

Stream biofilms are the bioreactive microbial assemblage communities growing on the bottoms of streams and rivers, and they are capable of retaining a portion of the dissolved nutrients in the water column prior to these nutrients being exported downstream. Biofilm growth and activity may be limited by many factors, but biofilms are commonly limited by nutrient availability. In addition to stream biofilms, a separate community of pelagic organisms (e.g., planktonic algae) floating in the water column may also process nutrients in streams and rivers. Pelagic nutrient processing is assumed to be minimal in small streams, with most activity occurring on the stream bottom, but pelagic nutrient uptake may increase as streams become rivers. Streams and rivers in the Greater Yellowstone Area (GYA) have low nutrient concentrations due to their pristine nature, including a general lack of agricultural and urban lands in the area. Our research goal was to quantify the nutrient limitation status and pelagic nutrient processing of streams and rivers in the pristine GYA.

We measured nutrient limitation in five rivers throughout the GYA using nutrient diffusing substrata, a common method in stream biogeochemistry that involves deploying an artificial substrate (glass disk or sponge) that has been amended with various nutrients into the stream. We allow biofilms to colonize these substrata for a two week period, and then measure various structural and functional metrics of the biofilms on each disk. We found that both primary production by algae and respiration by heterotrophic microbes within biofilms were most commonly limited by nitrogen (N) in the GYA (i.e., in 3 out of 5 rivers), with P limitation or co-limitation by N and P found in one river, and no limitation in the final river. The two rivers that did not exhibit biofilm N limitation included the Buffalo Fork of the Snake River, and the Teton River near Driggs, ID. During our study period, the Buffalo Fork was very turbid due to recent storms in the watershed, which limited light penetration to the biofilms on the river bottom, and therefore, the biofilms in the Buffalo Fork were likely limited by light rather than nutrients. The Teton River was the only river we studied which had a large proportion of agricultural development in the watershed, thus it is not surprising that N was not limiting to river biofilms. We also measured pelagic nutrient uptake in three streams within Grand Teton National Park to determine the effect of stream size on nutrient uptake. Pelagic nutrient uptake data was combined with data collected from the GYA in 2010 and data from two Midwestern watersheds in 2011 to demonstrate that pelagic nutrient uptake occurs in streams of all sizes, but the rate of uptake is affected by both stream size and watershed land-use.

Overall, this study suggests that rivers in the GYA are typically N limited, and this differs from more human-impacted rivers in the Midwest. Additionally, water column nutrient uptake increases with stream/river size. These results on biofilm nutrient limitation status can be used to help water quality managers who want to maintain or increase nutrient retention by streams and rivers, in an effort to potentially reducing nutrient export to downstream receiving waters.
**Grand Teton National Park Summer Resources Internship Announcement 2014**  
(Two positions)

1. **Water resources intern:** Rising temperatures and changes in seasonal cycles of the streams and rivers in the Greater Yellowstone Ecosystem are likely to result in decreasing snowpacks and glaciers, earlier snowmelt, and lower base flows in dry months. The withdrawal of water for irrigation exacerbates these effects, resulting in further reduction in streamflow and rising stream temperatures, which affects hydrology and native trout fisheries. Grand Teton NP has many irrigation ditches and diversion structures associated with rights to use waters of the Snake and Gros Ventre Rivers. We need an intern to:

- complete mapping and documentation of ditches and add to the park’s water rights database,
- research and draft a set of best management practices as a guide for ditch operators, and
- assist with projects to improve stewardship of water resources, including thermal springs.

The water resource intern should have a background in hydrology, watershed or fisheries management, or related field. Some knowledge of GIS and GPS functionality is desirable, including experience with data management and spatial databases. This position involves considerable outdoors work, requiring candidates to be comfortable with fieldwork, hiking off-trail in forested terrain as well as in sagebrush grasslands.

2. **Museum intern:** Grand Teton’s museum collection contains an array of natural and cultural history specimens, from historic furniture and photographs to an extensive herbarium collection and large and growing archives. A major focus of recent museum work has been on the David T. Vernon Collection of American Indian Art and Artifacts. Many of the 1,400 objects in this collection, which include objects associated with more than 100 tribes, have undergone recent conservation treatment, and several hundred objects are on display in two park visitor centers, where park rangers interpret the objects and the collection’s history to thousands of visitors each year. The park seeks an intern to:

- do research and documentation on the history of the collection, which at one time was much larger and which was split in the mid-20th century
- assist with interpretation through a variety of means, from personal talks and programs to the development of newer interpretive media using new technology, and
- assist with care of the collection, learning monitoring and pest prevention techniques and other museum object conservation techniques and practices.

The museum intern should have a background in museum studies and/or anthropology, ethnology, or American Indian studies. Diverse applicants are encouraged to apply.

All applicants must be U.S. citizens and a student in the spring 2014 or summer 2014 semesters and be continuing in an academic program during the fall 2014 semester. Applicants should be able to work independently once provided direction and training. A current driver’s license and good driving record are also necessary.

Housing for these 8- to 10-week positions will be provided at the University of Wyoming-National Park Service Research Center, located at the historic AMK Ranch on the shore of Jackson Lake in view of the beautiful Teton Range. A $2,500 stipend will also be provided. Start and end dates are flexible but are expected to be sometime between mid-May and early September, 2014.

**How to apply:** Interested students should submit a **resume**, names and contact information for **three references**, their **expected graduation date**, and a short statement of interest and skills related to the internship(s) with Grand Teton National Park and the John D. Rockefeller Parkway via email to: (1) kathryn_mellander@nps.gov (307-739-3493) or (2) Bridgette_guild@nps.gov (307-739-3493) by 5:00 PM (MST) on February 28, 2014. Applications will be reviewed as soon as they are received so early application is encouraged.

More information about Grand Teton National Park, the John D. Rockefeller, Jr. Memorial Parkway, and nearby Yellowstone National Park can be found at [www.nps.gov](http://www.nps.gov).

**Diverse students and students with disabilities are especially encouraged to apply.**

**Reports for the 2013 Research Season are due by March 30th 2014. Please email Celeste at chavener@uwyo.edu if you have any questions.**
The UW NPS Research Station is a cooperative effort between the University of Wyoming and Grand Teton National Park operated at the NPS owned AMK Ranch located approximately 65 km north of Jackson, Wyoming in Grand Teton National Park. The primary function of the Research Station is to furnish housing, laboratory, and equipment support to enable researchers in the biological, physical and social sciences to access the unique aquatic and terrestrial environments of Grand Teton National Park and the Greater Yellowstone Ecosystem. In addition to providing facilities, the Research Center also directs a program to provide limited competitive funding to unsolicited research proposals that demonstrate the potential for significant contributions which may be best addressed in a park.

Work at the Research Station offers opportunity for interaction with other scientists in a diversity of disciplines. Regularly scheduled seminars create a stimulating atmosphere for discussion of research among scientists from the Research Station, Grand Teton and Yellowstone National Parks, Teton Science School, Wyoming Game and Fish, U.S. Fish and Wildlife Service, and others. The facilities and location are also an ideal setting for educational field trips and small educational and professional workshops and symposiums.

An obligation of each research group at the Station is to provide a written report of their findings during their stay at the AMK Ranch: Due on or before March 30, 2015. This narrative will appear in our Annual Station Report with a hard copy and online circulation which is an excellent way for our researchers to express preliminary and ongoing results. Our Annual Report highlights the productivity and relevance of work conducted by our patrons in helping the scientific community to understand this unique ecosystem.

The Research Station can house up to 55 individuals in facilities ranging from double to 10-17 person houses. All units are heated and equipped with beds, cooking utensils, and refrigerators. All but the smallest units have complete cooking and bathing facilities. Laundry facilities are available at Colter Bay, less that 4 km away. Requests for housing should include date of arrival and departure, the number of people, and the number of rooms (or cabins) requested. Housing costs are $25/day/per person/per room plus $7/day for each additional person. Researchers are billed for the entire length of stay unless changes are approved by the Director prior to arrival.

The Research Station's modern equipment meets many field and laboratory needs. Research Station equipment is available in the order of requests. Boats, rafts and canoes may be rented daily. Priority is given to investigators funded by the Research Station. Use of equipment for extended periods should be arranged prior to arrival. Requests for Station housing should include laboratory space requirements. If laboratory needs exceed space, the Director will make assignments. Researchers requiring exclusive use of a piece of laboratory equipment are requested to bring their own. Facilities and equipment include:

- **Wet and dry laboratories** - sample dryers, deionized water, refrigerators and freezers, hoods, waterbaths, and live-animal holding room;
- **Boats** - canoes, boats with motors and trailers, rubber rafts, 19 foot MonArk research vessel suitable for use on the region's large lakes;
- **Research supplies and equipment** - small mammal traps, spectrophotometer, balances, pH meters, glassware, centrifuges, microscopes;
- **Seminar rooms** - accommodate up to 100 people;
- **Library facilities** - over 2000 books and major scientific journals, access to on-line catalogs of major libraries in Wyoming and Colorado, and the internet;
- **Computer facilities** - word processing, data entry and manipulation, access to main-frame computers;
- **Camping supplies** - sleeping bags, cook stoves, and packs;
- **Wireless Internet Service** - provided in the Berol Lodge.
The Grand Teton Association offers a fellowship of up to $10,000/project for graduate studies focused on documenting aspects of the Greater Yellowstone Ecosystem, including Grand Teton and Yellowstone National Parks, the John D. Rockefeller, Jr., Memorial Parkway, and surrounding lands. Emphasis areas are lesser-known ecosystem elements such as air and water; geologic or other processes; plants, insects, reptiles, amphibians, fungi; natural soundscapes; and social science related to public understanding of natural resources use or management.

Graduate students pursuing a Master’s or Doctoral degree are invited to submit proposals to be judged on the following:

- The value of information to be gained by the scientific community and by land or resource managers
- The clarity of problem definition and uniqueness of the proposed approach
- Technical soundness of the proposed study
- Qualifications of the student and their major advisor/institution, and
- Completeness of proposal, which must present a budget clearly indicating the percent of support provided by this fellowship compared to other sources of support.

We encourage proposals that cover a major portion of studies which are new or only recently begun but are not fully funded. Projects may extend over several seasons, and must comply with appropriate agency regulations and permits (separately administered from this fellowship). Seasonal summer housing may be available at the UWNPS Research Center in Grand Teton NP— if desired, project budgets should include housing costs at $25/night and housing should be requested separately (http://www.uwyo.edu/uwnps/). Students are expected to provide a summary report or publication and one or more educational products to facilitate information transfer beyond the scientific audience, such as a presentation to site managers, the public, or non-technical article.

Fellowship Program Schedule:

<table>
<thead>
<tr>
<th>Date</th>
<th>Event</th>
</tr>
</thead>
<tbody>
<tr>
<td>December 20, 2013</td>
<td>Call for 2014 Boyd Evison Fellowship proposals</td>
</tr>
<tr>
<td>February 14, 2014</td>
<td>Fellowship applications must be postmarked</td>
</tr>
<tr>
<td>April 14, 2014</td>
<td>Fellowship awarded</td>
</tr>
<tr>
<td>Summer 2014</td>
<td>Research begins</td>
</tr>
<tr>
<td>December 30, 2015</td>
<td>Completion of project (degree may be conferred later)</td>
</tr>
</tbody>
</table>

The fellowship is supported by private donations and honors Boyd Evison, one of the National Park Service’s greatest leaders and supporters of expanding scientific knowledge to help shape wise management decisions and maintain uncompromised native resources. After his exemplary NPS career, Mr. Evison directed the Grand Teton Association prior to his death in 2002. Information on previous fellowship awardees can be found at http://greateryellowstonescience.org/research/fellowships.

For more information, contact Jan Lynch, GTA Executive Director, 307-739-3406 or Sue Consolo-Murphy, Grand Teton National Park Chief of Science& Resource Management, at 307-739-3481

Information about previous fellowship awardees and project titles can be found at http://greateryellowstonescience.org/research/fellowships

Applications must be postmarked by February 14, 2014.

Send to: Boyd Evison Graduate Fellowship, Grand Teton Association, P.O. Box 170, Moose, Wyoming  83012; email: Jan_Lynch@partner.nps.gov

Our WEB PAGE is http://www.uwyo.edu/uwnps
Instructions to Investigators
The Proposal Program is funded by the National Park and the University of Wyoming; therefore, it is limited to US academic institutions, government agencies and NGO researchers conducting their studies in the Greater Yellowstone Area.

Priority will be given to outstanding research proposals with potential for significant contribution which may be best addressed in a park setting or to researchers using the UW-NPS Research Station in Grand Teton National Park. These awards may be used as seed money to initiate promising new research programs. It is essential that contact be made with the park in advance to ensure that the research is compatible with park management.

The proposal must identify the individual from the park unit who was contacted. The researcher must provide evidence that all necessary permits can be obtained to conduct the research.

Project Investigators
The scientists (s) submitting a research proposal is/are expected to be the designated project investigator(s). The project investigator(s) must be a faculty member of an academic institution (academic institution is defined as one having a full-time (9 mo.) resident graduate and/or undergraduate student body), or be a full time member of a governmental or NGO research institution. Fiscal accountability must be assigned to the respective research institution. Undergraduate and graduate students cannot be project investigators.

Types of Research Proposals
All investigators desiring to work out of the UW-NPS Research Station in Grand Teton National Park must submit a research proposal. Also, the housing application attached to this newsletter must be submitted with proposals. Proposals for the Grant Program will usually be seeking partial or total support for a new research project. These proposals will require less than one year to complete and a budget of $5000 with no overhead or indirect costs. No more than $500 will be allowed for faculty supervision of field work and writing of the final report. General proposals may have partial or complete outside funding for research to be conducted at or through the Research Station. In those situations, proposals are to be submitted for Station approval regardless of funding. These proposals should be designed to be completed within one year.

Proposal Preparation
All new research proposals seeking fiscal support from the Research Station's Proposal Program shall be prepared using the following format:

Cover Sheet (Appendix A)
Generally, the authorized representative of the sponsoring institution will be the University President or his/her designee.

Justification and Scope
Include here a clear statement of the problem with well-defined objectives of the proposed research. This section should demonstrate the degree of scientific knowledge with respect to relevant literature and "state of the art" research needs, potential problems which may be encountered and the general approach to be used.

Significance
Discuss the significance or potential application of information to be derived from the proposed study. This should include a description of the expected final product, i.e. a technical journal article and/or a tool for resource management.

Methods
This section should contain a clear statement of research design and methods, i.e. location of study sites, facilities required, National Park Service or other agency assistance required (collecting permits, data and records, equipment, special study area requirements, etc.), as well as other research techniques. At the time of proposal submission, approval for these study requirements should have been obtained from the concerned park and/or other resource agencies.

Previous Work

References Cited

Budget (Required Format - Appendix B)
Include time and rate for all salaries. Please note that PI salary is limited to $500 including fringe benefits. No overhead or indirect cost will be awarded. Cost Share or matching fund information is not required.

Travel mileage charges shall not exceed $0.555 mile. Consider all items costing more than $5000 and having a shelf life of more than 1 years as equipment. All equipment purchased with Research Station funds remain the property of the Research Station.

Other Resources and Support
Please include information about other resources at the PI's disposal that will enhance the proposed research.

Budget Justification
A statement is required that justifies the general expenditure for supplies, travel and equipment.

Biographical Sketch of Project Investigator(s)
Include pertinent research projects, dates, amount and source of funding and scientific publications and reports. This brief summary should not exceed 1 page/person.

Reports
A Final Report is required to complete a resource research contract agreement: This report will appear in our UW-NPS Annual Report with hard copy and on-line circulation distributed to universities and agencies throughout the country. However, investigators are encouraged to publish the findings of their investigations in scientific publications. In addition, investigators are requested by the Park Superintendent to complete a brief annual report for park purposes, please contact Kathy Tonnessen [kathy.tonnessen@cfc.umn.edu] for more information. The final report should be emailed to Celeste Havener (chavener@uwyo.edu).

Specimen Collections
National Park Service (NPS) regulations and management policies require accountability for specimens collected in parks. Projects which involve specimen collecting are subject to curatorial requirements which should be included in the contract schedule. These requirements include accessioning and cataloging the specimens in the NPS museum collection (National Catalog) according to guidelines in the Museum Handbook - Park II and the User’s Manual for the Automated National Catalog System (ANCS). This document is available from the National Park Service, Chief of the Branch of Science, Rocky Mountain Regional Office.

The park collection manager or curator is responsible for accessioning a collection which includes both specimens and accompanying "field notes." Specimen cataloging is commonly a joint park staff-researcher responsibility involving the following activities:

- identification
- specimen preparation (e.g., pressing and mounting herbarium specimen) and preparation of label(s)
2013 REQUEST FOR RESEARCH PROPOSALS for UW-NPS RESEARCH CENTER, (cont.)

- preparation of catalog worksheet(s)
- marking specimen/label with NPS catalog number
- completing NPS catalog record (enter data into ANCS).

It is required that specimens being placed in a non-NPS repository be loaned to the repository. Park staff are responsible for completion of necessary loan documents. If a study involves the destruction of collected specimens, those specimens are not cataloged in the NPS National Catalog. The data are to be made public and reports filed with the appropriate officials. Special considerations and/or constraints related to any research project require that procedures addressing the foregoing should be clearly developed by the park collection manager/curator and the project investigator. Such procedures should be reflected in any research proposal being submitted to the Research Station.

Proposal Submission

ELECTRONIC SUBMISSIONS ONLY. Submissions should be submitted in PDF format to: Celeste Havener cha-vener@uwyo.edu. The coversheet, with appropriate original signature can be submitted as a separate PDF.

Proposal Evaluation

Before submission, each proposal should be reviewed by the investigator(s) for qualitative fulfillment of preparation criteria. All proposals will be subjected to the following review process:

1. A 6-member UW-NPS Research Station Steering Committee composed of UW faculty and NPS scientists will review and make the final evaluation of all new proposals seeking funding support.

2. In the meeting of the Steering Committee, reviews by the Park personnel and University of Wyoming Faculty are evaluated and selection of proposals for funding are made.

Notification of Proposal Status

Each project investigator will be notified of the Steering Committee's action on their proposal no later than March 4, 2014. Budgetary details and negotiations will then be undertaken.

1/7/14 RFP and guidelines mailed to potential researchers
3/10/14 Last day proposals accepted.
3/25/14 Research proposal acceptance/denial notification.

BUDGET EXAMPLE

<table>
<thead>
<tr>
<th>Category</th>
<th>Request Station Fund</th>
</tr>
</thead>
<tbody>
<tr>
<td>A. SALARIES, WAGES and BENEFITS</td>
<td></td>
</tr>
<tr>
<td>1. Principal Investigator (not to exceed $500)</td>
<td></td>
</tr>
<tr>
<td>2. PI's fringe benefits</td>
<td></td>
</tr>
<tr>
<td>3. Grad Research Assistant (Co-Investigator)</td>
<td>1800</td>
</tr>
<tr>
<td>4. Graduate Assistant fringe benefits</td>
<td>320</td>
</tr>
<tr>
<td>Total Salaries, Wages &amp; Fringe Benefits</td>
<td></td>
</tr>
<tr>
<td>C. EQUIPMENT unit value $5,000 or greater</td>
<td></td>
</tr>
<tr>
<td>1. Rubber raft, accessories &amp; outboard motor</td>
<td></td>
</tr>
<tr>
<td>D. EXPENDABLE SUPPLIES &amp; EQUIPMENT</td>
<td></td>
</tr>
<tr>
<td>1. Raft repair &amp; maintenance materials</td>
<td></td>
</tr>
<tr>
<td>2. Scanning electron microscope materials</td>
<td></td>
</tr>
<tr>
<td>3. Misc. glassware &amp; chemicals</td>
<td></td>
</tr>
<tr>
<td>4. Aerial photo enlargements</td>
<td></td>
</tr>
<tr>
<td>6. Misc field supplies</td>
<td></td>
</tr>
<tr>
<td>Total expendable supplies &amp; equipment</td>
<td>240</td>
</tr>
<tr>
<td>E. TRAVEL</td>
<td></td>
</tr>
<tr>
<td>3 Trips Laramie to Research Center &amp; return (780 mi/trip @ $.555 mi)</td>
<td>390</td>
</tr>
<tr>
<td>2. Jackson area - 7,000 mi travel over 60 mi basin @ $.555/mi</td>
<td></td>
</tr>
<tr>
<td>3. Aerial surveys, 15 hr @ $40/hr</td>
<td></td>
</tr>
<tr>
<td>4. Cabin Rent 3 months @ $25/ day</td>
<td>2250</td>
</tr>
<tr>
<td>Food costs when living in dormitory</td>
<td></td>
</tr>
<tr>
<td>TOTAL TRAVEL</td>
<td></td>
</tr>
<tr>
<td>F. OTHER COSTS</td>
<td></td>
</tr>
<tr>
<td>1. Examples include; scanning electron microscope charges, communication, literature search</td>
<td></td>
</tr>
<tr>
<td>I. TOTAL COSTS</td>
<td></td>
</tr>
</tbody>
</table>

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COVERSHEET and Budget Examples for Small Grant Proposals

APPENDIX A

COVERSHEET

PROPOSAL NO: ____________  UNIVERSITY OF WYOMING-NATIONAL PARK
EVALUATION RATING: ____________  SERVICE RESEARCH STATION
FINAL ACTION: ____________  Application for Grant to Conduct Research
(Administrative Use Only)

Responding to (circle one)  Newsletter  Hard Copy  Newsletter Email  Department Posting  Email RFP

Name of Principal Investigator: __
Title or Status: __

Department:
Institution: 
Address:

(City)                               (State)                                (Zip)
Telephone: Office: _______________________ Dept: _______________________ Home:
E-Mail Address:
Name or Names of Co-Investigators:

Project Title:

Budget (Required Format - Appendix C)
Funding Required:
Amount Requested from Research Station: $
Date of Project Initiation: _______________ Date of Termination:
Will Housing be Required: ( ) Yes ( ) No If Yes, where:
Date:

Signature of Authorized Representative of Sponsoring Institution
Name* : 
Title : 
Address :

Institution Contract Officer To Whom Contract Correspondence Should Be Sent:
Name: ____________________________ Address: __________________________ Phone:

*All grants will be made payable to the sponsoring institution for disbursement to project investigators. Signatures on this document acknowledge that if a research project is approved, the investigator will provide the Research Station with prescribed reports as scheduled in the award.
Housing Application

NAME: ____________________________ DATE: ______________

ADDRESS: ____________________________________________

EMAIL: ____________________________ PHONE: ____________________________

DATES OF RESIDENCE AT THE RESEARCH STATION

RATES This year are $25.00 for the 1st person and $7.00 for each additional person in the room.

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<th>If multiple dates, please use additional lines</th>
<th>ARRIVAL DATE i.e. the first night you will be staying at the AMK</th>
<th>DEPARTURE DATE i.e. the last night you will be staying at the AMK</th>
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You will be charged for all the dates you have reserved unless you cancel one week in advance of the reservation arrival date

All research groups staying at the AMK Ranch are required to provide an 8-10 page written report to the UW NPS Research Center by March 30th 2015. For a template or to send a report contact chavener@uwyo.edu

All classes are required to submit a brief written report of the class (preferably with photos)

COMPOSITION OF YOUR PARTY:

Please realize that space at the AMK is limited and families will be accommodated only after active researchers have been placed in housing.

Family Members: Wife or Husband: ______ Children:

Number of Non-Family Members (specify sex) requiring separate space:

______________________________________________

Research _______ Class _______ Symposium _______

RESEARCH STATION HOUSING PREFERENCE

(Cabin, Family or Dormitory Living Room)

First Choice:

Second Choice:

SPECIAL RESEARCH EQUIPMENT AND SPACE NEEDS AT STATION:

________________________________________________________________

________________________________________________________________

For specific questions please email Harold Bergman (Bergman@uwyo.edu)
or Celeste Havener (chavener@uwyo.edu)

Housing Application is also online at http://www.uwyo.edu/uwnps/linkslist.asp?linktype=Forms
HYDROLOGY, AIR QUALITY AND GEOLOGY

How do changes in the volume and timing of snowpack, loss of alpine glaciers, and forest disturbances influence stream and river discharge?

Investigate how high-elevation temperature and other climate data anomalies (thermal inversions, micro climate variables such as wind and temperature) relate to changes in the Teton glaciers.

Determine timing and pattern of snowmelt runoff in selected watersheds and relate changes in chemical concentrations as an indicator of changes in climate, soil processes, and deposition chemistry.

Identify changes - and rates of change - in Jackson Hole groundwater levels.

Develop protocols for change analysis using remote sensing to analyze effects of climate change on the hydrologic cycle and vegetative resources of Grand Teton NP over time.

(FOR questions about geologic and hydrologic studies, contact Kathy Mellander, Hydrologist/GIS Specialist, 307-739-3493).

ECOLOGY, VEGETATION AND SOILS

Predicting the spread of cheatgrass in relation to climate change on a local scale in Grand Teton National Park.

Soil food web study of Kelly hayfields to determine differences between native and agricultural soils.

Investigate effects of earlier plant flowering on pollinators and/or wildlife.

(For questions about studies of vegetation & soils, contact Kelly McCloskey, ecologist, 307-739-3678).

FISH & WILDLIFE

Identify native and non-native fish, amphibians, and invertebrates in Kelly Warm Springs and their tolerance ranges for water temperature and chemistry.

Potential habitat overlap in diet and habitat use of mountain goats and bighorn sheep in Grand Teton NP.

Seasonal movements and habitat use of sage grouse in Grand Teton NP.

Occurrence of lynx in and around Grand Teton NP.

(For questions about fish & wildlife projects, contact Steve Cain, senior wildlife biologist, 307-739-3485).

SOUNDSCAPES

Assess propagation of transportation noise in the park’s backcountry.

Develop a soundscape website including park-provided acoustic map and representative recordings.

Develop park-specific musical composition to augment acoustic mapping.

(For questions about soundscape projects, contact Shan Burson, bioacoustic ecologist, 307-739-3584).

HISTORY

Complete a history of the elk reduction program in Grand Teton National Park.

Complete a history of the Civilian Conservation Corps’ involvement in Grand Teton National Park, including road, trail, building construction and clean-up work conducted around Jackson Lake.

Research and document Buffalo Fork Ranger Station.

Research and document three park cemeteries.

Complete an initial context study of “imaging Grand Teton National Park,” a history of painters, film makers, and artists.

(For questions about historic structures topics, contact Katherine Wonsan, cultural resources specialist, 307-739-3671).

ARCHEOLOGY

Conduct a high-elevation archeological survey to provide new data on prehistoric human activity in alpine landscapes.

(For questions about archeology topics, contact Stacey Whitman, archeologist, 307-739-3643).

MUSEUM COLLECTIONS

Investigate the history of the David T. Vernon Collection of Indian Arts and Artifacts and what became of 8500 objects that are no longer part of the collection.

Identify subjects and document provenance for historic images of Grand Teton NP.

(For questions about museum topics, contact Bridgette Guild, museum curator, 307-739-3494).
GENERAL CONTRACT SCHEDULE

1/7/14  RFP and guidelines mailed to potential researchers
3/10/14  Last day proposals accepted.
3/25/14  Research proposal acceptance/denial notification.
5/1/14   Initiation of contract, start field work as appropriate.
3/30/15  Report due to UW-NPS Research Center