# ALL MURI FACULTY/STAKEHOLDER Position Descriptions - Summer 2016

<table>
<thead>
<tr>
<th>Applicant</th>
<th>Type</th>
<th>Email</th>
<th>Position Summary</th>
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<tbody>
<tr>
<td>Belthoff, Jim</td>
<td>REU</td>
<td><a href="mailto:jbeltho@boisestate.edu">jbeltho@boisestate.edu</a></td>
<td>Title: Undergraduate research ecologist Research: Examine urban-rural gradient effects on ecosystems using owls as focal species. Positions include field and laboratory research that focuses on teasing apart potential anthropogenic effects on birds of prey and future mitigation strategies. <strong>Location of position: BSU</strong></td>
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<tr>
<td>Brandt, Jodi -1</td>
<td>REU</td>
<td><a href="mailto:jodibrandt@boisestate.edu">jodibrandt@boisestate.edu</a></td>
<td>Social Science Surveyor: The student will participate in a large team-science project on Ecosystem Services and Urban Growth in the Treasure Valley. The student will interview local inhabitants about their perceptions of urban growth, water availability, and quality of life in Treasure Valley, and analyze the interview data to identify differences among individuals and groups. <strong>Location of position: BSU</strong></td>
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<tr>
<td>Brandt, Jodi -2</td>
<td>REU</td>
<td><a href="mailto:jodibrandt@boisestate.edu">jodibrandt@boisestate.edu</a></td>
<td>Satellite Data Analyst: The student will create a satellite image database for the Snake River Plains region. <strong>Location of position: BSU</strong></td>
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<tr>
<td>Forbey, Jennifer</td>
<td>REU</td>
<td><a href="mailto:jenniferforbey@boisestate.edu">jenniferforbey@boisestate.edu</a></td>
<td>Drug discovery as an ecosystem service of healthy natural ecosystems. The researcher would help our team identify novel solutions to pests and diseases from the chemical diversity found in sagebrush. <strong>Location of position: BSU &amp; College of Idaho</strong></td>
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<tr>
<td>Gardner, John</td>
<td>REU</td>
<td><a href="mailto:jgardner@boisestate.edu">jgardner@boisestate.edu</a></td>
<td>Undergraduate Research Assistant: This position will investigate the application of renewable energy technology at a small scale to increase community resilience. <strong>Location of position: BSU</strong></td>
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<tr>
<td>Han, Bangshuai</td>
<td>REU</td>
<td><a href="mailto:bangshuaihan@boisestate.edu">bangshuaihan@boisestate.edu</a></td>
<td>Literature and data collection - The student will be mentored on literature review of socio-biophysical system research, and help with relevant data collection. <strong>Location of position: BSU</strong></td>
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<tr>
<td>Hayden, Eric</td>
<td>REU</td>
<td><a href="mailto:erichayden@boisestate.edu">erichayden@boisestate.edu</a></td>
<td>Metagenomics Researcher - The project will investigate an underappreciated link in the coevolutionary forces that shape plant-herbivore arms races: the gut microbiome of herbivore specialists. <strong>Location of postiton: BSU</strong></td>
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<td>Name</td>
<td>Position</td>
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<tr>
<td>Heath, Julie</td>
<td>REU</td>
<td><a href="mailto:julieheath@boisestate.edu">julieheath@boisestate.edu</a></td>
<td>Undergraduate researcher: MURI student will conduct research on land use, climate change, and the biology of predatory birds, American kestrels. <strong>Location of position: BSU</strong></td>
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<tr>
<td>Heath, Julie</td>
<td>REU</td>
<td><a href="mailto:julieheath@boisestate.edu">julieheath@boisestate.edu</a></td>
<td>Monitoring golden eagle reproduction and recreation on a post-fire landscape <strong>Location of position: BSU</strong></td>
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<tr>
<td>Lowe, Scott</td>
<td>REU</td>
<td><a href="mailto:scottlowe@boisestate.edu">scottlowe@boisestate.edu</a></td>
<td>Undergraduate research associate: The research will address the effectiveness (success) of the U.S. Compensatory Mitigation Program for wetlands by collecting data and comparing the pre- and post- remotely sensed imagery for the project-specific and permittee-responsible mitigation projects in the Walla Walla USACE District <strong>Location of position: BSU</strong></td>
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<tr>
<td>Masarik, Matt</td>
<td>REU</td>
<td><a href="mailto:mattrmasarik@boisestate.edu">mattrmasarik@boisestate.edu</a></td>
<td>Regional Climate Computing REU: Regional weather and climate models are computationally intensive and require substantial data management capacity. The student will engage a number of ongoing projects related to regional weather and climate simulation aiding in the development and automation of high performance computing and data management workflows. <strong>Location of position: BSU</strong></td>
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<tr>
<td>Mikesell, Dylan</td>
<td>REU</td>
<td><a href="mailto:dylanmikesell@boisestate.edu">dylanmikesell@boisestate.edu</a></td>
<td>Undergraduate Research Assistant: The MURI undergraduate researcher will assist a BSU team to identify and map previously unknown locations of seismicity throughout Idaho. Low magnitude earthquake swarms are seismic hazard indicators that can pose a risk to local communities and stakeholders. <strong>Location of position: BSU</strong></td>
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<tr>
<td>Som Castellano,</td>
<td>REU</td>
<td><a href="mailto:rsomcastellano@boisestate.edu">rsomcastellano@boisestate.edu</a></td>
<td>Research Assistant: Agriculture and Irrigation Transitions Assistant  The research will involve data collection and analyses around the Boise region. The student will assist in utilizing secondary data, as well as in collecting and analyzing new data, in order to understand changes occurring in irrigation practices among farmers in the Treasure Valley. <strong>Location of position: BSU</strong></td>
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<tr>
<td>Idaho State University (ISU)</td>
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<tr>
<td>Baxter, Colden</td>
<td>REU</td>
<td><a href="mailto:baxtcold@isu.edu">baxtcold@isu.edu</a></td>
<td>“Linking fish, bugs, bats and people: investigating the web of life in the Fort Hall Bottoms river-floodplain ecosystem” - A collaborative study with the Shoshone-Bannock Tribes, focused on the Portneuf and Snake rivers and their floodplains located on the Fort Hall Reservation. <strong>Location of position: ISU</strong></td>
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</tbody>
</table>
Castro, Antonio  
REU  
castanto@isu.edu  
Social Science Surveyor:  
The student will participate in a large team-science project on Ecosystem Services and Urban Growth in the Portneuf Valley. The student will interview local inhabitants about their perceptions of urban growth, water availability, and quality of life, and analyze the interview data to identify differences among individuals and groups.  **Location of position: BSU and ISU**

Crosby, Benjamin  
REU  
crosby@isu.edu  
Geospatial Data Analyst: Project entails discovery of different environmental conservation projects in the region and the creation of a geospatial database.  **Location of position: ISU**

Edwards, John  
REU  
edwajohn@isu.edu  
Algorithm and software development of visualization and analysis tools for LiDAR and photogrammetry remote sensing data  **Location of position: ISU**

Godsey, Sarah  
REU  
godsey@isu.edu  
Temporary streamflow under different management practices  
- Learn about how to evaluate the amount and spatial patterns of water in a watershed, and how temporary streamflow is affected by management decisions.  **Location of position: ISU**

Hale, Rebecca - 1  
REU  
ahalereb3@isu.edu  
Research Assistant  
Human perceptions of rivers and streams across land uses and stream flow permanence  **Location of position: ISU**

Hale, Rebecca - 2  
REU  
ahalereb3@isu.edu  
Effects of development on ephemeral, intermittent, and perennial streams  **Location of position: ISU**

Keeley, Ernest  
REU  
keelerne@isu.edu  
Bioenergetic calculations as a means of estimating and predicting temperature-induced changes to habitat quality for stream fishes.  **Location of position: ISU**

Lybecker, Donna  
REU  
lybedonn@isu.edu  
Survey researchers:  
Work with a graduate student to conduct household surveys about citizens’ view on where they live and how they value public ecosystem services. This work will then prove insight into the social motivations and social pressure that drive residential development across Idaho.  **Location of position: ISU**

Peterson, Charles  
REU  
petechar@isu.edu  
Research Assistant: The effects of landscape change on amphibian and reptile occupancy in Idaho.  **Location of position: ISU, UI, and Lewiston, ID**
Reinhardt, Keith  REU  reinkeit@isu.edu  Quantifying the biotic and abiotic factors that control tree seedling establishment at the urban-wildland interface. **Location of position: ISU

Reinhardt, Keith  REU  reinkeit@isu.edu  Urban Ecology: Quantifying “blue” and “green” water flows in Pocatello. The intern will measure water infiltration, evaporation, and transpiration across an “urbanization” gradient in Pocatello. **Location of position: ISU

Reinhardt, Keith  REU  reinkeit@isu.edu  Ecosystem Services: Quantifying water storage and fluxes in plants across a precipitation gradient at Reynolds Creek Critical Zone Observatory. **Location of position: ISU and southeast Idaho (1 hr outside of Boise)

Smith, Rosemary  REU  smitrose@isu.edu  The role of beetles in ecosystem services and food webs. Field and lab experiments. **Location of position: ISU

Welhan, John  REU  welhjohn@isu.edu  Data compilation and GIS analysis position To quantify spatial and temporal in trends residential septic-based development / growth in the lower Portneu River Valley. **Location of position: ISU, Bannock Co. P&Z

University of Idaho (UI)

Becker, Dennis  REU  drbecker@uidaho.edu  Policy Analyst Student Fellow - conduct policy analysis research on contemporary natural resource issues for the Policy Analysis Group at the University of Idaho. Summer of 2016 projects may include state wildfire suppression funding mechanisms, federal land management reform, or leasing of state trust lands for hunting. **Location of position: UI

Bowman-Prideaux, Chris - REU  cbowmanprideaux@mail.com  Invasive Species Plant Technician- This individual will conduct research on the cover, density, and plant productivity of different plant functional groups at sites that vary in fire history (number of burns) and post-fire vegetation treatment history (seeded, non-seeded). The research will compare the native plant composition with cheatgrass, russian thistle, and other non-natives among sites. **Location of position: Boise, ID (not UI)
Bowman-Prideaux, Chris - REU  
**Location of position:** Boise, Idaho (not UI)

**Description:** Geospatial Research Technician - This person will use ArcMAP in combination with spatial analysis software to examine the spatial distribution of plant species on sites that have been both treated and untreated after a fire. Sites may have burned up to 6 times. Analysis software likely to be used is either FRAGSTATS or Programita, depending on research question addressed.

Bowman-Prideaux, Chris - REU  
**Location of position:** Boise, ID (not UI)

**Description:** Remote Sensing Intern - This position will be using remote sensing and some field verification to identify how post-fire plant and ecosystem recovery relates to burn severity.

Brooks, Randall - REU  
**Location of position:** UI

**Description:** Natural Resources Research Assistant. RA will help PhD collect qualitative and quantitative data on wildland firefighter mental and physical health while balancing protection of ecosystem resources.

Caudill, Chris - REU  
**Location of position:** UI, Yakama, Nez Perce, and Umatilla tribal lands

**Description:** Ecosystem role of Pacific lamprey marine derived nutrient delivery to spawning streams of the Columbia Basin.

Cook, Stephen - REU  
**Location of position:** UI

**Description:** The research will focus on examining populations of mountain pine beetle, a very aggressive bark beetle, attacking novel host pines in the UI arboretum.

Fennema, Scott (and Dr. Erin Brooks) - REU  
**Location of position:** UI

**Description:** Understanding phosphorus dynamics for management of water quality: This research project would focus on understanding phosphorus dynamics within the Saint Joe and Saint Maries river basin, which account for approximately 40% of the total phosphorus loading into Coeur d’Alene.

Johnson, Daniel - REU  
**Location of position:** UI

**Description:** Research Assistant Position studying uptake and fate of heavy metal nanoparticles in plants.

Kimsey, Mark - REU  
**Location of position:** UI

**Description:** Field research technician to assist in assessing the impacts of forest management on soil and tree health.

Liao, Felix - REU  
**Location of position:** UI

**Description:** Development of a geovisualization portal for environmental hazards for stakeholder/citizen engagement in Coeur d’Alene.
Langman, Jeff  REU  jlangman@uidaho.edu  MURI summer research intern: assist with ongoing metal mobility studies examining the formation and transport of metal nanoparticles in mining-impacted wetlands and shallow groundwater systems of the Coeur d'Alene Basin.  
**Location of position: UI**

Marx, Christopher  Internship  cmarx@uidaho.edu  Student Intern: Optimizing Vanillic Acid Demethylation in Methylobacterium extorquens via Genetic Engineering.  
**Location of position: UI**

Nelson, Andrew  REU  asnelson@uidaho.edu  Research Assistant - Student will be involved with a project examining north Idaho moist forest responses to long-term streamflow  
**Location of position: UI**

Radil, Steven  REU  sradil@uidaho.edu  Research Assistant: The project involves examining perceptions of Idaho’s natural amenities by political migrants and identifying where the impacts of migration-related new urban development are likely to be concentrated. Students will use GIS to develop geographic data on migration in Idaho and will review media and published material about political migration to identify the types of natural amenities that are involved in the selection of new development sites.  
**Location of position: UI**

Radil, Steven  REU  sradil@uidaho.edu  Undergraduate Research Assistant: Data collection and analysis of global economic and political networks. Student will develop competence in network-based data, visualization, and analysis.  
**Location of position: UI**

Solomon, Mark  REU  msolomon@uidaho.edu  Coeur d'Alene Socio-Ecological Survey Design: Implement and analyze survey of Coeur d'Alene area business owners to determine importance of Lake Coeur d'Alene in their business decisions.  
**Location of position: UI CDA Harbor Center**

Waynant, Kristopher  REU  kwaynant@uidaho.edu  Undergraduate Research Assistant - This position entails the synthetic organic construction of carbon linked glycosides for incorporation into future pest management programs.  
**Location of position: UI**

Wilhelm, Frank  REU  fwilhelm@uidaho.edu  Aquatic Researcher: Student will work with limnologists from UI and CDA tribe to identify and measure Lake CDA zooplankton to incorporate grazing into a lake-wide computer model.  
**Location of position: UI CDA Harbor Center**
Wilhelm, Frank - REU   fwilhelm@uidaho.edu   Aquatic Researcher: This project aims to quantify the diurnal and seasonal patterns of dissolved oxygen and total phosphorus in the Fernan Lake wetland to determine its role in the whole-lake P budget. **Location of position: UI CDA Harbor Center**

**Stakeholders**

Alsup, Steve Internship   stevealsup@gmail.com   Ferruginous Hawk Breeding Ecology Intern: Project interns will be supervised by biologists from the BLM, Birds of Prey Partnership, and College of Western Idaho. Interns will be trained in raptor identification, the use of field research techniques to study ferruginous hawk breeding biology, and will be given guidance on how to assess and document reproductive performance. Participants will gain experience using maps and navigation systems, standard field equipment, and mapping software to support project goals. Participants will also assist USFS and BLM biologists during field trips, where they will participate in public outreach and learn to handle, measure, take blood samples, and band ferruginous hawk nestlings. Regular daily travel from Boise will be required. **Location of position: BSU/CWI**

Patterson, Charles (BLM-Bureau of Land Management)   cpatterson@blm.gov   Trail Survey of lands near Pocatello, Idaho. The Bureau of Land Management (BLM) - Pocatello Field Office (PFO) seeks a MURI student to develop and administer a field-based survey to learn what trail users around the City of Pocatello prefer in terms of trail usage and how this relates to the public lands administered by the BLM-PFO surrounding the city. **Location of position: ISU**

Sanger, Hannah Internship   hsanger@pocatello.us   Portneuf River Visioning study assistant. Assist City of Pocatello staff with compiling and analyzing research related to the Visioning Study, including developing ESRI storymaps for web-based presentations. **Location of position: ISU**

**Idaho 2 and 4 Year Colleges**

Edgehouse, Michael REU   mjedgehouse@lcsc.edu   Effects of agriculture and mining on aquatic invertebrate assemblages in the snake river drainage. We will visit several river systems, including Tammany Creek, Grande Ronde River, Imnaha River, and Wallowa river and collect aquatic invertebrates at each locale to compare size and community assemblage in each system. **Location of position: LCSC**
Collect water quality data from Snake River reach through Hells Canyon NRA. Develop methodology for adding data to existing GIS database. **Location of position: LCSC and Hells Canyon

Comparing the malacofauna of two Idaho streams in the context of landscape use and ecosystem services.
- This effort intends to build an undergraduate research program that provides opportunities for students to advance their academic and professional skills by participating in authentic research projects. **Location of position: CWI

Student Researcher: Monarch Butterfly Conservation
Participants will be mentored through each step of the research process and will learn how to use field research techniques to study monarch breeding biology and geospatial analysis to evaluate habitat suitability and quantify human disturbance. Participants will be trained to use GPS/GIS technology to map milkweed distribution and will gain experience searching for and documenting occurrences of breeding monarch butterflies. Frequent travel to local field sites in Nampa and Boise will be required. **Location of position: CWI

Student Researcher: Osprey Habitat Suitability
MURI participants will be mentored through each step of the research process and will learn how to use field research techniques to study osprey breeding biology. Participants will gain experience collecting data for habitat evaluations and making observations to quantify human disturbance and will learn to handle, measurement and mark osprey nestlings. Frequent overnight travel and work from Boise will be required. **Location of position: CWI

Native American Science Researcher **Location of position: Lapwai, ID

Summer Research Internship-Stream Fish Ecology:
The objective of our research is to evaluate the response of Columbia River redband trout to stream drying. Specifically, we plan to evaluate the effect of low dissolved oxygen concentrations (i.e. hypoxia) on redband trout survival. **Location of position: College of Idaho