MURI Position Summaries - Summer 2017

*The following is a list of all faculty/stakeholder applicantions that have been submitted for Summer 2017. **Please note that this list does not mean that a faculty/stakeholder applicant will receive a student placement or an official award. All positions are posted for student applicants to review in order assist them in identifying their top three position choices. An official award is only made after a successful pairing between student & faculty has been made.*

MURI Mentor	Study Site	Job Type	Email	Position Summary
Boise State University				
Barber, Jesse	BSU	REU	jessebarber@boisestate.edu	Noise and Wildlife: From Landscape Patterns to Mechanistic Underpinnings. ***Position Location: Boise State University/Mountains outside Sun Valley, ID*
Brandt, Jodi (1)	BSU	REU	jodibrandt@boisestate.edu	Land Use Research Assistant: In this position, the student will record land use records in counties in Idaho and transfer them into a digital format. Position requires travel to other parts of Idaho and Montana. ***Position Location: Boise State University*
Brandt, Jodi (2)	BSU	REU	jodibrandt@boisestate.edu	GIS Spatial Analyst- Spatial analysis in support of human-environment systems. The student will use GIS to analyze spatial environmental and social datasets. The student will work with faculty, grad student and post-doctoral researchers. The student will benefit from the project by gaining technical skills that are desirable on the job market. ***Position Location: Boise State University*
Carter, Neil	BSU	REU	neilcarter@boisestate.edu	What factors regulate the capacity for people and wildlife to coexist. The MURI student would focus on using field-based and remotely-sensed data to test the importance of artificial night-lighting and anthropogenic noise on the behaviors and habitat use of large terrestrial mammals (mule deer, elk, and cougars) along the wildland-urban interface – the confluence of human development and undeveloped natural land covers. ***Position Location: Boise State University*
DeGraff, Marie Anne	BSU	REU	marie-annedegraaff@boisestate.edu	Soil structural and functional responses to recurring fire in the Sagebrush Steppe of the Northern Columbia Basin. ***Position Location: Boise State University*

Forbey, Jennifer	BSU	REU	jenniferforbey@boisestate.edu	Discover New Pesticides in Native Plants as an Ecosystem Service of the Sagebrush Steppe. The objective of this research is to use the behavior of golden eagles in southwestern Idaho to direct the discovery of plants with pesticidal properties. ***Position Location: Boise State University*
Glenn, Nancy (1)	BSU	REU	nancyglenn@boisestate.edu	Training in GPS in support of Reynolds Creek CZO and developing biomass allometric equations with existing field data for remote sensing analysis. ***Position Location: Boise State University*
Glenn, Nancy (2)	BSU	REU	nancyglenn@boisestate.edu	Field and lab analysis to support remote sensing vegetation mapping for restoration priority areas. ***Position Location: Boise State University*
Godwin, Liz	BSU	REU	lizandragodwin@boisestate.edu	Title: Graphene Foam- Carbon Nanotube Composites for Lead Detection Research Description: The goal of this research is to further the development of portable sensors by combining carbon nanotubes (CNTs) and graphene foam to facilitate sensor development on a flexible substrate. The sensors that will be developed will aid in the detection of heavy metals like lead, reliably and with the added advantage of being portable. ***Position Location: Boise State University*
Heath, Julie	BSU	REU	julieheath@boisestate.edu	Studying birds in a changing world. Work with our team to develop new methods for studying birds. We are working on both remote-sensing through cameras and biomolecular techniques for aging of birds. ***Position Location: Boise State University*
Hillis, Vicken (1)	BSU	REU	vickenhillis@boisestate.edu	Project 1: A computational model of subak irrigation management in Bali, Indonesia. This project uses an agent-based model to describe, understand and predict the complex dynamics of the iconic subak system of irrigation management used for rice fields in Bali. ***Position Location: Boise State University*
Hillis, Vicken (2)	BSU	REU	vickenhillis@boisestate.edu	Project 2: Cross-site, integrated modeling and experiments to examine ecosystem services that involve cooperative dilemmas. In this project we combine computational simulations with behavioral experiments to investigate the relationship between communication and cooperation in realistic socio-ecological settings involving ecosystem services as cooperative dilemmas. ***Position Location: Boise State University*

Lee, Jaechoul	BSU	REU	jaechoullee@boisestate.edu	Evaluation of PERSIANN-CDR product for seasonal mean and extreme precipitation trends ***Position Location: Boise State University*
Lindquist, Eric	BSU	REU	ericlindquist@boisestate.edu	"Big Data and Water Management: Challenges and Opportunities." Conduct literature reviews and content analysis of media and government sources in regard to the use of big data for decision making in the water sector. ***Position Location: Boise State University*
Moroney, Jillian	BSU	REU	jillianmoroney@boisestate.edu	Treasure Valley Water Atlas: Students will work with an interdisciplinary team of social and physical scientists in collecting data, designing infographics, and/or writing copy for a website that describes the Boise River water system. ***Position Location: Boise State University*
Miller, Robert	BSU	REU	robertmiller7@boisestate.edu	Post-fledging Survival of Northern Goshawks within the Minidoka Ranger District of the Sawtooth National Forest. ***Position Location: College of Southern Idaho*
Norton, Todd	BSU	REU	toddnorton@boisestate.edu	Standardized signage for Water Contaminants in Freshwater Systems. ***Position Location: Boise State University*
White, Merlin	BSU	REU	merlinwhite@boisestate.edu	Probing human influenced landscapes for microbial evidence of impact on symbiotic systems in support of MILES Brief description: The research will be both field- and lab-based, with students assessing specified sites in Boise and vicinity to collect target arthropods (to assess specific gut dweling endobionts), from terrestrial to aquatic zones, with some relationship to broader MILES goals and other projects (i.e. insects in impacted waterways vs. more pristine tributaries; riparian zones along urban river corridors compared to upper pre-dam reaches such as with the Boise River; impacts of development on ponds and drainages; pest insect populations near effluent zones and outflows, or drainage grates etc). ***Position Location: Boise State University*

Idaho State University

Baxter, Colden	ISU	REU	baxtcold@isu.edu	Linking aquatic insects and terrestrial insectivores: studying the web of life associated with the Snake River and its floodplain ***Position Location: Idaho State University*
Burnham, Morey	ISU	REU	burnmore@isu.edu	Analyzing Idaho farmers' Capacity to Adapt to Water Curtailments in the Eastern Snake River Plain The overarching objective of the proposed research is to evaluate the capacity of agricultural producers reliant on groundwater for irrigation in southern Idaho to adapt to new water restrictions, with a particular focus on how their interactions with cross-scalar institutions, policies, and economies support or obstruct their ability to do so. ***Position Location: Idaho State University*
Castro, Antonio (1)	ISU	REU	castanto@isu.edu	Title: Social Perceptions of Conservation Efforts Survey Project - The Social-Ecological Research lab is looking for 1-2 students to help with a social perception survey project this summer. Students will administer short surveys to local stakeholders throughout the Portneuf River watershed, asking individuals about their perceptions on local public and private conservation efforts happening in the watershed. These students will gain experience in quantitative and qualitative survey methods, in communication skills, and in understanding the connections between the physical and social aspects of their local environment. Students will also have the opportunity to increase their understanding of data entry, spatial modeling, and land use policy. ***Position Location: Idaho State University*
Castro, Antonio (2)	ISU	Intern-ship	castanto@isu.edu	Fishing Ecosystem Services We will be collecting salmonid diets via gastric lavage. We will also be collecting surveys from anglers to better understand their perceptions on ecosystem services provided by salmon flies. ***Position Location: Idaho State University*

Crosby, Benjamin	ISU	REU	crosby@isu.edu	Historic conservation actions and water quality in Marsh Creek, Idaho. Research Assistants (2) will participate in, field, laboratory and archive research focused on how past and present conservation efforts have impacted water quality. Students will be responsible for the collection, organization and transcription of historic data held by the Department of Environmental Quality (DEQ) and at the Natural Resource Conservation Service (USDA-NRCS) into a geographic information system database. Students will also assist in the calibration, deployment and maintenance of a water quality sensor and sampling network in coordination with two M.S. graduate students studying Marsh Creek. ***Position Location: Idaho State University*
Delparte, Donna	ISU	REU	delparte@isu.edu	Unmanned Aircraft Systems Data Collection and Image Processing Research Experience ***Position Description: Idaho State University*
Edwards, John	ISU	REU	edwajohn@isu.edu	Algorithm and software development of visualization and analysis tools for LiDAR and photogrammetry remote sensing data. ***Position Location: Idaho State University*
Godsey, Sarah	ISU	REU	godsey@isu.edu	Understanding temporary streams across a land use gradient in southeastern Idaho *Use field-based, laboratory, and remote sensing techniques to understand how the amount and quality of water varies among urban, rural, and wildland systems ***Position Location: Idaho State University*
Hale, Rebecca (1)	ISU	REU	halereb3@isu.edu	MURI Research Assistant – Trace gas fluxes from intermittent streams. Greenhouse gases, such as carbon dioxide, methane, and nitrous oxide can contribute to global climate change, but the role of temporary streams – those that are not flowing all of the time – is still unknown. The MURI student will work to measure fluxes of greenhouse gases from a variety of streams in the Gibson Jack watershed and link to measurements of stream flow and other stream characteristics. ***Position Location: Idaho State University*

Hale, Rebecca (2)	ISU	REU	halereb3@isu.edu	MURI Research Assistant – Linking stream geomorphology, stream metabolism, and algal blooms in an agricultural stream Agriculture can have many significant effects on downstream ecosystems, including elevated nutrient concentrations and erosion. MURI student will work as part of an interdisciplinary team investigating the effects of turbidity on ecosystem processes such as primary productivity and respiration. ***Position Location: Idaho State University*
Hale, Rebecca (3)	ISU	REU	halereb3@isu.edu	MURI Research Assistant – Water quality improvements in stormwater treatment wetlands Urbanization can have many detrimental impacts on downstream ecosystems due to changes in hydrology and water quality. Stormwater treatment wetlands are being used to treat stormwater in Pocatello, but it is unknown how effective these systems are. The MURI student will be involved in ongoing efforts to evaluate the functioning of two urban stormwater wetlands. ***Position Location: Idaho State University*
Keeley, Ernest (1)	ISU	REU	keelerne@isu.edu	Instream structures increase pool habitat for cutthroat trout in simplified streams. Habitat alteration in the riparian zones of streams often results in a decrease and of loss of fish habitat complexity, quality, and abundance. In this study, we test the effectiveness of an instream restoration effort, designed to increase the availability of suitable habitat for native cutthroat trout populations in headwater streams. ***Position Location: Idaho State University/field locations*
Keeley, Ernest (2)	ISU	REU	keelerne@isu.edu	3-D Photogrammetry Identifies Spatial and Temporal Scales of Resource Exploitation for Drift Feeding Fish ***Position Location: Idaho State University*
Lohse, Kathleen (1)	ISU	Intern-ship	klohse@isu.edu	Soil quality is a key ecosystem service that is being altered by land use/land cover change and climate change. This MURI intern will be exposed to soil quality analysis including measuring soil pH, electrical conductivity and soil organic carbon. The intern will learn safety and laboratory protocols and procedures, methods for soil quality measurements, and have multiple opportunities (if desired) to go to the field with graduate student and/or field specialist(s) to get experience with collection of soils. ***Position Location: Idaho State University*

Lohse, Kathleen (2)	ISU	Intern-ship	klohse@isu.edu	Water quality is a key ecosystem service that is in jeopardy in growing mid-sized cities. This MURI internship will expose students to water quality analyses of fresh and groundwater samples. The student will learn about safety and analytical lab protocols and procedures including filtering, preparation and cleaning of bottles for sample collection, quality control of analyses, preparation of standards and calibration of instruments, and data analysis. ***Position Location: Idaho State University*
Peterson, Charles	ISU	REU	petechar@isu.edu	Research Assistant. The effects of landscape change on amphibian and reptile occupancy in Idaho. ***Position Location: Idaho State University & University of Idaho (Lewiston, Idaho)*
Reinhardt, Keith	ISU	REU	reinkeit@isu.edu	Quantifying the "green water" outputs in an urban forest ecosystem. Understanding the cost:benefit ratio of urban greenspaces and plants requires a thorough understanding of urban water budgets, and is useful information for both city planners as well as private citizens. This project aims to quantify tree water use in native and nonnative trees across a urbanization gradients.***Position Location: Idaho State University*
Smith, Rosemary	ISU	REU	smitrose@isu.edu	Tracking ecosystem services: The role of carrion beetles in the recycling of carbon and nitrogen. ***Position Location: Idaho State University*
Stoutenborough, James	ISU	Intern-ship	james.stoutenborough@isu.edu	Social Scientific Research Internship. This position is designed to provide the MURI student with hands on experience drafting empirical research with the intent of publication. ***Position Location: Idaho State University*
Taylor, Casey	ISU	REU	taylcas3@isu.edu	Title: Adoption of Conservation Practices in the Marsh Creek and Upper Portneuf Basins Brief Description: Students (2) will participate in a project using interviews and survey analysis to understand how local landowners perceive the value and effectiveness of conservation practices aimed toward improving water quality, and how these perceptions affect their participation in conservation programs. ***Position Location: Idaho State University*

University of Idaho

Brooks, Erin	UI	REU	ebrooks@uidaho.edu	Wildfire legacy effects on soil phosphorus distribution and availability in the Coeur d'Alene basin. ****Position Location: Coeur d'Alene, Idaho*
Harrington, Kyle	UI	REU	kharrington@uidaho.edu	Agent-based modeling for game theoretic dynamics of public goods management and governance Development of a game theory simulation to model the management of public goods based upon ecosystems in Idaho. *** Position Location: University of Idaho*
Kimsey, Mark	UI	REU	mkimsey@uidaho.edu	Forest Ecological Assessment. Collect forest metrics and analyze for management and ecological impacts on forest productivity. ***Position Location: University of Idaho*
Langman, Jeff (1)	UI	REU	jlangman@uidaho.edu	Influence of Sulfur Form on Heavy Metal Mobility and Water Quality in a Mining-Impacted Lateral Lake of the Coeur d'Alene River: The broader goal of the study is to further the understanding of the seasonal flux of sulfur forms in a mining-impacted environment where changes in the sulfur form can scavenge metals or release them into porewater, determine the timing of the release of metals into surface waters, and affect the beneficial use of surrounding water resources. The study will involve the collection of lake water samples, extraction of porewater from benthic sediments, and preservation of sediment forms for chemical analyses and X-ray spectroscopy. ***Position Location: University of Idaho*
Langman, Jeff (2)	UI	REU	jlangman@uidaho.edu	Evaluation of Metal Mobility and Microbial Dynamics in Lake Coeur d'Alene Sediments with Alteration of Oxidation-Reduction Conditions from a Simulated Algal Bloom: Use a benchtop column experiment to evaluate the response of lake bottom sediments and potential release of heavy metals to the water column from a new input of detrital organic matter and sustained anoxic conditions. Evaluation of the spatial and temporal evolution of the physicochemical environment, soluble metal concentrations, and microbial community within the sediment column to better understand heavy metal mobility under a potential future condition of Lake Coeur d'Alene. ***Position Location: University of Idaho-Coeur d'Alene*
Lew, Roger	UI	REU	rogerlew@uidaho.edu	Mobile Application Development for a Decision Support Tool for obtaining risk to lead exposure based on spatial data. ****Position Location: University of Idaho*

Liao, Haifeng	UI	REU	hliao@uidaho.edu	Modeling cumulative effects of wildfire hazard policy and natural amenities on residential location behavior to inform landscape early warning and information systems (LEWIS). The student will help compile land use, residential parcel data, wildfire data and emerge NLCD and the parcel data in the Coeur d'Alene area. ***Position Location: University of Idaho & Coeur d'Alene area*
Ma, Xiaogang	UI	REU	max@uidaho.edu	Title: A Fresh Insight into the MILES Research Network towards Its Synthesis Stage Short intro: This project aims to explore the further potential of Linked Data query and visualization for the three Idaho university VIVO websites with a focus on MILES information and the synthesis of the program's outputs. ***Position Location: University of Idaho*
Matsaw, Sammy	UI	REU	mats4209@vandals.uidaho.edu	Understanding the Ecology of Native Freshwater Mussels and Reconnecting Cultures in Idaho Streams. The student intern will participate in rafting trips down the scenic and wild rivers of Idaho working with the Tribal people of the waterways. Student intern will be gather information about the tribes interest in local waterways and First Foods, namely, freshwater mussels but also other source foods. The intern will also gather snorkeling observations and counts of freshwater presence/absence and taxonomy. At UI, intern will work with the graduate student to process samples and data. Interpretations will be provided from both a Western and Indigenous Science perspective during the experience while reading and discussion around relevant topics will be expected.***Position Location: University of Idaho*
Moberly, James	UI	REU	jgmoberly@uidaho.edu	A Passive Magnetized Metal Removal System Utilizing Functionalized Nanoparticles for Treatment of Seasonal Acid Rock Drainage: The generation of acid rock drainage from the weathering of sulfidic ores and waste rock continues to significantly impact water resources and ecosystem functions in Idaho, across the United States, and around the globe. Development of new active and passive treatment systems for reducing the impact of acid rock drainage is paramount to restoring our waterways and ecosystems. ***Position Location: University of Idaho*

Parent, Christine (1)	UI	REU	ceparent@uidaho.edu	Environmental and Climatic Factors Influencing the Survival of Idaho Endemic Mountain Snails. The goal of this project is to assemble a database of environmental and climatic data corresponding to the geographical distributions of Idaho endemic mountain snails. ***Position Location: University of Idaho*
Parent, Christine (2)	UI	REU	ceparent@uidaho.edu	Distribution and description of Idaho endemic mountain snails. The project aims at describing the geographical distribution of endemic mountain snails found in Idaho. This work will set the foundation for further protection of this remarkably diverse group of species. ***Position Location: University of Idaho*
Roll, Mark	UI	REU	mroll@uidaho.edu	This project is focused on forming calixarene nanocapules for sequestering potential environmental toxins, such as PCBs and fluorinated organic materials. This is an extension of previous synthetic efforts documenting reaction-crystallization behavior in these compounds. ***Position Location: University of Idaho*

Stakeholders

Alsup, Steve	Birds of Prey	REU	stevealsup@gmail.com	Undergraduate Researcher Our research evaluates factors that affect the habitat suitability of nesting ferruginous hawks (Buteo regalis) in southwestern, ID. We use diverse field techniques and geospatial analyses to quantify and test the relative impacts of variables associated with habitat, fire regimes, human disturbance and environmental contaminants. Opportunities exist for students to collect and analyze data that will be used in nest success and habitat suitability models that will inform local ferruginous hawk management efforts and will contribute to regional ecosystem services modeling efforts. ***Position Location: Treasure Valley, ID*

Brower, Anthony	Kairosys Inc.	Intern-ship	tbrower@kairosys.net	Project Title: Data correlation and modeling support for remote sensing data acquired from aerial and ground imaging on alfalfa seed crop. The work in this MURI project will consist of documenting, cross-correlating, modeling, and analyzing narrowband and broadband imagery. The data is obtained from actual farms and greenhouse research plots. The output of this work is part of the solution that helps farmers make predictive decisions on optimum alfalfa bloom, which enables them to synchronize releasing managed pollinators into the field, thereby increasing crop yield. ***Position Location: Boise/Treasure Valley*
Willadsen, Eric	Land Trust of the Treasure Valley (LTTV)	Intern-ship	ewilladsen@lttv.org	The Land Trust of the Treasure Valley has partnered with CWI's horticulture program to provide students opportunities to collect, propagate and plant native seedlings in an effort to restore wildlife habitat in the surrounding area. Currently, a CWI student is creating a local seed collection and propagation manual. The 2017 MURI summer intern will be field testing and researching the validity of this manual as a viable tool for future propagation and restoration efforts. ***Position Location: College of Western Idaho*
Settell, Mike	Water-shed Guardians Inc.	Intern-ship	mike@watershedguardians.org	Beaver are increasingly recognized as important suppliers of ecosystem services. However, recognition of this fact by the public, specifically, water users is slow. Many have outdated information about the impact of beaver on water supply and delivery and frequently kill them, though much of these kills are un-documented. The intern will demonstrate that water flows are larger and more sustained during low water years in streams with beaver. The intern will installing stream gauge stations on streams with and without beaver and help develop a volunteer stream flow monitoring net work based upon mobile phone apps. ***Position Location: Pocatello, ID & surrounding areas*

Idaho 2-4 Year Colleges

Backman, Thomas	NWIC	Intern-ship	tbackman@nwic.edu	Title: Native Plant and Fish Culture We have projects on Native Plants :horticulture, restoration, and biocontrol; Fishery Restoration: fish culture, monitoring and evaluation, salmon, steelhead, and lamprey. ***Position Location: Northwest Indian College (Lapwai, ID)*

Flock, Rebecca	CWI	REU	rebeccaflock@cwidaho.cc	Biogeochemistry: Nutrient Transformation and Impact in Lakeshore Wetlands. Deposition of fertilizers to aquatic ecosystems is known to increase eutrophication, anthropogenic emissions of greenhouse gases, and increase the risk of harmful algae bloom formation. This project will contribute to ongoing research evaluating and quantifying biogeochemical transformations in agricultural adjacent lakeshore wetlands, Lake Lowell Idaho. Students will be involved in physical and chemical water and soil analysis. ***Position Location: College of Western Idaho*
Johnston, Nancy	LCSC	REU	najohnston@lcsc.edu	"Measuring Volatile Organic and Sulfurous Compounds in Air in North-Central Idaho" The research goal is to characterize and quantify levels of air pollutants (volatile organic compounds, hazardous air pollutants (HAP), and sulfur compounds) in ambient outdoor air in Lewis-Clark valley, and adjacent rural and urban areas, including the impact of regional wildfires on local air quality. ***Position Location: Lewis Clark State College (Lewiston, ID)*
Light, Jennifer	LCSC	REU	jlight@lcsc.edu	Snake River NRA Water Quality Baseline ***Position Location: Lewis Clark State College (Lewiston, ID)*
Perkins, Dusty	CWI	REU	dustyperkins@cwidaho.cc	Title: Monarch Butterfly Breeding Ecology and Habitat Suitability in Southwestern Idaho Our research evaluates factors that affect the habitat suitability of breeding monarch butterflies in, Southwestern Idaho. We use diverse field techniques and geospatial analyses to quantify and test the relative impacts of variables associated with habitat, land cover, and anthropogenic activity. Participants will develop vegetation and organismal identification skills and use field research techniques and GIS technology to study monarch breeding biology and migration. Resulting data will be used in habitat suitability models that will inform regional monarch conservation efforts and will contribute to regional ecosystem services modeling efforts. Regular travel to local field sites in Nampa and Boise will be required. ***Position Location: College of Western Idaho, Treasure Valley*