Faculty Mentor Name	Faculty Mentor Email	Mentor Institution	Project Title	Are you interested in having the SARE undergraduate work Part-Time or Full-Time?	Brief Description of Research Project.	Position Description	Will the SARE student be driving a vehicle?
Ernest Keeley	keelerne@isu.edu	Idaho State University	**Morphological and genetic studies of trout populations from western North America**	no preference	Our project is designed to examine morphological and genetic diversity of trout populations and other fish species from various locations in Idaho and surrounding areas.	The student will help faculty and graduate students collect samples from wild trout populations by traveling to field locations on daily or weekly field trips. Students should be able to camp at field locations while conducting the fieldwork, and be able to work outside during the summer.In the lab at ISU, students will assist in processing morphological samples using computer software and learn DNA extraction techniques for processing genetic samples. We are looking for an enthusiastic, highly motivated field assistant to learn new things and help with our research project on fish populations.	yes, possibly. Pickup truck.
Ken Aho	ahoken@isu.edu	Idaho State University	**Pollination Ecology of the Beartooth Plateau**	Full time	I am examining the pollination ecology of insects on the Beathtooth Plateau in Southern Montana. The project involves components of computational biology, ecosystem management, and environmental science.	The research described is the MS project for my student Troy Tetreault. I am looking for an undergraduate student to aid in all components of the research. The primary responsibilities for the student will be to aid Troy in field work. This will involve camping overnight at high altitude locations in the Central Rocky Mountains, and transporting sampling equipment within rugged environments.	No
Paul Hohenlohe	hohenlohe@uidaho.edu	University of Idaho	**Identifying hybrid individuals and assessing seasonal trait variation using physiological methods, spectroscopy and gas chromatography**	no preference	We will gather physiological data (i.e. photosynthesis rate, stomatal conductance) and chemical data (volatile organic compounds and plant defense metabolites) in sagebrush, collected at two time points at study sites around the Pacific Northwest.	Students will learn how to prepare plant material and develop protocols to analyse plant secondary compounds. A variety of methods will be used, and students will have the possibility to choose from a set of state of the art methods, such as spectrophotometry, physiological trait or gas chromatographic analyses. Assisting data collection in the field ispossible, depending on COVID-19 regulations, but not required. Students will be encouraged to present their results at the GEM3 annual meeting in December 2021.	no
Joshua Grinath	grinjosh@isu.edu	Idaho State University	**Post-burn establishment and growth of basin big sagebrush across ecological memories and seed mixes**	Full-Time	The student will join a collaborative research team studying a long-term experiment on the effects of past nitrogen pollution and shrub removal in sagebrush steppe, which recently burned in a wildfire that was fueled by invasive plants. Within these ‘ecological memories’, we are introducing four seed mixes designed to promote post-fire ecosystem recovery by providing biotic resistance against invasive plants, and the student will monitor the establishment and growth of seedling basin big sagebrush (Artemisia tridentata ssp. tridentata) across the experimental conditions.	The student will work with the project team to measure the percent cover of plants (including sagebrush) and soil properties in quadrats established across the experimental conditions. The student will work independently to count the number and height of sagebrush seedlings recruiting within these quadrats. They will also sample sagebrush seedlings from outside the quadrats to measure biomass and seedling traits. These data will allow the student to evaluate how different resource conditions and community compositions impact the recovery of sagebrush post-burn. The student will be expected to write a research proposal at the beginning of the summer and a report of their research by the end of the summer. They will present the results of their work at the Idaho NSF EPSCoR Annual Meeting. In addition, the student will receive training in the responsible conduct of research (CITI) and in statistical analysis by completing a series of tutorials and applying the methods to their own data.	They will either drive their own vehicle to the research site or ride in a vehicle driven by a member of the research team. The experimental site is located at ISU's Barton Rd Ecological Research Area, which is a 3.5 mile drive from my lab in the Department of Biological Sciences.
Leonora Bittleston	leonorabittleston@boisestate.edu	Boise State University	**Exploring the Sagebrush Microbiome**	Ideally, we would have 2-3 part-time students; full-time would also work	Microbes, despite their small sizes, can have large impacts on plants and animals. Sagebrush (Artemisia tridentata) is an important plant species in our local environment that supports wildlife and a healthy ecosystem, but nothing is currently known about the bacteria and fungi that live in sagebrush leaves. The leaf microbiome might affect leaf chemistry, leaf pathogens, and animals that eat the plant. In this project, we are characterizing the sagebrush leaf microbiome to understand how it varies from leaf to leaf, how it changes over time, and how it is related to leaf chemistry.	This project includes periodic field sampling, weekly lab work, and data analysis and management. The field component of our project involves hiking in the Boise foothills to our sampling site where we will collect leaves from sagebrush plants for lab analysis. The lab component of this project includes culturing of microbial communities, DNA extraction, and preserving microbial species of interest. The data component of this project includes collection of community statistics, data management, and potential for the student to learn some coding with R. This project provides an opportunity to learn a variety of useful sampling, lab, and data analysis techniques. The only requirements are an interest in microbes and a willingness to learn; however, some previous experience with molecular biology and/or microbial culturing would be helpful.	Probably not
Rebecca Hale	halereb3@isu.edu	Idaho State University	**Feeding the stream: linking variation in organic matter inputs to biological functions in intermittent streams**	Full time	How do changes in streamflow, including stream drying, affect the sources of organic matter to streams? How do the differences in organic matter sources and quality affect biological function?	Streams are heterotrophic ecosystems; this means that stream ecosystems rely on external inputs of organic matter to support their food webs, organic matter that is transported to streams by water. How does stream drying affect these relationships?The student will assist with ongoing field and laboratory research in the Gibson Jack watershed (~20 minutes from ISU). We aniticpate about 50% of the time will be spent in the field and 50% in the lab, with those proportions varying week to week. In the field, the student will learn how to operate and maintain high-frequency water quality sensors, collect water samples, and conduct a variety of stream measurements. In the lab, the student will learn how to conduct standard water processing (filtration, etc), and will have the opportunity to learn how to measure the optical properties of organic matter in the lab, as well as respiration of organic matter. If they chose, the student will have the opportunity to develop and lead their own research project.The student will join a growing team of ecosystem ecologists, hydrologists, and microbial ecologists to understand linkages between stream drying, organic matter transport, and ecosystem-scale respiration and productivity. Therefore, there will be many opportunities to learn about a wide variety of methods used by our team.	Driving will not be necessary, though the student may choose to develop additional field research that could require driving to field sites.
Lisette Waits	lwaits@uidaho.edu	University of Idaho	**Investigating the effect of plant genotypes on associated plant, microbe, and/or arthropod species**	no preference	Although big sagebrush is a foundation species, it has not been studied extensively in a landscape community genomics context. Associated microbial taxa, arthropods, and plant species will be compared to sagebrush genomic data to determine if sagebrush genetic variability is influencing community assembly to gain a better understanding of sagebrush ecosystem dynamics to guide restoration efforts.	Depending on resource availability and student interest, the student may be involved with:Microbial DNA extraction from soil or leavesMorphological identification of arthropods and plantsChemical and physical soil analyses In-field data collection (depending on COVID regulations)The student will learn how to follow and be responsible for adhering to lab protocols and will be encouraged to present their results at the GEM3 annual meeting in December 2021. Students who are interested in pursuing research in natural resources, conservation biology, genetics or ecology should apply.	no
Megan E. Cattau	megancattau@boisestate.edu	Boise State University	**Human development and wildfire in the Wildland-Urban Interface (WUI) in sagebrush systems**	No preference. We could accommodate anything from one student working part-time to several students working full-time.	Rapid human expansion into the fire-susceptible Wildland-Urban Interface (WUI) across the Intermountain West alters fire processes and increases human exposure to wildfire hazards. In sagebrush systems across the Snake River Plain in Southern Idaho, we will ask How does development in the WUI influence human exposure to wildfire?, and we will develop a remotely sensed product that allows us to capture development in the WUI and conduct spatio-temporally explicit analysis of that development with fire risk.	Students working with our team will digitize features of the built environment (i.e., human infrastructure) from images taken from sensors mounted on airplanes and satellites. Our team will provide students with one or all of the following training: 1) accessing remotely sensed images, 2) mapping and visualizing the images using geospatial software, 3) using computers to digitize features of the built environment, and 4) visualizing patterns from images. Depending on student interest, there may also be opportunities to validate those features in the field, analyze how human development interacts with fire risk, and/or communicate science to others via maps. Our expectation is that students are interested in understanding, monitoring, or managing the health of social-ecological systems and are willing to work independently (remote access to software and images) and in teams (weekly video conference calls and shared collaboration on documents). This position is ideal for anyone who would like to begin learning geospatial skills or improve on their existing geospatial skillset. Students working on this project will contribute to our exploration of how development patterns in the WUI affect human exposure and vulnerability to wildfire, ultimately building sustainable capacity in Idaho.	It would not be required. There is a component of the work in which a student could drive a vehicle (automatic transmission), but there are many other components with which to engage that would not require this.

Devaleena Pradhan	Devaleenapradhan@isu.edu	Idaho State University	**Integration of Stress Biology and Resource Competition in Trout**	Full Time	This position will involve participation in two research projects: one project will involve assisting a graduate student with a large study using field and laboratory approaches which investigates immune response to stress in adult trout. The second project will allow an undergraduate to work independently compete a lab based experiment on hormonal response to resource competition in fingerling trout.	Assist graduate researcher in field sampling in the late spring and summer in Southwest Idaho streams to assess reproductive behaviors and physiology of redband trout.Assist with laboratory processing and analysis of plasma samples taken from the field.Learn bench techniques necessary for processing plasma and tissue samples and quantifying hormone concentrations.Assist with coordinating and executing immune system analysis via lysozyme activity analysis and IgM content.Assist with GT-seq analysis of fin clips at the Hagerman Research Hatchery.Data entry and management into spreadsheet software.Analyzing and quantifying body condition of photos taken from sampled fish in 2020.Learning and performing statistical analyses to assess covariation of certain variables with hormonal data (think time of day/body condition and size etc).Write a report of the methodology used and results obtained from the trout resource competition study.	yes, a truck.
Sarah Ebel	sarahebel@isu.edu	Idaho State University	**Examining Idaho's cultural connections to redband trout and salmon**	No preference	This research project will examine the cultural connections humans have to redband trout and salmon in Idaho and explore the implications environmental change will have on those connections. We have not yet studied how humans interact with Redband trout, a focal species of GEM3, yet it is known that this species, along with salmon, are culturally valuable to the tribal nations in Idaho and also play a role in Idaho's recreation economy.	This student will be expected to participate in conducting a literature review, constructing a semi-structured interview/survey (data collection tools), and conducting interviews (virtually, and if possible, in person). The student should be interested in learning how to design and conduct social science research related to human-environment relationships. The student should also be able to work independently as well as in part of a group.Ideally the student will have a background in one of the social sciences or ecology. This opportunity will provide the student will skills necessary to pursue research after they graduate (if they are interested). If the student is interested in governmental or non-profit work, this research will provide them with the knowledge of natural resource management, systems-thinking and give them the opportunity to work with local stakeholders.	Occasionally a rental vehicle (a sedan).
Sarah Ebel	sarahebel@isu.edu	Idaho State University	**Barriers and opportunities for adaptation to socio-ecological change: Mapping exclusion and environmental privilege in Teton Valley, Idaho**	Full-Time	This research examines how sociopolitical and cultural factors, specifically human-environment interactions and forms of exclusion, affect how people are impacted by, and adapt to, socio-ecological change in Teton Valley, Idaho. With a focus on the historically marginalized Latinx immigrant community, our objective is to examine how adaptation pathways are affected by racial exclusion and the reproduction of environmental privilege by integrating geospatial data, participatory mapping and ethnography to map relative exclusion of the Latinx community from decision-making and public spaces in Teton Valley.	This student will be working with myself and a graduate student to: (1) create a semi-structured interview, (2) conduct interviews and participatory mapping with members of the Latinx community and community leaders in Teton Valley, and (3) transcribe and analyze interviews. The student will also receive training in GIS. The student will also be working with the Community Resource Center of Teton Valley as our community partner.The interested student should be proficient in both Spanish and English, able to work independently and as part of a group, and interested in human-environment relationships, race/ethnicity, and adaptation to environmental change. Ideally the student will have a background in one of the social sciences or ecology (with a human dimensions focus). This is a great opportunity to gain skills in social science research, GIS, and connect to community non-profits and community leaders in Teton Valley.	Occasionally a sedan
Brian Simper	tfcpad@qwestoffice.net	Twin Falls County Pest Abatement District	**Using innovation and technology to combat West Nile Virus.**	Prefer 40 hours per week, but willing to work with a part-time intern.	The mission of the Twin Falls County Pest Abatement District is to protect the health and socio-economic well-being of the citizens of Twin Falls County from harmful vectors and pests, employing environmentally sound abatement practices. These practices include biological larvicides that specifically target mosquito and black fly larvae, public education and inter-agency coordination on eliminating mosquito habitat, and using natural predators such as bluegill fish to reduce mosquito populations, among other sustainable practices.	The SARE researcher will research general mosquito control methods and create models to assess their effectiveness. Creating these models for pest abatement requires a consideration of many fields of study that include Insect & Fish Biology, GIS/Mapping, UAS Technology, Hydrology, Environmental Science, Ecosystem Management, and Lab Work. In the course of their research, students will do field scouting, learn various methods of treatment for mosquitoes, identify different mosquito species, and test specific species for West Nile Virus in a lab. In addition to this, SARE researchers will also have the opportunity to customize the project to emphasize the fields of study relevant to the GEM3 goals that interest them most. Desired skills/knowledge include willingness to work outdoors in any weather, and the ability to compile and analyze data.Location is 507 Grandview Dr. S, Twin Falls, ID 83301, near the College of Southern Idaho. Please see https://www.tfcpad.org/jobs for more information.	Yes, automatic transmission pickups, and possibly four-wheeler (ATV), watercraft, and unmanned aerial system. Training for all vehicle operations will be provided.
John Dudgeon	dudgeon@isu.edu	Idaho State University	**Prehistoric Interface of Humans and Water in Idaho: Archaeological evidence of the culture-water nexus and their implications for adaptation to present and future water ecologies in the Snake River Plain**	The scope of the project will strongly benefit from full-time work during the summer recess.	Archaeological evidence suggests water fundamentally structures human life and ecological adaptation in the Snake River Plain (SRP) and its environs, and that prehistoric peoples used sophisticated locating strategies to discover and use surface and spring waters. Our project seeks to identify the human use of water in the SRP through time by GIS mapping temporally-sensitive stone artifacts procured from known source locations over the modern and historic/prehistoric hydrologies of the SRP as proxy data for human water discovery and adaptation strategies. We intend to cover the entire history of human habitation of the Snake River Plain, from c. 10,000 years ago up to the present.	The position description(s) involve provenancing archaeological obsidian artifacts (arrowheads, or projectile points) in various local, museum and private collections which were recovered in proximity to existing or extinct (post-Pleistocene lakes) water sources in and around the Snake River Plain (SRP). These artifacts will be mapped over a GIS of SRP hydrology, including the Snake River and its tributaries, existing and extinct fluvial catchments (lakes) and cold and hot springs (artesian and geothermal water). Artifacts from known sources and time periods will be used to identify the timing of discovery of these water features and the intensity of use through time. All artifacts will come from pre-existing collections and non-destructive means of analysis (portable x-ray fluorescence, pXRF and typological dating) will be used to identify both the source or quarry of collection and the temporal position (artifact relative age) of all artifacts. Mapping of artifacts to hydrologies will be performed using ArcGIS (ESRI, Inc., Idaho State University site license). All other materials, instruments, methods and protocols are pre-existing in the CAMAS laboratory.	There is limited driving of a passenger vehicle (sedan) required for the research project.
Christopher Caudill	caudill@uidaho.edu	University of Idaho	**Mapping stream invertebrate prey of redband trout in the drift**	Full time preferred.	Trout are drift-feeding fishes, capturing prey out of the water column for the majority of their diet. However, drift is notoriously variable in space and time. The project aims to clarify how prey availability differs within a stream in relation to hydraulic and habitat factors. The project will test a key assumption of drift-foraging models, which are increasingly used to evaluate stream habitat condition.	The student will assist with field work collecting invertebrate drift samples across hydraulic and habitat gradients from N. Idaho streams and will process drift samples in the laboratory. Field work will occur over 2-3 weeks and will involve camping and wading in high elevation streams. Approximately 6-8 weeks of laboratory work will include extensive ‘bug-picking’ of samples to count, identify and size stream invertebrates. The student will gain experience in field collection, measuring stream habitat and hydraulic features, and the identification of stream invertebrates. The student will need to be comfortable with camping at field sites, wading and conducting sampling at night, and working with electronic equipment in the field. Ideally, the student will lead analysis and presentation of the results.	Yes, possibly
Carolina Viera	carolinaviera@boisestate.edu	Boise State University	**Project SCIENTIA: Increasing diversity in STEM through mentoring, research opportunities, and science dissemination Spanish.**	2-4 Part-time students	Project SCIENTIA is an interdisciplinary initiative that aims to reduce the existing linguistic barriers and to increase access to science by exploring creative ways of scientific research dissemination in Spanish. This project will promote a multilingual landscape of scholarship, create linguistic-affective ties with science and bolster community outreach.	Produce communication material from GEM3 research: We will collaborate with genomics, remote sensing, social science, and modeling researchers in the GEM3 project who are interested in translating their work. Students will use active listening skills and interviews with researchers to get a deep understanding of the paper's content. When the research is understood, students will co-create audio-visual dissemination materials in Spanish tailored to the specific population that the researcher aims to target. Dissemination of the communication material from GEM3 research: Students will create and use social media platforms such as Instagram, Twitter, Facebook, and the GEM3 website to reach out to the intended Spanish-speaking population. Students will contact bilingual Spanish and English institutions' to establish a base of interested community partners. These contacts will create links between students and potential future employers. There will be an emphasis on community outreach and engagement of diverse populations in scientific research and multiculturalism. Students will receive training on community outreach protocols and professional etiquette. Public speaking, translation, professional writing, social media strategies, and practices: Students will gain hands-on learning experiences where communication and translation theoretical knowledge can be applied to the task of science dissemination to the general Spanish-speaking public.	no

Jodi Brandt	jodibrandt@boisestate.edu	Boise State University	**Mapping water resources**	No preference	Boise State University researchers in the Human Environment Systems group are seeking a motivated student to assist us in mapping water resources in the High Divide region of Idaho and Montana during the summer of 2021. This work directly contributes to a research project that seeks to quantify links between land use, management, and conservation initiatives on water resources in the West.	The student will learn the basics of remote sensing image classification and validation, work directly with geospatial datasets and GIS, and gain exposure to various geospatial tools and methods common to the field. The applicant should have introductory knowledge of geographic information systems (GIS) software, data types, and operations.	The majority of the tasks can be completed remotely, and there is the option for some travel to Boise State and/or field locations that will be financially supported by the project. The student can use a CSI vehicle for travel, thus travel does require a valid driver’s
Kathleen Lohse	klohse@isu.edu	Idaho State University	**Lignin, C, nitrogen determination on sagebrush and other dominant vegetation types as a basis for calibration of near-infrared reflectance spectroscopy techniques and modeling at Reynolds Creek Experimental Watershed and Critical Zone Observatory**	full time	We propose to partner with the USDA ARS at Reynolds Creek Experimental Watershed and Critical Zone Observatory (RCEW-CZO) to train an undergraduate to determine lignin, carbon, and nitrogen content on foliar tissue from tagged sagebrush plants along an elevation gradient (climate gradient). These plants already have a history of allometric measures and structure for motion (SfM) imagery that can be used as a basis for calibration of near-infrared reflectance spectroscopy (remote sensing) techniques for mapping and modeling as part of GEM3. Working with Derek Pierson (post-doc at ISU), we will also work to identify, collect and analyze other dominant vegetation foliar samples for lignin, carbon and nitrogen contents throughout the watershed. The student will be trained in these laboratory techniques, learn how to collect data and visit RCEW-CZO in the field (COVID permitting), and relate these measures to size, structure and production (time permitting).	A student will be trained in basic laboratory techniques (safety, chemical inventories, protocols) and work on preparation and analysis of foliar litter for determination of lignin, carbon, nitrogen content. The student will be trained in vegetation collection and assist in this collection for 1-2 weeks (COVID permitting). Desired skills include knowledge of plant taxonomy, introduction to chemistry, ecology, and remote sensing. Student needs to have a driver's license and be able to work several long days in the field and camp in the field or campground given current COVID restrictions on access to ARS facilities.	yes, student will be driving a mini-van to Reynolds Creek or a truck depending on COVID restrictions.
Brian Small	bcsmall@uidaho.edu	University of Idaho Aquaculture Research Institute	**Quantifying variation in redband trout physiology and behavior using a common garden**	Full-Time = 40 hours/week	Redband trout inhabit streams in Idaho varying from very cold northern Idaho streams to dessert streams in the southern part of the state where trout have adapted to warm temperatures. The project seeks to quantify how genetic difference and acclimation history affect the physiology, behavior, and fitness of trout from these populations.	The student will assist graduate students and post-doctoral researchers performing physiological and behavioral assays of trout reared in a common garden experiment in Hagerman, Idaho. Physiological assays include testing swimming performance using a swim tunnel, cardiac performance trials in relation to temperature and dissolved oxygen, and behavioral assays will identify thermal preference and movement response assays in the laboratory. The student may assist with collection of trout from field populations depending on need for collections from the field.	No
Trevor Caughlin	trevorcaughlin@boisestate.edu	Boise State University	**Mapping sagebrush with drone imagery**	Full-time	This SARE position will assist the GEM3 remote sensing team with drone image processing, including learning software tools such as Agisoft Metashape to process Red-Green-Blue and multispectral imagery into analysis-ready products like orthomosaics, digital surface models, and point clouds. Students will learn cutting-edge techniques for analyzing drone imagery with application to conserving and restoring sagebrush ecosystems.	After any necessary training, we expect this student to work semi-independently, remote or in person, to process drone imagery. We expect all processing to occur in Agisoft Metashape Professional. This student will ideally run the image processing software as we collect flights throughout the summer to avoid a back-log of data. This position may also require re-processing of older imagery as we learn improved processing parameters. The student will check-in weekly to report on processing and discuss any questions or trouble-shooting with the software or data. In addition to processing drone imagery, we expect that this student will help our team evaluate the image products and iterate and test processing parameters as needed. We would like someone who is methodical, takes careful notes, and can communicate any needs or questions to the team. The student is not required to have any experience with Agisoft, but previous experience or knowledge is desirable.	No
Kathryn Turner	turnkat2@isu.edu	Idaho State University	**Sagebrush vs. Cheatgrass: Competition for the American West**	no preference	We investigate how genetic and phenotypic diversity may determine who wins in the struggle between iconic native species, Big Sagebrush and problematic invasive species, Cheatgrass.	Big sagebrush (Artemisia tridentata) is an iconic foundational species of the vast American sagebrush steppe, and plays a large role in structuring the community of other plants and animals. It can support the growth of other plants, and provides food for threatened species (sage-grouse and pygmy rabbit), economically important big game species, and domesticated species. The sagebrush steppe ecosystem is currently under threat; it has been declining and is becoming increasingly fragmented,partially due to human land use and increasing frequency of fire. Meanwhile, the American West is also experiencing the impact of several widespread invasive plant species. Cheatgrass is one of the most pervasive. Cheatgrass contributes to wildfires that destroy established stands of mature sagebrush and can also take advantage of wildfires to spread into and dominate new habitat. Though increasing effort is devoted to preventing the decline of sagebrush populations, these restoration efforts have mixed and often disappointing results.The SARE student will work with Dr. Turner (kathryngturner.com) and graduate student Carson Kantack to investigate how different populations of native species, basin big sagebrush (Artemisia tridentata ssp. tridentata), compete with invasive cheatgrass during the earliest and most challenging part of their lives (as a seedlings). This will involve work with a large common garden experiment in the ISU greenhouses, located on campus. The student will help with experimental setup, maintenance, and data collection over the course of the summer. We will work together with the student to develop a small add-on experiment that the student will design and lead, related to sagebrush seedling phenotypic diversity across environmental variation or sagebrush-cheatgrass interactions. If full-time, the student will also assist with field work at several field sites in the Pocatello area, as part of a national cheatgrass experimental network. Ideally, both the greenhouse and field work will culminate in the student contributing as a co-author on at least one peer-reviewed publication, an excellent addition to help build a research resume/CV. The student will also participate in additional professional development activities and scientific community building efforts involving other undergraduate students engaged in summer research as part of the Department of Biological Sciences at Idaho State University. The student should be able to work outside and hike short distances up steep terain to participate in the field work aspect. Attention to detail, willingness to ask questions, get your hands dirty, and occasionally 'nerd out' strongly desired.	Not regularly. When necessary, personal vehicle (mileage covered by Turner lab) to field sites in the Pocatello region.
Miranda Striluk	mirandastriluk@cwi.edu	College of Western Idaho	**Exploring the Sagebrush Microbiom**	Part-Time	Microbes, despite their small sizes, can have large impacts on plants and animals. Sagebrush (Artemisia tridentata) is an important plant species in our local environment that supports wildlife and a healthy ecosystem, but nothing is currently known about the bacteria and fungi that live in sagebrush leaves. The leaf microbiome might affect leaf chemistry, leaf pathogens, and animals that eat the plant. In this project, we are characterizing the sagebrush leaf microbiome to understand how it varies from leaf to leaf, how it changes over time, and how it is related to leaf chemistry.	Mentoring students through periodic field sampling, weekly lab work, and data analysis and management.	Probably not.
Sven Buerki	svenbuerki@boisestate.edu	Boise State University	**Conducting GxE experiments to identify genes underpinning drought and heat adaptations in sagebrush**	Part-Time.	The SARE fellow will be participating in designing and conducting genotype-by-environment (GxE) experiments on sagebrush individual lines (representing different genotypes) to identify genes underpinning drought and heat adaptation. The SARE fellow will be assisting our team in this endeavor and be exposed to lab and greenhouse technics.	The SARE fellow will be learning technics to ex plant sagebrush individual lines and acclimatize them for GxE experiments. The SARE fellow will also be involved in conducting heat, drought and heat+drought experiments and record response variable as well as conduct RNA and/or DNA extractions.	No.

Rebecca Flock	rebeccaflock@cwi.edu	College of Western Idaho	**"Feeding the stream: linking variation in organic matter inputs to biological functions in intermittent streams"** **Re: Post by Dr. Hale at ISU**	Full time	Coordinated with Dr. Hales project: How do changes in streamflow, including stream drying, affect the sources of organic matter to streams? How do the differences in organic matter sources and quality affect biological function?	From Dr. Hale's post: Streams are heterotrophic ecosystems; this means that stream ecosystems rely on external inputs of organic matter to support their food webs, organic matter that is transported to streams by water. How does stream drying affect these relationships?The student will assist with ongoing field and laboratory research in the Gibson Jack watershed (~20 minutes from ISU). We anticpate about 50% of the time will be spent in the field and 50% in the lab, with those proportions varying week to week. In the field, the student will learn how to operate and maintain high-frequency water quality sensors, collect water samples, and conduct a variety of stream measurements. In the lab, the student will learn how to conduct standard water processing (filtration, etc), and will have the opportunity to learn how to measure the optical properties of organic matter in the lab, as well as respiration of organic matter. If they chose, the student will have the opportunity to develop and lead their own research project.The student will join a growing team of ecosystem ecologists, hydrologists, and microbial ecologists to understand linkages between stream drying, organic matter transport, and ecosystem-scale respiration and productivity. Therefore, there will be many opportunities to learn about a wide variety of methods used by our team.	From Dr. Hale's post: Driving will not be necessary, though the student may choose to develop additional field research that could require driving to field sites.
*** 2-yr and 4-yr college faculty wanting to serve as a research co-mentor with university faculty must coodinate with university faculty prior to submitting an application**							