

The University of Montana Western 11th Annual Research Symposium



**April 28th and 29th, 2017
Charles G. Swysgood Technology Center
Great Room**

**Sponsored by
The Montana Western Biology Club
and
The Associated Students of the University of Montana Western
(ASUMW)**

The University of Montana Western 11th Annual Research Symposium

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Schedule of Events

Friday, April 28th

3:15-4:00 pm..... Symposium Preparation and Poster Setup

4:00-6:00 pm..... Oral Presentation Session

4:00 - **Michael Baumberger** (Page 22)

My Internship as a Beaverhead county BLM Volunteer

4:15 – **Neya Bischoff** (Page 24)

Significance of Minority Groups in the United States Military

4:30 – **Alexis Brunz** (Page 26)

My internship understanding shark ecology

4:45 – **Nicole M. Garren** (Page 28)

5:00 – **Delanie Greer** (Page 30)

5:15 – **Chase James** (Page 32)

The Night of the Long Knives

5:30 – **Lauren LaRonde** (Page 33)

Prohibition: How Butte Defied Federal Law

5:45 - **Charlie Switzer** (Page 39)

Internship as Fisheries Technician

6:00-7:00 pm.....Poster Session (pages 5-21) and *Hors D'oeuvres*

7:15-8:15 pm.....Keynote Lecture

Zika Virus: Immune responses and virus transmission

Dr. Karin Peterson

Rocky Mountain Laboratories, Hamilton, MT

NIH, National Institute of Allergy and Infectious Disease

8:15 pm.....Reception

Saturday, April 29th

Breakfast is provided

9:30 – 11:00 am.....Oral Presentation Session

- 9:30 – Niquelle Baxter** (Page 23)
My internships as a Creel Sampler and a State Police Intern
- 9:45 – Dominique Vivian Blain** (Page 25)
Connection Through Wilderness
- 10:00 – Morgan Evans** (Page 27)
My Internship at Barrett Hospital
- 10:15 – Skyler Goyen** (Page 29)
Harnessing Love
- 10:30 – Justice Harris** (Page 31)
Exploring the Laboratory and the Medical Field
- 10:45 – Rian MacMillan** (Page 34)
Westslope Cutthroat Restoration Internship

11:00-12:30 pm..... Poster Session and Provided Lunch (page 4-27)

12:30 – 2:00 pm.....Oral Presentation Session

- 12:30 – Ryan McCarty** (Page 35)
African American Opposition to the Black Panther Party
- 12:45 – Michael Melin** (Page 36)
Montana Fish Wildlife Parks Student Internship
Fishing Access Site (FAS) Recreation Survey 2016
- 1:00 - Stacia Salmonsén** (Page 37)
Prostitution in Victorian Britain: How Elizabeth's Gaskell's Ruth
Personifies the ideals of Victorian Morals and Creation of Gender.
- 1:15 –Tyrel Smith** (Page 38)
Comparative Analysis: Who Exactly Voted for the Nazis?
- 1:30 - Jessica Weimer** (Page 40)
Adolf Hitler: A Man of Circumstance?
- 1:45 – Jordan Willis** (Page 41)
My Internship Experience

Dr. Karin Peterson

Karin Peterson received her Ph.D. degree in microbiology and immunology in 1998 from the University of Missouri Medical School, where she studied autoimmunity and the activation of self-reactive T cells.

She then went to Rocky Mountain Laboratories (RML) in 1998 as a postdoctoral fellow in the Laboratory of Persistent Viral Diseases and applied her skills in immunology toward understanding the mechanisms that control the immune response to virus infection.

During this time, she became interested in the immune responses to virus infections in the central nervous system (CNS). In 2004, Dr. Peterson accepted a position as an assistant professor at Louisiana State University, where she furthered her studies on viral pathogenesis in the CNS and taught classes in immunology and virology.

In 2008, she returned to RML as a tenure-track investigator to study early immune responses in the CNS and their role in viral pathogenesis. She was tenured in 2016 and became a senior investigator and chief of the Neuroimmunology Section at RML. Viruses studied in her laboratory include La Crosse Virus, the leading cause of pediatric arboviral encephalitis in the United States and Zika virus, an emerging encephalitic arbovirus in the Americas that causes microcephaly in the developing fetal brain.

A major goal of her program is to determine the primary mechanisms by which viruses gain access and induce damage in the brain so that rationally designed therapeutics may be developed to intervene in the disease process.

Dr. Peterson was awarded the NIAID Richard Asofsky EEO Special Achievement Award for Biomedical Research After School Scholars (BRASS) Program in 2002.

Poster Abstracts

Internship as an Environmental Technician

Cole Arnett

University of Montana Western
Environmental Sciences Department

During the summer of 2016, I worked as an environmental technician for Coeur Rochester Incorporated for an internship in my B.S. Environmental Science degree with an emphasis in geology. The internship addressed my passion for resources management. Coeur Rochester Inc. is a company that deals with high income precious metals such as gold and silver and harmful by-products such as mercury, lead, and arsenic that are in need of regulatory compliance.

Environmental technician's field based work entailed daily depth to water checks of local wells along with water flow from these wells checked through piezometer readings. Other training included the proper storage and disposal of harmful by-products through the proper chain of custody to a third-party representative.

Coeur Rochester mining is based approximately 24 miles to the northwest of Lovelock, Nevada. The Coeur Rochester mine is an open pit heap leach gold and silver operation. This operation includes not just the extraction phase but all the way to the final product. The operation goes through the extraction, refining and hot metals pouring stage. However, after these stages are complete, there is unfortunate by-products that need to be properly disposed of, which is why environmental experts are needed for the mining industry.

This internship also helped give me the tools to further understand the environmental sciences field for further professional career options in the future.

Clearwater DNRC Fire Crew Internship

Noah Criner

During the summer of 2016 I was a part of the Department of Natural Resources & Conservation Clearwater Unit wildland fire engine crew. During my time with the DNRC my main job was as a firefighter. However, firefighting was not the only responsibility in which I was entrusted with. I was able to participate within a wide range of different aspects of forestry and fire rehab. The foresters on our unit mentored me as I shadowed them during fire rehab and many different aspects of forestry from road construction to timber sale administration. During my time with the DNRC I was able to use my understanding of natural processes which I gained through my classes at the University of Montana Western. The foresters whom mentored me helped me to apply my knowledge of the natural world into the world of forestry and fire rehab.

My internship as a Forestry Technician

Trenton R Duty

University of Montana Western
Environmental Sciences

For my internship, I worked as a forestry technician for Spotted Bear Ranger District of the USDA Forest Service. My internship was for my major of B.S. Environmental Science, with a minor of sustainable natural resource management. The work I was doing this summer fed my passion of the wilderness and contributed to my knowledge of the environment. This last summer's internship helped guide me to pursue a more permanent career in sustainable natural resource management with the USDA.

The Spotted Bear Ranger District is a very unique district. It encompasses the western half of the Bob Marshall wilderness complex. This area was designated as a wilderness complex in 1964 by the United States Congress. Another distinctive part of the Spotted Bear Ranger District is its extensive use of traditional tools. Due its' vast expanse, the Spotted Bear Ranger District bases crews in two outlying ranger stations.

Last summer I worked out of the Big Prairie Ranger Station which is an outlying station of Spotted Bear. My internship's primary goal was to clear the backcountry trails of fallen trees, rocks and other obstacles to create a safer route for public access. Another important part of my internship was to communicate with the public. Which could vary from informing them of good camp sites to potential hazards they might encounter on the trail. In many cases I educated the public of what my job entails and what I do in the backcountry.

The mission of the Forest Service is "To sustain the health, diversity, and productivity of the Nation's forests and grasslands to meet the needs of present and future generations." Its motto is "Caring for the land and serving people." (Service, n.d.)

Over the entire three-month internship, I learned many numerous skills both social and environmental. The knowledge I learned in class as well as during the internship I was able to accomplish the goals of the agencies mission.

My Internship with a Surveying and Engineering Company

Brittany Erickson

University of Montana Western
Environmental Science

Of the winter of 2015, I interned at DJ and A, PC. They are a survey and engineering company located in Missoula, MT. I interned with one of the supervisors, who is a hydrologist and worked with streamflow data. Taking previous data that the surveyors have collected from South Fork Sherman Creek located in WA, I transferred that data over to Hec-Ras. Hec-Ras gives you a visual idea of what the stream flow looks like as if you were looking down the stream channel of that cross section. Auto-CAD is a layout that is made up of multiple layers. By clicking the polylines, the x, y, and z coordinates were represented which resulted as the discharge. That data was then transferred over to Hec-Ras to represent the discharge through that cross-section. Working with another colleague, we tried to come up with other ideas to measure and collect stream flow data of the stream water were to be too shallow or low to measure. The focus for collecting streamflow data is to keep track of discharge into the watershed and if the culverts that the stream flows through have an effect on how much discharge is flowing through the stream.

Shadowing Internship at Barrett Hospital

Michael Field

The University of Montana Western
Biology Department

During the fall semester of 2017, I interned at Barrett Hospital in Dillon, Montana as a student intern. I shadowed a wide variety of medical professionals including doctors, nurses, and several different kinds of medical technicians. I shadowed people in several different departments including the emergency room, pathology laboratory, imaging, and the nurse's station. This internship was helpful for me in seeing if I would like to pursue a career as a medical professional.

My daily routine included following a designated medical professional, observing his/her routine, and what that person did each day. I also kept a journal of my observations. I was allowed to observe patient care when patients agreed to my presence. During these interactions, I observed that different care providers used different questioning methods and different diagnostic routines to assess their patient.

Interning at Barrett Hospital was an exciting experience. The best part of my internship was being able to shadow different professionals in different departments and to get to meet a great variety of medical professionals and being able to ask them questions. Some of the more thrilling things I was able to see during my internship included a lung biopsy, x-rays, and a cardiac stress test. To Respect patient confidentiality and in accordance with HIPPA guidelines, the age, gender, names, and dates of my observation of patients have been omitted.

Facilitation by alpine cushion plants provides food islands for golden-mantled ground squirrels

Theresa Galhouse and Wendy Ridenour

The University of Montana-Western
Environmental Science Dept.

The stress gradient hypothesis posits that positive interactions such as facilitation are more prevalent in abiotically stressful environments such as alpine tundra. Previous research has demonstrated that alpine cushion plants facilitate other plants in the alpine tundra, significantly increasing plant community diversity. In this context, we explored alpine cushion plants as food islands facilitating multiple trophic levels, specifically *Callospermophilus lateralis*, golden-mantled ground squirrels. A high elevation species that appears to be expanding its range upward in elevation in the face of climate change, *C. lateralis* is a generalist herbivore that can be found in western North America scattered throughout montane areas. Study sites were located in the alpine tundra above Tendoy Lake in the Pioneer Mountains and near Scenic Point in Glacier National Park. We found that at both sites, the alpine cushion plant *Dasiphora fruticosa* is a foundation species that acts as a buffer from stressful abiotic conditions for most other locally occurring plant species ($p = 0.0001$, Tendoy Lake; $p = 0.02$ Scenic point). Additionally, *C. lateralis* spent 3 times more time foraging within *D. fruticosa* cushions than outside of cushions in these alpine tundra communities ($p = 0.04$ both sites). If *C. lateralis* is responding to climatic changes by contracting its lower elevational range and expanding its upper range into higher elevation alpine tundra communities, then the *D. fruticosa* cushions may be critical in facilitating not only beneficiary plant species but also survival for alpine populations of *C. lateralis* that otherwise would not have been able to expand their range in response to climatic changes. This is the first study of its kind and provides the first evidence that alpine cushion plants facilitate survival for mammal populations. This work is supported by Montana Institute on Ecosystems and Montana NSF EPSCoR Program and the National Science Foundation under award number IAA-1443108.

Connor Greth

The goal of the Camp Galilee experience is to encourage individual growth within an accepting spiritual community. Staff members must be a responsible guardian of his or her campers' physical, emotional, and spiritual health and safety. Staff members are required to have certifications and/or training in the following: CPR/AED, first aid, lifeguard, and protecting children. Staff members are also responsible for knowing the camp emergency action plans, how to properly report child abuse, how to deal with homesickness, and general safety of campers. The staff members at camp Galilee are in charge of a new adventure group each week of the summer camp season (June-August). Adventure groups consist of a staff member, two councilors, and 9 to 13 summer campers. The staff designs a program age appropriate for each week. Some activities for adventure groups include: kayaking, rock climbing, archery, nature walks, overnight hikes, ropes course, and various other team building activities. The games played at camp galilee do not result in a winning team and a losing team. Activities in which the adventure group must work together in order to accomplish a goal are a useful tool for group development and the individual's feeling of belonging. Summer campers come from a large variety of backgrounds. Each camper has the opportunity to unload the stresses of their everyday lives. When they arrive at camp they have a safe place to be themselves. The friendships and experiences that take place at Camp Galilee last a lifetime.

My Internship as a Forest Technician

Chris Hall

University of Montana Western
Environmental Science

During the summer of 2016, I worked as a forest technician with the USDA Forest Service, as my internship for the B.S. of Environmental Science degree, with emphasis in Sustainable Natural Resource Management and Geology. This internship opportunity allowed me to apply my passion for conservation, habitat, and resource management to the real-world problem of Sage Grouse habitat reduction. My experience with the internship helped to increase my passion for the management and preservation of our natural resources for future the current generation and for future generations to come.

As of 2015 Sage Grouse have been identified by the USFWS as a species that has an abundant and well-distributed population across a 173-million-acre range. Even though this is true there are still concerns with habitat reduction. To address concerns a Watershed assessment was performed by the BLM in a portion of SW Montana. Based on the data gathered a decision was made to take action against the encroachment of the Douglas fir, *Pseudotsuga menziesii*. The action that was taken to reduce encroachment is to; thin the trees that have encroached into sage grouse habitat in the summer and fall, then to burn the cut areas in the spring.

My part in this was the thinning process by the use of a chainsaw. Before I could participate I had pass a general chain saw operation course. Upon completion of this course I took another test by falling trees and acquiring a falling certificate. Protocol for thinning procedures was learned in the field with a supervisor. The crew that I was part of would go and thin the timber, weather permitting, five days per week for the duration of the summer. The area that was slashed was part of an approximately 50,000-acre piece of BLM land.

For me the most rewarding part was being able to work outdoors in something I am passionate about. Training and having a very knowledgeable group of people to work with gave me the tools I needed to perform a job at a professional level.

The Ways in Which Individuals Behave in a Group

Callie Hanson

University of Montana Western

Introduction to Psychology

My senior project was to be a teachers aid for an introductory psychology class, mostly freshman. So, two days a week for two hours a day I was in an office where students could either schedule a time to meet or just drop by to discuss material that was covered in class, get help on ways to study and prepare for tests, and review their work for the course. Several students did utilize this resource they had and it turns out that the five people who showed up to my office hours were the ones who received the highest grades at the end of the block. Part of my project also included teaching a lesson about just one portion of introductory psychology which was a branch of psychology known as social psychology, the scientific study of the way in which people's thoughts, feelings and behaviors are influenced by the real or imagined presence of other people. For my project the students were supposed to attend the University of Montana Western volleyball match and take notes on some of the topics we had discussed over the first few days of my social psychology lessons. Overall, this experience was very beneficial for me in the sense that I was able to help and pass down my knowledge to other students and I was also able to prepare and teach a lesson that I personally wrote. I am very proud of all that I accomplished over the course of that block.

Investigating gene expression related to the two-component SaeR/S regulatory system of *Staphylococcus aureus*

Sierra Higheagle

University of Montana Western- Dept. of Biology

Montana State University- Bozeman, Dept. of Microbiology and Immunology

The *Staphylococcus aureus* (*S. aureus*) exoprotein secretion system (SaeR/S) is a two-component protein system within *Staphylococcus aureus* that has been linked to this pathogen's ability to survive within human neutrophils (polymorphonuclear leukocytes or PMNs). Prior studies have shown that an extracellular (EC) loop, consisting of nine amino acid residues on SaeS, is vital for *S. aureus* to sense and respond to extracellular stimuli—specifically components of human PMNs. Additionally, γ -hemolysin (*hlgA*) is a predominant virulence factor that targets immune and red blood cells. This toxin has been shown to be regulated by SaeR/S. New *hlgA*-GFP *S. aureus* cell strains—including point mutations of the residues on the EC loop—have been developed in order to study the role of each residue in *S. aureus* survival. All strains contained a plasmid on which the *hlgA* gene was linked with the GFP reporter. The current study sought to both characterize the activity of these strains in the presence of human PMNs as well as determine if *hlgA*-GFP fluorescence was a legitimate proxy for measuring *hlgA* expression.

Keyboard Courage: Lying in Online Dating Profiles

Seth Hogan

University of Montana Western

HPSS

Psychology of Romantic Love PSYX 494

Lying is a terrible reality that we all must contend with, at one time or another, when looking for a significant other. Online dating presents an interesting opportunity for daters to present themselves in whatever way they choose to be perceived by a potential partner. What this literature review looks to do is compile a wealth of knowledge about deceptive presentations of self in online dating profiles of free online dating sites, and assess the trends in the data that has been done in this area. Discussing differences in strategy, execution, and how men and women lie about subjects in different ways. All of the participants in the studies compiled are users of free dating sites, not paid. This distinction is important to understanding that sites such as eHarmony use the Big 5 personality inventory test and “match” daters without the participants searching through multitudes of profiles. These sites have some safe guards against deceptive presentations on their web profiles. However, free sites allow users to build and search profiles at will, opening the door for presenting whatever “self” you want.

Natural Resource Conservation Service

Nathan Matteson

Environmental Sciences Department

Natural Resource Conservation Service (NRCS) is a Government agency under the U.S. Department of Agriculture (USDA) that aims to help landowners financially and technically apply conservation practices to the ground. NRCS was created in 1935 around the time of the dust bowl to assist in the resource concerns the United States was experiencing in this period. As many Americans were going through financial hardships, the program also provided financial assistance to help implement these conservation practices. Many of the same general programs are in effect today, but slightly modified to fit the needs of present day concerns.

My role with NRCS was a soil conservationist in Dillon Montana, Beaverhead county. With the majority of private land being utilized for agriculture, it is the primary focus of the office. Duties of this position included technical assistance for many aspects of agriculture, mapping of soils, Natural resource inventories, range inventories, and riparian assessments. The future of this agency is very bright as technology advances, and methods are discovered. NRCS is a great resource for any conservation concern, big or small.

Internship as a Range Technician in Rock Springs, Wyoming

Andrew McMains

University of Montana Western
Environmental Sciences
ENSC 494P

During the summer of 2016, I worked as a range technician for the High Desert District (HDD) of Wyoming at the Rock Springs Field Office (RSFO) as a seasonal firefighter on an engine crew. This seasonal work was completed both as a summer job and in order to complete my internship for my B.S. in Environmental Science. This internship was completed throughout the summer, but most of the hours were derived from a multi week prescribed fire that took place early in the summer. This prescribed burn helped me further understand the positive and negative impacts of wildland fire on various ecosystems.

Over the past twelve years, concerns have arisen in the Intermountain West regarding the decreasing mule deer populations due to many factors. These studies resulted in the formation of the Wyoming Mule Deer Initiative in 2011. In turn, this initiative led to the completion of the Wyoming Range Mule Deer Habitat Project EA, of which the prescribed fire I participated in is a part.

The Miller Mountain Prescribed Fire project is located in Lincoln County, about 15 miles west of La Barge, WY. Previous summer work (in which I participated) included cutting and piling conifers up to 9 in DBH. This particular burn targeted 350 acres of conifer encroached aspen stands at the south end of Miller Mountain, near Dutch George and Perkins Creek. The goal of the project is to stimulate regeneration of aspen plant communities and reduce conifer encroachment as well as reduce the hazardous fuel bed in the project area.

During the actual prescribed fire I assisted with ignitions in moving fuel mixtures around to resupply the actual burn crew. The next day I assisted the holding engines in suppression of the fire within several conifer stands, cutting a fire line around the active perimeter. This action continued for two more days. After containment, all other participating elements left, with the exception of my engine. We continued to hike and monitor the fire for another week. We also participated in some restoration efforts after the burn was controlled.

Internship as a Federal Mule Packer

Trepper Osburn

University of Montana Western
Environmental Interpretation

The Rocky Mountain Regional Specialty Pack String is based out of central Colorado and is a government mule packing operation that travels throughout the Black Hills of South Dakota, Wyoming, Nebraska and Colorado. We operate with 11 pack mules and 4 horses, and offer pack support for the Forest Service and other nonprofit organizations that are working on public lands in remote back country areas and the wilderness. With very few Forest Service districts that operate a stock program, our job is important in getting backcountry work completed by supplying the proper equipment and gear to the workers.

Education and safety are key components to operate successfully. We spend approximately one week at a time at one work place before we travel to the next packing project. During our time at a work project we provide stock safety training to the crews that will be working around the stock. At the end of each project we offer a packing demonstration to the district and the general public. These packing demonstrations offer insight into the history of packing, education on the process and inform the public that packing operations still exist in this modern world. During these interpretive talks, we demonstrate how to properly pack a mule and how we practice “leave not trace” while working with livestock in the back country. In addition, each year we offer a week-long mule packing clinic to Forest Service employees around the region that desire to learn the art of packing or broaden their horsemanship knowledge and safety while working with mules and horses.

Technical Memo Beulah Reservoir

Cody Pierson

University of Montana Western
Environmental Interpretation

Bull Trout were listed as threatened in 1999. The North fork of the Malheur and Beulah Reservoir have been designated critical habitat. Migratory Bull Trout reside in Beulah Reservoir from early October through May when they begin migration upstream to spawning locations in the headwaters of the NFMR watershed. By mid to late summer, migratory Bull Trout are mostly distributed upstream of the mouth of Little Crane Creek. Following spawning, individuals exhibiting migratory life history characteristics migrate downstream to the reservoir (October through mid-December). Juveniles rear in the upper NFMR for up to 4 years before moving out of their natal tributaries into downstream habitat in the main stem of the NFMR and Beulah Reservoir for Foraging/Migration/Overwintering (FMO) habitat. Adult and subadult rearing and foraging habitat includes the upper NFMR and Beulah Reservoir. The area along the North shoreline of the reservoir (approximately between the mouth of the NFMR and Warm Springs Creek) encompasses the majority of the area capable of providing this specific habitat. Current operations provide opportunities for a diverse vegetative community within and adjacent to the reservoir full pool elevation; however, not all the vegetation is available to fishes throughout the year. Grazing may be limiting expansion within the current distribution and depth of water may limit expansion further into the seasonally inundated shoreline.

Habitat improvements along select shorelines could provide habitat benefits for lake spawning prey species. Species most tolerant to inundation like the willow species would have the greatest chance of success. Natural expansion would likely occur if grazing were minimized until plants became established. Supplemental planting of willow saplings could increase the habitat diversity. Artificial habitat structures placed within the pool footprint could provide cover in areas that are void of plant growth; however, the type of structure and placement would need to be considered to maintain functionality and avoid recreational hazards.

Limiting livestock grazing along shorelines capable of providing spawning and rearing habitat is recommended. Vegetation should expand naturally and supplemental planting can occur if needed. Artificial structures can also be provided to create habitat in areas that conditions limit natural expansion.

Montana Department of Natural Resources and Conservation Internship

Jackson Spooner

University of Montana Western
Environmental Interpretation

The purpose of this internship at the Montana DNRC (Department of Natural Resources and Conservation) was to gain firsthand experience using the knowledge that I have received at The University of Montana Western as an environmental interpretation student. As an engine boss with the Kalispell Unit DNRC the interpretation skills that I've gained at UMW helped me nearly every day on the job. My duties as an engine boss were to communicate the daily assignments to the firefighters that I supervise, teach wildland fire related courses, communicate to the public about wildfire danger and safety, forest health management and wildfire suppression. Each of my duties as an engine boss require an aspect of environmental interpretation or just interpretation. The station that I worked at is called Boorman Station and is located in Marion, MT about 220 miles northwest of Dillon, MT. The area that the Kalispell Unit is responsible for is about 700,000 acres of land with federal, private and state ownerships. It is the Kalispell Unit's responsibility to protect all the federal, private and state ownerships from wildfires but only state lands for forest health management. During my internship, I was able to take part in the forest health management by supervising crews during trail rehabilitation, removal of diseased trees on state lands and parks, forest thinning projects for forest health, forest thinning projects for reduction of wildfire risk and wildfire rehabilitation. Wildfire suppression, communication of daily assignments and instructing wildfire courses were also a large portion of my internship. These three duties all have massive amounts of interpretation skills involved by being able to communicate properly to your peers and making sure that they fully understand what you are trying to communicate.

Internship as a PPQ Technician with the USDA APHIS PPQ Department

Cole Twedt

The University of Montana Western Environmental Sciences Department

During the summer of 2015, I accepted a position as a Plant Protection and Quarantine Technician with the United States Department of Agriculture (USDA) Animal and Plant Health Inspection Service (APHIS) Plant Protection and Quarantine (PPQ) department to serve as my internship for my Bachelors of Science Environmental Science degree. It was a paid internship at a GS-04 level. The internship was overseen by Shayne Galford, the state PPQ officer in 2015.

My duties as a Plant Protection and Quarantine Technician included, keeping diligent records, biological insect control and monitoring, setting and servicing insect traps, catching insects with a net and by hand, visually surveying grasshoppers and other insects, and the application of pesticides for grasshopper suppression.

For one week, early in the field season, I was sent to Charlo, Montana to work on the National Bison Range. During this week I monitored, collected, and spread insects that were being used for biological control of noxious weeds. The remainder of my internship was spent traveling around Montana, collecting grasshopper and morman cricket population data, and setting insect traps that were used to monitor invasive insect species. In the last few weeks of my internship, I took part in a large-scale application of pesticides on a private ranch, which housed a concentrated population of grasshoppers. The goal was to prevent large-scale biomass reduction and, in turn, allow for sustainable grazing to continue in this area.

Invasive insects and large populations of grasshoppers can cause considerable damage to an ecosystem. These threats can also diminish resources, such as biomass, used for agriculture. The purpose of my duties and data collection, was to provide data for Shayne Galford and other land managers to make informed mitigation decisions concerning the impacts of current and future insect populations. The Plant Protection and Quarantine Technician position introduced me to sustainable land use practices, as well various methods of invasive species control. I also gained skills in data recording and collection. These skills will, undoubtedly, become great assets to my future career in sustainable resource management.

Utilizing Geographic Information Systems to Enable Information Sharing Across NEON Domains

Sharon E. Williams

University of Montana Western
Environmental Sciences Department

The National Ecological Observation Network (NEON) is a continental-scale ecological observation facility sponsored by the National Science Foundation designed to gather and synthesize data on the impacts of climate change, land use change and invasive species on natural resources and biodiversity. The mission of NEON is to enable understanding and forecasting by providing infrastructure and consistent methodologies to support research and education in these areas. A necessary component for supporting that infrastructure is enabling information dissemination and collaboration between NEON staff across all (twenty) continent-wide domains.

Data collection information within NEON domains are catalogued by location and standardized visual representation of this data is best displayed and recognized within a graphic spatial context. Individual sites within a domain contain many points which are associated with unique sampling characteristics. Through the use of a dynamic web map, NEON staff and field technicians are able to quickly locate sampling sites across all domains. Interactive labels, popups, and symbology illustrate information regarding sample type, land cover type, property owner, and other relevant information for each location. These maps are shared through a NEON Enterprise GIS, which includes a centralized data repository where information can be accessed through an ArcServer and published as an accessible web service for real-time visualization and information dissemination. This simultaneous and instantaneous updating capability prevents potential operating inefficiencies such as duplicate data and outdated information. In addition, this platform could eventually enable the public and researchers to access, analyze, and visualize data about NEON sites.

This document explains the process and rationalization for using geographical information systems (GIS) for the construction of interactive domain maps that display spatial information appropriate to NEON's data collection efforts-- topography and geographic characteristics, aquatic and terrestrial sampling sites, observation tower locations, and domain support facilities.

Inventory and Assessment of Poindexter Slough in the Beaverhead River Drainage Near Dillon, MT

Jazzmyn Mullen, Danilo Figueroa, Jack Michael, Sharon Williams, Candice Dunagan, Andrea Love, Connor Greth, Kyle Hauns, Dominique Blain, Lee Salmonsén, Trystan Capp, Andrew McMains, Jackson Spooner, Jacob Miller, Austin Jaynes, Noah Criner, Trenton Duty

University of Montana Western
Environmental Sciences Department
Field Studies

Poindexter Slough, located approximately 3.0 miles south of Dillon, MT, is a low-gradient side channel (likely a former channel of the Beaverhead) fed primarily by the diversion of water from the Beaverhead River through a head-gate located at the headwaters of the slough. This infrastructure allows a maximum of $50 \text{ ft}^3\text{s}^{-1}$ to be diverted from the river. Additional water input along the length of the slough, which accounts for an added $25 \text{ ft}^3\text{s}^{-1}$, includes surface water, natural groundwater, and irrigation return flows. The slough loses approximately $35 \text{ ft}^3\text{s}^{-1}$ to irrigation demands and up to $60 \text{ ft}^3\text{s}^{-1}$ from diversion into the Dillon Canal during peak irrigation season. The Dillon Canal forms a barrier that raises the water level in the slough, slowing the flow and making a trap for sediment.

To eliminate this problem, Montana Fish, Wildlife, and Parks and The Beaverhead Watershed Committee carried out a restoration project over the course of one year (between the spring of 2015 and the spring of 2016) with the purpose of improving water quantity, habitat quality, and sediment transport, with an emphasis on expanding fishery benefits. This work, intended to reduce sediment input from the Beaverhead River, included an upgrade to the diversion gate, a replacement of the irrigation infrastructure, mechanically removing in-stream fine-grained sediment, modifying channel dimensions and transplanting riparian vegetation.

The 4.73 mile assessment area, which included both restored areas and an unrestored control area, was assessed by the University of Montana Western (UMW) Environmental Sciences Field Studies students both during and after restoration and includes twenty-two cross-sections placed between the diversion dam and the confluence on the Beaverhead River. This report, conducted by the 2016 Field Studies class, comprises the third annual assessment completed by UMW and includes an evaluation of stream morphology, in-stream macro-invertebrates, riparian vegetation, and stream habitat.

Presentation Abstracts

My Internship as a Beaverhead county BLM Volunteer

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Biology

For the summer of 2016, I volunteered at the Beaverhead County BLM office working with the biologist, as my internship for a B.S. Biology degree, with an option in integrative biology. The internship was good for me to learn what I wanted to do with a biology degree with an interest in animals. This internship also made me realize I did not want to work for the federal government with wildlife, and further peaked my interest in a career in a zoo or aquarium setting.

The understanding of what the Bureau of Land Management does for the limited wildlife they manage is the main goal I planned to learn from this internship. This summer began with me going with the seasonal wildlife biologist to continue a survey of bald eagle nest around the Beaverhead and Madison county. The next more important thing I began that summer was the sage grouse surveys to better understand why number have fallen and how we can improve them.

Then continuing the summer, I had much to do that included going with a group of the employees was to help with the watershed assessment surveys of local bodies of water that the BLM had begun many years ago and continued to add new sites as well as continue to monitor previous sites. Also, another important management issue in Montana is controlling the white bark pine beetles damaging white bark pine trees. With the seasonal botanists and seasonal wildlife biologist I went to Madison county near Ennis to mark white bark pine trees that had been previously marked to remove the white bark pine beetles from the tree.

I continued the summer with also working with the fish biologist with his work on fish surveying in streams in the Beaverhead country area. To finish off my volunteer work at the BLM I went to some trainings with the employees to learn more about what the job entails. This training included hazard training, defensive driving stream surveying training, watershed surveying training, and work office basic training.

My internships as a Creel Sampler and a State Police Intern

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My internship for the Bachelors of Science Biology Degree with a minor in Wildlife Ecology consisted of two parts. During the spring of 2016, I volunteered as a Creel Sampler for Montana Fish Wildlife and Parks (MFWP) in Red Rock Lakes National Wildlife Refuge. The second part was conducted in the early spring of 2017 with the Oregon State Police (OSP), Fish and Wildlife Division. These internships addressed both the research and enforcement sides of wildlife and fisheries ecology and helped further my understanding of how research and enforcement interact and work together to develop successful management plans.

The Creel Surveys were part of a MFWP study involving a five-year suppression of hybrid Yellowstone cutthroat trout (YCT) and how this influences the Centennial Valley Arctic Grayling. These surveys provide annual estimates of the number of YCT harvested by anglers, angler catch per effort of YCT, and the distribution of angler effort up and down stream of the Elk Lake Road. There were two survey types, catch cards and access point surveys. I worked on the access point surveys, which provide an independent estimate of angler effort, total catch, and the number of YCT harvested by sub-sampling during the angling season.

The OSP internship was based out of Astoria, OR, a fishing port near the mouth of the Columbia River. I assisted with Commercial Fish Buyer presentations, and wrote letters to Limited fish buyers. Both of these activities helped further explain laws and regulations to the different types of fish buyers throughout Oregon. I also had the opportunity to go undercover with OSP to look for poachers along the Columbia River during the Spring Chinook runs, and on the Oregon beaches during the closed razor clam season.

The combination of these internships has given me the tools, and first hand experiences, to further understand the different management techniques for different species. These experiences have, and will continue to help me in my future endeavors in these fields of management.

Significance of Minority Groups in the United States Military

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History

The United States has a rich history of having one of the most successful and fearsome militaries ever. Today our military consists of people who come from various ethnic and cultural backgrounds. The diversity is one of the things that makes our military strong. However, not too long ago minorities were not viewed in a positive light in the military. The purpose of this thesis is to show despite discrimination that minority groups throughout history have been major contributors in the United States Military. During my 10-15 minute oral presentation I hope to convey this idea to the audience. The groups I chose to analyze are the African American infantry division the Buffalo Soldiers and the Native American Code Talkers in World War II. This paper outlines the history of discrimination that both the African Americans and Native Americans were overcoming in American society. This paper also covers how the Buffalo Soldiers and Code Talkers in the military challenged discriminatory barriers. While discrimination between the groups was different both the African American and Native American groups who fought in the armed forces had a similar outlook on fighting for their country. Both groups saw the military as a way to try and put a stop to discrimination, prove their love of their country, and also as a chance to defend their loved ones for a country they were proud to live in.

Connection Through Wilderness

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Our world is controlled by our attachment to our electronics, we as a people have lost our connection with nature and each other. Take people 92 miles back on a dirt road with no internet and no cell service, and the real connections can begin. The job of being a guide in backcountry Denali National Park, was an eye opener to the just how far people have drifted away from each other and the great outdoors. There is no easy solution to bring the people back to wilderness, but it is important that we do not lose all connection with the world that surrounds us. Our National Parks are our country's greatest asset and should be protected at all cost. It is important for the next generation to be introduced to the enchantments of the wilderness, and create a bond with the environment.

My internship understanding shark ecology

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During the fall of 2016, I worked with Aaron Henderson at the Center for Marine Resource Studies on South Caicos. This internship ignited my desire to work with marine megafauna and addressed the importance of accurate data gathering to determine the future of marine protected areas. Utilizing the data we gathered as a team, I focused on understanding the ecology of the nurse shark around South Caicos.

The nurse shark, *Ginglymostoma cirratum*, is a species placed on the data deficient IUCN Red List due to the lack of data on population size, habitat utilization, migration patterns, and gene flow between subpopulations. Around the Turks and Caicos Islands, there is little demand for information on this species. Utilizing a drumlining system, students at the Center for Marine Resource Studies continually gather data on many species of sharks, including tiger, Caribbean reef, blacktip reef, lemon, hammerhead, and nurse. Utilizing catch per unit effort (CPUE) values, nurse shark movement and activity was compared between day and night, habitats, and sex. These calculations implied nurse sharks are diurnal with a habitat preference of sand flats. Continued research will be key to further understanding the ecology of nurse sharks on the Caicos Bank.

My Internship at Barrett Hospital

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During the fall of 2016, I shadowed a number of positions at Barrett Hospital and Healthcare. I have always known that I want to work with people, and that I have a love for biology and the understanding of biological processes, leaving my career search fairly open ended. It is however, because of these reasons that I have been drawn to the medical field, where I will be able to help people as well as utilize the skills obtained in my biology classes here at Montana Western. This Internship facilitated me in narrowing down what specific field of medicine I would like to pursue. Seeing each of the different positions within a hospital performed in real time helped me see more clearly what I will be able to find enjoyment and passion doing in the future.

I was able to observe the work of various professionals including, Registered nurses, nurse practitioner, physician's assistants, pediatric medicine, various positions in imaging, and OBGYN/Women's health. I was also able to experience the differences among work atmospheres throughout a hospital. Some days were much more demanding and fast paced, such as days in the emergency room, while others, such as days in physical therapy, were more laid back. Experiencing this difference in job demands allowed me to better see what sort of work atmosphere I hope to have in my own future.

Concluding my internship at Barrett Hospital I felt very fortunate to have had the opportunity to explore my career interests so intimately. I am also very grateful for the relationships I have formed during this experience.

Nicole M. Garren

University of Montana Western Student
Biology Program

During the spring of 2017, I worked as a veterinary technician at Beaverhead Veterinary Clinic in Dillon, MT. This internship served as an eye opener to the time commitment and hard work that is required of practicing veterinarians and their technicians. My passion for animals and veterinary medicine was fueled by the internship, and allowed me to make a more educated decision about continuing my education in veterinary medicine.

Beaverhead Veterinary Clinic is a locally owned, mixed animal practice with three practicing veterinarians. This clinic thrives on Dillon's cattle industry, but where there are cows, there are horses and cow dogs. This gave me the privilege of learning more about bovine medicine, which I had no experience in.

The knowledge that I gained through this internship is immeasurable. And the experiences I've had are priceless. I was able to experience and enjoy some of the work veterinarians do for dairies in Montana. I also learned the regulations and protocol for exporting cattle out of Montana through the Beaverhead Livestock Auction and how they must work with the veterinarian and brand inspector to insure that all cattle leaving Montana are traveling legally. Cattle work was not all that I did, though. I greatly had the pleasure of working with both small animals and horses. Here, I learned valuable skills such as how to properly hold a dog for sedation, how to correctly prep for surgery such as for a spay or neuter. Learning how to safely take radiographs of horses was another skill I learned, as well as the names of some of the views we regularly take. I was taught how to administer medication intravenously to horses, as well as how to put in a catheter and even the simple interrupted suture to hold it in place. There, of course, was no shortage of work in the office either, from daily chores, to cleaning, and even paperwork, all to keep the clinic running smoothly at its usual high speed.

For me, the variability of day to day activities, the valuable skills I've learned, and the multitude of patients with huge personalities, are what will keep me working hard in veterinary school. I cannot wait to return to Beaverhead Veterinary Clinic as a valued employee this summer.

Harnessing Love

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Human pair-bonding, or romantic love, is a concept that is difficult to operationalize though it is considered to be an almost universal human experience, for better or worse. Over the years, many researches have tried to give meaning to the concept so that we may better understand how it affects our daily lives. John A. Lee, a Canadian psychologist, has been among the most successful at this endeavor. Lee created a color wheel theory of love encompassing six different love styles. These styles ranged from a game-playing love to an intimate and passionate love; a manic love to an altruistic love; and a friendship-based love to a practical love. Hendrick and Hendrick, relying on Lee's original work, created a 42 item love attitudes scale to measure the love styles. Since then other researchers have included the love attitudes scale and Lee's six love styles in their research. This paper reports a literature review addressing the impact of love styles on the human experience of romantic love. Audience members can expect to complete, score, and interpret their own love styles inventories.

Delanie Greer

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During spring semester of 2017, I fulfilled my internship hours with a Physical Therapist at Kindred Nursing and Rehabilitation, which is located in Dillon Montana. Kindred Nursing and Rehabilitation is a facility that houses geriatrics. In addition to the usual nursing staff, there is also an Occupational Therapist and a Physical Therapist in house, they are there to assist patients in therapy that will help them recover from injuries they have and if possible work with them so they are able to go back home. My experience at Kindred Nursing and Rehabilitation solidified my passion that I have for the healthcare field, specifically for Physical Therapy.

A few years ago, I knew that physical therapy was the field that I was interested in working, but I had only looked at physical therapy that dealt with sport injuries. Interning at Kindred Nursing and Rehabilitation, I was able to see physical therapy used to improve the elderly's daily lives. Independence is an important factor for the elderly, so being able to observe patients go from not being able to walk to being able to walk with a walker was inspiring.

Due to liability, most of my internship was observational, but this was more than enough for me because every day I was able to witness something new. During the internship, I was able to make personal connections with patients. We talked about improvements they wanted, how physical therapy has already helped them and what initially brought them in for physical therapy. I assisted the Physical Therapist by: following patients that were relearning how to walk with a wheel chair, retrieving workout items needed, and guiding patients through a muscle workout the Physical Therapist taught me.

Overall, this internship opened my eyes to geriatric physical therapy, and it was inspiring and thrilling being able to see changes and be a part of some them. My mentor gave great advice to me every day, as well as excellent feedback on my assistance. This experience has made me excitement for my future as a Physical Therapist.

Exploring the Laboratory and the Medical Field

Justice Harris

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Biology Department

Because I was unsure as to which area of Biology I want to pursue as a future career, I completed a two-pronged internship.

The first portion of this internship was completed in a microbiology laboratory with the guidance of Dr. Michael Morrow. During this experience, I collected and analyzed water samples from our local water treatment plant for identification and population density determination of the aquatic microorganisms present in the different stages of the facility. The goal of this internship was to collect and count the different types of eukaryotes present in the aerated ponds and the return and waste channel to confirm that the treatment center was effectively treating water through the system, providing insight as to what the microbial population looks like in a “healthy” treatment system. Through this internship, I was able to gain experience in general laboratory and sterilization techniques, as well as get an introduction to what a laboratory technician career entails.

The second portion of my internship was completed at Barrett Hospital and Healthcare. For three months, I shadowed several areas of the radiology department at the hospital, as well as physician assistant Jana Barnes at the clinic. The purpose of this portion of my internship was to gain healthcare experience in both hospital and clinical settings to see if a medical profession was of interest. Throughout my time with BHH, I was able to shadow radiologists, radiology technicians, sonographers, doctors, surgeons, nurses and other hospital personnel. I was able to gain patient-provider experience, as well as sit in on a variety of procedures, which ranged from x-rays, CT scans, MRIs, biopsies, ultrasounds, echo tests, and an ACL reconstruction surgery.

Through both portions of my internship, I found that I would like to pursue a career in the medical field. My time at the hospital allowed me to gain valuable insight into the characteristics and qualities needed for several different medical professions; and through that I have decided to further my education and obtain a Bachelors in nursing to become a surgical registered nurse.

The Night of the Long Knives

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Dept. of History, Psychology, and Social Studies

HSTR 494 Sem: Nazi Seizure of Power

The Night of the Long Knives, (June 30-July 2, 1934) is just one of many extreme acts of violence committed by the Nazis. In those few days Adolf Hitler demonstrated the amount of power he held, as well as the loyalty he enjoyed within the NSDAP. This was also an early example of ruthless Nazi political tactics. The Night of the Long Knives arose because of an internal rebellion staged by Hitler's close and powerful political ally, Ernst Rohm leader of the SA. It became clear that Rohm had a different vision for the Nazi party. As tensions began to rise between Hitler and Rohm, extreme actions had to be taken. It is the purpose of my presentation to examine this conflict and share the story of why the Knight of the Long Knives occurred, as well as describe how this historical moment paved the way for Hitler to gain complete power in Germany.

Prohibition: How Butte Defied Federal Law

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The “Roarin’ 20s” were not wasted on the citizens of Butte, Montana. In fact, Butte probably “roared” louder than most of the large cities in the United States at the time. The 20s brought the Prohibition to life across the country with the inaction of the Temperance Movement, which banned the production, distribution, and consumption of alcohol. However, places like Butte, saw the Prohibition not as a hindrance but more as an entrepreneurial opportunity.

Assortments of alcohols, no less diverse than the city itself, were now made privately in underground and privately owned stills. Many were run in the basements of homes, but larger stills were found out in the hills surrounding the town. Bootlegging became a way of life for, not only men, but women and children as well. Being on the police force paid off more than being a bootlegger. Police officers of Butte were consistently bribed to turn a blind eye to the movement and use of alcohol. They were also blackmailed into protecting the producers themselves from seeing any jail time.

Speakeasies were fast growing and more than one hundred of these underground bars soon found a place to call home below the streets of Butte. Men and women alike made use of the speakeasies as places to socialize in a time when the genders were not allowed fraternize in public especially when alcohol was involved.

All of this together made Butte a colorful, independent place unlike any other big city of the time. Allowing it to live up to its nickname, “The Richest Hill on Earth.”

Westslope Cutthroat Restoration Internship

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Westslope cutthroat trout (*Oncorhynchus clarkii lewisi*) are a species of concern in Montana. One major contributing factor to the decline of westslope cutthroat trout are non-native competitors such as rainbow trout (*Oncorhynchus mykiss*) and brook trout (*Salvelinus fontinalis*). Non-native brook trout were introduced into Montana in 1889. Since then, the population has grown substantially. Brook trout are large competitors with westslope cutthroat trout because they have the same diet. Brook trout will also consume juvenile westslope cutthroat trout if they get the chance. Rainbow trout were also introduced in 1889 and have taken over the habitat where cutthroat trout reside. Rainbow trout are typically larger in size than westslope cutthroat trout and outcompete with native species for food. Rainbow trout and westslope cutthroat trout also spawn at the same time and in the same areas. This causes hybridization between the two species. The hybrids, often called cutbows, are typically larger than westslope cutthroat trout and tend to compete with the native species for food.

These two non-native species are causing the westslope cutthroat trout population to decline. There are many restoration projects that are taking place in Montana to help with this decline. I will be discussing the opportunity I had to be involved in one of these projects over the summer of 2016. I worked with the Beaverhead County Forest Service as a hydrologist-technician and had the opportunity to partner up with Matt Jaeger, the leading fisheries biologist for Fish, Wildlife, and Parks. I was able to learn many different treatment methods to remove non-native fish species. Two major methods that I learned are electro-shocking and rotenone treatments. I was also involved in tagging and relocating native species. These projects are extremely important if native fish species like westslope cutthroat trout are going to continue to thrive in Montana. Fortunately, I have been invited to return for the next season to continue helping with these projects.

African American Opposition to the Black Panther Party

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The Black Panther Party was a revolution from the nonviolent demonstrations that dominated the Civil Rights movement in the late 1950s and early 1960s, garnering international attention, both good and bad. The most prominent chapter of the Black Panther Party was founded by Huey Newton and Bobby Seale in Oakland California in 1966. Since its founding, the effectiveness of the Black Panther Party has been widely discussed and debated. At their worst, party members are viewed as servants of rage without a focused agenda and at their best as the saviors the African American community desperately needed. To look for hostility aimed at the party, one need not look further than the FBI, however, the focus of this study is to uncover opposition to the Black Panther Party inside the African American Community. Dissent amongst African Americans sprung up nearly as fast as the party itself for a multitude of reasons, but the most common were a disagreement with violent tactics and a lack of faith in the Marxist-Leninist ideology the Panthers stood for. Prominent African American figures throughout the country publicly spoke out against the Black Panther Party's insertion that capitalism was the enemy of all African Americans. To many, the Black Panther Party set the Civil Rights movement back by furthering polarizing the races. I will be presenting my findings via oral presentation.

Montana Fish Wildlife Parks Student Internship
Fishing Access Site (FAS) Recreation Survey 2016

Michael Melin

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Environmental Sciences Dept.

Montana Fish, Wildlife and Parks conducted a state-wide Fishing Access Site (FAS) Recreation Survey during the summer of 2016. The Region 3 (Bozeman based) sites where I conducted the survey included the Yellowstone, Gallatin, Madison, Jefferson, Beaverhead, Ruby, and Big Hole river drainages. I collected survey data from May 23, 2016 until August 25, 2017 in the form of face-to-face interviews. The information I collected, and entered into excel, helps MT FWP determine general use demographics for each river drainage and Fishing Access Site.

Training for the student internship was done in Helena with MT FWP on May 19, 2016. Here we were instructed on how to approach people using sites, then interview them. I was also trained on proper uses for a FWP vehicle. At our training, we were given a schedule where randomly four out of every seven days were assigned to random fishing access sites.

Information collected during interviews included two groups of questions; four questions for the whole group visiting the site, and two questions for individuals within the group over 16 years of age. Interview questions I asked the group visiting the FAS were how many individuals were in the group, the primary reason the group was there, other reasons the group visited the FAS, and if the group is using a commercial guide or outfitter service or not. Individual questions I asked were if the group member was a resident of Montana and if they had purchased a Montana fishing license in 2016.

Through extensive traveling, I acquired over a thousand group survey numbers which play an important role in specific regional management decisions. These decisions have great impacts on public uses, and access to waters for recreation. With this internship, I learned how MT FWP makes management decisions, how public use southwest Montana's rivers and lakes, also learned how to interact face-to-face with the people recreating on waters.

Prostitution in Victorian Britain: How Elizabeth's Gaskell's Ruth Personifies the ideals of Victorian Morals and Creation of Gender.

Stacia Salmonsén

History, Psychology, and Social Sciences

My paper centers on the idea that Victorian Britain created its own issues when it came to fallen women and prostitution. That denotation of fallen women and prostitution is the idea of categorization. That categorization was inspired by a combination of a value system propagated by Christian morals, middle class expectations, and political economy. Elizabeth Gaskell employs all of these elements in the book "*Ruth*", which is the personification of what is happening in the society at the time. In "*Ruth*" a woman named Ruth who is working as a seamstress, eventually loses her job because of a misunderstanding with her employer. Ruth who is promised to a man that leaves the relationship and she is left alone. She is left to find the way herself. The book is an example of what can happen if you go against the rules of Victorian society.

Comparative Analysis: Who Exactly Voted for the Nazis?

Tyrel Smith

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Dept. of History

HSTA 494H

Adolf Hitler's rise to power is one of, if not the most, studied political phenomena of the 20th century. How did Hitler and the NSDAP garner enough support to become the majority party in a Reichstag election? Who were their supporters? For the past 70+ years these are questions that have been extensively studied. Historiographically, early interpretations argued that middle-class Protestants were the backbone of the Nazi movement. However, starting in the 1970's historians like Thomas Childers began to challenge the simplicity of that conclusion. He and other revisionist historians employed various methods to arrive at a more accurate picture of the typical NSDAP supporter. New research demonstrates that the NSDAP was a "catch all" party, appealing to all segments of German society. Only such mass appeal could make the Nazis formidable electorally. My research is primarily historiographical. I hope to demonstrate how the historical understanding of Nazi support has evolved over time.

Internship as Fisheries Technician

Charlie Switzer

University of Montana Western
Biology Department

During June and July of 2016 I worked as a fisheries technician for Avista Corporations in Noxon, MT for internship credits toward B.S. Biology degree with wildlife ecology option. This internship was a great opportunity for me to gain field experience as well as learn about fisheries management of native and non-native fish species.

Both bull trout and Westslope cutthroat trout (WCT) are Montana native salmonids and both are species of concern. Avista Corp. owns hydroelectric dams on the Clark Fork River in northwestern Montana including Noxon Rapids dam and Cabinet Gorge dam. To operate these dams, Avista must implement 26 protection, mitigation, and enhancement measures to reduce the impact dams have on salmonid populations.

As a fisheries technician, I took part in multiple Avista programs including upstream fish passage, tributary trapping, and fish abundance and monitoring. Upstream fish passage includes boat electrofishing on the Clark Fork River to capture adult bull trout and WCT traveling upstream from Lake Pond Oreille. Bull trout are transported upstream of Cabinet Gorge dam back to their natal streams. Forty adult WCT have surgically implanted radio tags used to track their movements in tributaries of the Clark Fork River. Telemetry tracking of the tagged WCT is done by foot, vehicle, boat, and airplane. Tributary trapping and fish abundance and monitoring involve use of weir and screw traps and stream electrofishing to estimate salmonid populations in tributaries.

This internship gave me experience in multiple areas of fisheries management. I was fortunate to work with many different people within Avista as well as different agencies. It has equipped me with skills and experience to apply towards a professional career in fisheries or wildlife management.

Adolf Hitler: A Man of Circumstance?

Jessica Weimer

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Adolf Hitler, as we all know, became the leader of a party that would murder millions of Jewish people. There are several circumstances that gave way to create the man that Hitler would become. Beginning with his childhood, into his military service, even his attempts at art schools all led up to forming this dictator. A person might even say that fate is what led him to gain such charisma and authority. Fate may have led him to power, but several events should have stopped him in his path. This presentation is created to give the listener more understanding of the events that led up to Hitler gaining power over Germany and a few of the events that should have stopped him in his tracks.

My Internship Experience

Jordan Willis

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I recently started an internship in February shadowing the pharmacists at Barrett Hospital and HealthCare Clinic in Dillon, MT. This internship is instrumental for pursuing my career as an aspiring pharmacist as it will give me personal insight as to what a pharmacist actually does. It truly has helped me grasp a better idea and understanding of the day-to-day operations of what it entails to be a pharmacist. It has opened my eyes by allowing me to see first-hand some of the advanced pharmacy technology and given me more appreciation for pharmacists and their job duties.

I have gained a lot of information during my internship thus far, but what intrigued me the most was the management of drugs. Prior to my internship, I seemed to have overlooked just how much work this entails. However, while being at my internship I observed just how strict the pharmacist is with the drugs and how they are being monitored and signed for. There are many proper checks and balances that are instilled to ensure that the drugs are accounted for, such as who used them or checked them out and when they were checked out. To help with this monitoring process, there are machines that send this information directly to the pharmacist informing them when, where, and who is dispensing these drugs.

The Coumadin clinic, which is responsible for checking up and monitoring the patients who are on Warfarin—a drug that prolongs the blood's ability to clot—has also been a source of interest to me. I am enjoying the patient care aspect and the personal connections that come along with this clinic. Here, the pharmacists routinely check the INR of the patient to see if it is high or low and then adjust Warfarin dosage accordingly. I've enjoyed learning what the pharmacists look for in order to make these adjustments.

Overall, this internship experience has allowed me to observe the day-to-day operations of a pharmacist, be involved directly with patient care, opened my eyes to the advanced pharmacy technology that can monitor the management of drugs, and allowed me to ask and get answers to any questions I've had regarding the career as a pharmacist. It has helped to influence and reiterate my decision to pursue my desire to attend pharmacy school.