2009 Natural Resource Internship Program

San Juan Mountains of Southwestern Colorado, USA

Gain hands-on experience in environmental science and management!

Interns work with natural resource managers and/or researchers on a variety of projects spanning hydrology, water quality, and ecology, and addressing issues such as mine reclamation, air and water pollution, and ecosystem health.

Internships will be based in various locations (but mainly in Durango and Silverton, CO). Interns will participate in a program-wide orientation and field trips. At the end of the program, each intern will prepare a presentation about their experience.

Interns will receive a $2,700 stipend, housing, and mileage reimbursement for travel to program events. Some positions may require that the intern have their own transportation to and from their work site.

List of Internship Opportunities: Please see the list attached below.

How to apply for an internship: Send or email an application form (attached below), a one page letter describing your interest and experience, a resume, and one letter of recommendation. Deadline is March 16. Interns must be at least 18 years old.

Internship Coordinator: Aaron Kimple, Mountain Studies Institute, Fort Lewis College, Durango, CO 81301; Kimple_A@fortlewis.edu; tel. 970-247-7071.
www.mountainstudies.org.

Brought to you by the San Juan Collaboratory - http://sjc.colorado.edu

Colorado
University of Colorado at Boulder

Mountain Studies Institute
SAN JUAN MOUNTAINS, COLORADO

Fort Lewis College

Application for 2009 Summer Natural Resource Internship Program
San Juan Collaboratory

Your application package includes this form, a one-page letter describing your interests and experience, your resume, and a letter of recommendation from your professor or previous employer. Deadline is March 16, 2009. Send or email to:

Aaron Kimple, Mountain Studies Institute, Fort Lewis College, Durango, CO 81301. Kimple_A@fortlewis.edu.

Some intern positions may require a phone interview. You will be contacted if you are being considered for one of these positions.

Applicant Information:

Name:	Phone #:
Address:	Email:
	Institution:
	Department/Degree/Year:
	G.P.A.:

Letter of Recommendation is from:

Name:	Phone #:
Address:	Email:
	Institution:
	Department:

Internship Preferences:

First Choice

Second Choice

Third Choice

Fourth Choice

Students interested in receiving academic credit should discuss the potential with a representative from the school with which they are affiliated.

SAN JUAN COLLABORATORY – NATURAL RESOURCE INTERNSHIP OPPORTUNITIES FOR SUMMER 2009

1) FEN INVENTORY INTERN, 1 POSITION.

Based in Delta, Colorado – Grand Mesa, Uncompahgre, and Gunnison National Forest
Mentored by John Almy, Liane Mattson, and Barry Johnston, USDA Forest Service.
****This position will be at least one week longer than the other positions and is likely to be extended several weeks (with additional pay). Please indicate your ability to work beyond August 14 in your application.*

Description: The intern will be involved with field verification of fen wetlands on the forest as part of a multi-disciplinary team. Fens are an important type of peat forming wetland. These fens have developed over several thousand of years and many have been either totally lost or impacted by human activities. The Forest has undertaken a comprehensive effort to identify potential fens; conduct field verification at representative locations; collect hydrologic and ecological characteristics; and identify disturbance impacts. A standard field protocol (in development) will be used at all field sites. Field verification will require the ability to travel to the site, with the aid of maps, aerial photos, and GPS equipment. Inventory equipment will include forms, hand held GPS unit, two-way radio, camera, soil sampling equipment, wetland plant identification keys and possible water pH and conductivity meters. In most cases the intern will be working with at least one other individual and possibly two. Once the project is well underway the intern may be asked to work alone doing fen inventory, or on another brief assignment.

Many of these sites are relatively remote and may require hiking through mountainous terrain up to several miles. Travel to the sites may also require travel across primitive roads. Work may entail working under adverse weather conditions. Work will begin once training has been completed in the use of a field inventory protocol. Work will be conducted under the guidance of a team of Forest Service resource specialists, which include botanists, hydrologist, geologist and wetland specialists.

The majority of fens on the Forest are found at elevations approaching 10,000 feet and above. Therefore inventory work may not be able to start until mid to late June. The most productive months to accomplish work are in August and September. The work period will be from June 8th – August 21st. There may be an opportunity to extend the work thru September. The applicant should identify their availability to work thru the month of September; however, there would be no guarantee beyond August 21st.

The GMUG National Forest covers about 3 million acres in western Colorado and includes a variety of landscapes and ecosystems. The Forest includes a number of 14,000 foot peaks and an abundance of recreational opportunities. Several mountain communities including Crested Butte and Telluride are within the Forest vicinity. Delta is approximately a 5 hour drive west of Denver, one hour south of Grand Junction, CO and 5 hours east and south of Salt Lake City. If you are interested in working on a critically important project outdoors for a summer in a spectacular setting, with an opportunity for real solitude, gaining valuable experience then this is the position for you.

Qualifications: This position will require knowledge and an aptitude for wetland plant species identification. Some previous botanical experience and/or education are highly desired. Training will be provided by the Forest ecologist in plant species inventories. Additionally

knowledge, skills and experience in hydrology, soils and/or wetland science would be beneficial. Ability to operate a four wheel drive manual transmission vehicle would be very useful. The experience and ability to effectively use database and geographic information systems software may be useful, but is not required. Individual must be in good physical condition willing and able to work out-of-doors on a daily basis under a variety of weather conditions. Individual must be willing and able to camp out during the work week if the situation requires.

Housing. Housing may be a combination of a bunkhouse in town, a remote administrative site and camping. Beds at bunkhouse facilities do not include linens. It may be necessary to share a room. Appropriate accommodations will be made if room sharing is required. Individual should be able to provide their own camping equipment. Reimbursement for food at $15/day will occur. A government vehicle will be provided for official use. Personal vehicles and gear may be stored at the weekend quarters site.

Transportation: Intern needs to provide their own transportation to USDA Forest Service office in Delta, CO.

2) FORESTRY INTERN, 2 POSITIONS

Based in Durango, Colorado
Mentored by Sally Zwisler and Laurie Swisher, San Juan Public Lands (USFS/BLM).

Description: The 2 interns will be working with their mentors during their training period, and then will work together as a field team. Interns may assist other field crews on projects as requested. Field work may be located anywhere on the San Juan Public Lands (San Juan NF & BLM lands from Colorado/Utah border on west to Continental Divide at Wolf Creek Pass on the east, with New Mexico State line on south, and Continental Divide on north). Work will involve inventory, identification, classification and mapping of vegetation (trees, shrubs, grass & forbs). Projects may include field verifying attributes in Old Growth areas, conducting regeneration surveys, and assisting with insect and disease surveys. Data collected will be used to update the Public Lands corporate R2VEG geodatabase, and the Forest Service's FSVEG database. These databases are used for project and forest level planning and analysis. Tasks may also include data entry, data editing, and data preparation and formatting for entry into these corporate databases. It is possible that a later ending date could be negotiated if need arises, and interns are available.

Qualifications: The intern should have an ability to interpret topographic maps and navigate with compass to find work locations, an ability and willingness to work outside in remote and rugged locations with extreme weather conditions, and the ability and willingness to camp out in remote work locations. A valid state driver's license and good driving record are required. Applicants will be required to operate manual transmission and 4WD vehicles on rough roads in remote areas. The applicant should have an interest and familiarity with forestry and vegetation, and enthusiasm for learning more. Good organization and communication skills. Preferred skills include a familiarity and knowledge of vegetation sampling techniques and data collection protocols, knowledge and identification skills of local plants and plant communities, and a familiarity and experience with GIS software (ArcGIS) and GPS devices and applications.

Housing. A shared suite in Fort Lewis College dorm (with small kitchen, living room, bathroom/shower). Local students with a current year long lease may request a stipend to assist with housing costs in Durango, CO instead of using the housing at Fort Lewis College.

Transportation: Intern will need their own transportation to and from the Public Lands Center. Interns will be provided a government vehicle to access field locations.

3) FIELD HYDROLOGY AND AIR QUALITY, 2 POSITIONS

Based in Durango, CO
Mentored by Kelly Palmer, San Juan Public Lands (USFS/BLM).

Description: The intern will be involved with several work projects and studies scheduled for the summer of 2009. First is the ongoing inventory of spring water sources across the San Juan Public Lands, which involves fieldwork from alpine settings to the canyon country of the Colorado Plateau. Springs are recorded with a GPS unit, flow is measured, condition assessed, and other basic information is recorded and entered into a GIS database. Second, stream survey on the San Juan Public Lands includes training in basic hydrologic field methodologies such as cross sections, latitudinal profiles, channel substrate measurements, and discharge measurements. Third is the installation and instrumentation of a new mercury monitoring station at high elevation in the San Juan Mountains. All work will be with field members of the San Juan National Forest hydrology field crew based in Durango, CO. This job offers a tremendous opportunity to do field work in a wide variety of beautiful terrain and locations across the San Juan Public Lands. The intern will learn about hydrologic survey techniques, basic Colorado water rights law, and monitoring techniques for atmospheric deposition of mercury.

Qualifications: Minimum skills – ability to work under a variety of environmental conditions in the field (snow, rain, hot sunny weather, steep mountain and canyon terrain, high elevation hiking, wading in rivers etc.). Ability to work well with others in a crew situation. Basic knowledge of physical sciences such as hydrology, geology, soil science etc. Ability to read maps and perform basic orienteering. Basic mapping and field note taking skills. Preferred skills – experience with GPS units, computer data entry in spreadsheets or other databases, basic GIS operation (but we will train if skills are lacking).

Housing. The intern may be housed in US Forest Service government housing (available on a limited basis) or within a shared suite in Fort Lewis College dorm (with small kitchen, living room, bathroom/shower). Local students with a current year long lease may request a stipend to assist with housing costs in Durango, CO instead of using the FLC or government housing.

Transportation: Intern will need their own transportation to and from the Public Lands Center

4) ECOLOGICAL EFFECTS OF AIR POLLUTION, 2 POSITIONS

(*1 of the positions is funded specifically for a Native American, with membership in the Southern Ute Indian Tribe most desired.*)
Based in Durango & Silverton, Colorado
Mentored by Koren Nydick and Aaron Kimple, Mountain Studies Institute.

Description: The interns will work on 3 projects. This is a great opportunity to gain a variety of skills and work in multiple ecosystems. Interns will be trained by their mentors and work with them frequently. Some days, however, the two interns will work together without mentors. 1) Mercury bioaccumulation in wildlife of Mesa Verde National Park. The deposition of airborne mercury in rain, snow and dry deposition is a concern. This pilot study will investigate if bioaccumulation of mercury is occurring in Mesa Verde NP. We will be collecting wildlife

(species to be determined but could range from spiders to small mammals) and testing fur, blood, or tissue samples for mercury concentration. Field/lab work will occur in the first half of the internship. 2) Water quality monitoring of Vallecito Reservoir. We will be working with watershed volunteers to monitor conditions in Vallecito Reservoir and collect samples to test for mercury concentration. Field/lab work will occur intermittently throughout the internship. 3) High-elevation vegetation survey for ozone damage. Ground-level ozone is an air pollutant of concern that can harm both human health and vegetation. We will be surveying vegetation on US Forest Service and BLM lands above 9,000 feet altitude near Silverton. Field work and data analysis will occur during the latter half of the internship. Interns will work out of Durango for the first half of the internship. Housing will be provided at Fort Lewis College. Interns will work out of Silverton for the latter half of the internship and housing will be provided in Silverton. Depending on work and availability the opportunity may exist to extend the experience.

Qualifications:

Minimum qualifications

- One or more years of undergraduate college or university successfully completed in a related field (biology, environmental science, chemistry, etc.)
- Excellent health and physical ability to be able to conduct field work in difficult terrain under conditions that could range from hot and dry to cold and wet. Ability to hike and carry a moderately heavy backpack in the mountains and high desert.
- A high level of interest in and enthusiasm for ecology.
- Ability to work in a team, but also take personal responsibility for your work.
- For one position (but not the other): Native American - Southern Ute Indian Tribe member

Additional preferred qualifications (not required):

- Previous environmental field work and/or laboratory experience.
- Experience or coursework with GPS and/or GIS
- Experience of coursework with spreadsheets (Excel or other software)

Housing. A shared suite in Fort Lewis College dorm (with small kitchen, living room, bathroom/shower) for first 5 weeks, then a shared cabin in Silverton with access to kitchen, living room, bathroom/showers. Interns must provide their own linens. Local students with a current year long lease may request a stipend to assist with housing costs in Durango, CO instead of using the housing at Fort Lewis College for the Durango portion of the internship.

Transportation: At least one of the two interns will need a vehicle that can be used for field work. Mileage will be reimbursed for work on the projects. It is recommended that both interns have transportation, however, for their personal needs.

5) ABANDONED MINE LAND RECLAMATION AND BIOCHAR CARBON CAPTURE STUDIES, 2 POSITIONS

Based in Silverton, Colorado
Mentored by Stephanie Odell and Lisa Richardson, Silverton Public Lands (USFS/BLM).

Description: The intern will assist with a number of tasks associated with mine land reclamation, monitoring, inventory, and working with biochar amendments to evaluate potential for carbon storage on mine sites, including soil and water sampling, site assessments, and numerous other project tasks. Plan on a lot of hiking.

Qualifications: Motivation to do a great job is the most important, but good physical condition, attention to detail and experience with field work is preferred. The intern will be hiking (a lot) in mountain areas. The applicant should have a good background in chemistry, environmental science, and enthusiasm for environmental systems study. Applicant should have experience navigating in a backcountry setting and should be prepared to work in a wide variety of weather conditions. The applicant should have the ability to work well with others in a crew situation and have basic knowledge of physical sciences such as hydrology, geology, soil science etc. Ability to read maps and perform basic orienteering, basic mapping skills, experience with GPS units, computer data entry in spreadsheets or other databases, basic GIS operation are preferred.

Housing. A shared cabin will be provided in Silverton at Mountain Studies Institute field station. The intern will be required to supply their own linens. Bathroom/showers, kitchen, and living room are located in the main lodge adjacent to the cabins.

Transportation: Intern will need their own transportation to and from the Public Lands Center in Silverton. It is within walking distance from the cabin, but the interns may prefer to have additional transportation (car, bicycle). Silverton is a charming, small mountain town with a central downtown surrounded by beautiful mountain peaks. There is a small grocery store, hardware store, several restaurants, etc. and plenty of recreational opportunities. Durango is about one hour to the south by car.