(161 ha). Botanical surveys have been conducted on the mountain dating back to the nineteenth century, with a number of state-listed plant populations currently being monitored. Since 1955, researchers on Mount Mansfield have amassed a voluminous scientific record spanning the earth, atmospheric, and ecological sciences. Continuous, decades-old records exist in the areas of meteorology, wet deposition chemistry, forest health, plant and animal ecology, streamflow, and water chemistry. Systematic soil and alpine zone monitoring began 12 and 10 years ago, respectively. With coordination by the Vermont Monitoring Cooperative, these datasets have been used to model various dimensions of the mountain's ecosystem, often in combination with records from other high-elevation sites in the northeastern US and southeastern Canada. A coalition has recently formed to establish the Mount Mansfield Science and Stewardship Center within a vacant building at the top of a toll road that reaches the ridgeline at 1,175 m elevation. The Center aims to strengthen interdisciplinary scientific research, integrate social science into the scope of study, and increase participation in regional and international cooperatives. A parallel goal is to develop and demonstrate stewardship actions that will lead to improved conservation of mountain environments at local and global scales. This presentation will: review key findings from past research and monitoring; describe the current vision for an expanded science and stewardship platform; and invite collaboration from mountain observatories with similar objectives.

51. Sierra Nevada: a high elevation laboratory to monitor the impacts of global change in Southern Europe

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Sierra Nevada is a high mountain range (reaching 3,482 m.a.s.l.) located in Southern Spain (37ºN, 3º W) covering 2,000 km2. The climate is Mediterranean, characterized by cold winters and hot summers, with pronounced summer drought (July-August). It hosts a high number of endemic plant species (c. 80) for a total of 2.100 species of vascular plants (25% and 20% of Spanish and European flora, respectively), being considered one of the most important biodiversity hotspots in the Mediterranean region. It has several legal protections: Biosphere Reserve (UNESCO); Special Protection Area and Site of Community Importance (Natura 2000 network); and National Park. The area includes 61 municipalities with more than 90,000 inhabitants. The main economic activities are agriculture, tourism, cattle raising, beekeeping, mining, and skiing. Sierra Nevada Global Change Observatory is a long term monitoring program to assess the effects of global change in this mountain range. It is intended to compile the information necessary for identifying as early as possible the impacts of global change, in order to design management mechanisms to minimize these impacts and adapt the system to new scenarios. The Sierra Nevada Global Change Observatory has four cornerstones: a monitoring program with 40 methodologies that collect information on ecosystem functioning; an information system to store and manage all the information gathered; a plan to promote adaptive management of natural resources using the knowledge amassed through the monitoring programme; and an outreach program to disseminate all the available information to potential users. In this poster we will show the structure of our monitoring program, the

main preliminary results that we have obtained in the last 5 years and the most important challenges that we will face up in the next future.

52. Snow albedo spectral analysis: a study to further understanding of snow and glacier energetics

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Name of Effort: Tahoe Meadows Field Site
Latitude: 39.304630
Longitude: -119.914650
Implementation Agencies: UNR, DRI, ACSP
Glacier sensitivity to climate trends make them a point of critical interest for international climate monitoring programs. Through collaboration with the American Climber Science Program (ACSP) and the Desert Research Institute (DRI), this research will advance the knowledge of glacier energetics. We are developing and refining methods to analyze the radiative balance at the snow and/or glacier surface. A dual spectrometer system was developed to measure the spectral albedo of the snow surface. At each location, of albedo measurements, the surface layer of snow was collected to analyze in the laboratory. Snow was melted and filtered onto quartz fiber filters. Filters are analyzed for transmission spectroscopy, elemental and black carbon analysis, and general elemental analysis. We will look for relationships between the albedo of the snow and the chemical composition. These relationships will allow scientists to quickly measure snow and glacier albedo to determine the energy budget and to facilitate interpretation of satellite remote sensing. We are evaluating snow progressively farther from the road at Tahoe Meadows as a test site. This newly developed capability will allow groups such as the ACSP to analyze their data for snow collections in the Cordillera Blanca region of South America, and in the Himalayas of Nepal.

53. Swiss hydrology – presenting research data and forthcoming research topics

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Swiss hydrologists have started a concerted action to discuss the future of Swiss hydrology: What are the challenges for this mountainous country, which (further) observations are needed, how can the collaboration between hydrologists be improved? There are many proposals which are presented in a specific report edited by the Swiss Hydrological Commission and the Swiss Hydrological Society, among others the creation of a network of experimental catchments. The report shows that integrated water resource management (IWRM) will become more important. Experts question whether the present, quite fragmented approach to water resource management in Switzerland will be suitable to address the important challenges of the future. Currently, actions are taken to implement the ideas of the report. Hydrological Atlas of Switzerland - from long-term observations to a standard "oeuvre" of Swiss hydrology: Systematic hydro-meteorological observations have started in Switzerland 150 years ago. Thus a lot of data and information is recorded for this mountainous country. Through an in-depth and systematic scientific analysis – upscaling of point