Environmental Youth Summit 2010

greenpower

DRI
Desert Research Institute

Breakout Session Speaker Suggestions

December 15th, 2009

Organization: Sierra Nevada Journeys, Reno and Sacramento

Summary: Sierra Nevada Journeys of Reno, Nevada is an educational non-profit organization which empowers youth and community through positive risk-taking and experiential leadership, science, and outdoor education. Sierra Nevada Journeys offers a range of school outreach programs, after-school science clubs, summer camps, and residential education programs meant to supplement classroom learning and expose students to the environment and their natural world. Participating students develop leadership skills and self-confidence, improve their academic performance, develop closer relationships with their community, and learn to make positive life-style choices.

Session Topic: *Energy and Society*

Best suited for K-8th students, Sierra Nevada Journey's is a certified Project Learning Tree training organization and has been contracted by GreenPower to provide PLT Energy & Society trainings to GreenPower schools. Widely popular and successful, these trainings incorporate visuals, music, and dance to help students learn about their relationship with energy and investigate the environmental issues related to energy's role in society.

Further Info: http://www.sierranevadajourneys.org/

Organization: Envirolution, Reno/Tahoe and New York

Summary: Envirolution is a non profit organization facilitating green economic development and empowering the next generation of sustainability leaders. Envirolution operates at the intersection of environment, business, and education using a combination of programs to produce positive impacts for students, businesses, organizations, and communities. They are a catalyst organization bringing green economy principles, practices, and tools to local economic development, business development, and workforce training.

Session Topic: *School Energy Auditing*

Best suited for high-school students, Envirolution would help session attendees gain a grasp of the basics of energy assessment and conservation. Envirolution would help students learn how to conduct a school site assessment to discover potential energy savings, as well as cover the six main areas of energy consumption in a building and demonstrate energy conservation techniques. Based on Project ReCharge, Envirolution's new high school service-learning curriculum helps students learn how to reduce energy consumption, save money, and lower emissions.

Further Info: http://www.envirolution.org/home.php

Organization: ACE (Alliance for Climate Education), nationwide

Summary: With the tagline "Lower Your Emissions, Raise Your Voice", ACE provides facts about climate change to high school students, as well as solutions. ACE delivers in-person, science-based, multimedia presentations on the science behind climate change in order to educate, inspire, and empower students to take action. ACE presentations are free for schools and available in assembly or classroom formats. After the presentation, ACE helps students take action by creating Action Teams at their schools and also provides grants, scholarships, activist toolkits, online communities, and more. See http://www.acespace.org/get-inspired/trailer for a trailer showcasing an assembly and student feedback to the program.

Session Topic: *Climate Change, Solutions, and Spreading the Word*

Best suited for high-school students, ACE proposes providing an interactive presentation on climate change while offering solutions, then helping Environmental Youth Summit Ambassadors understand the power of youth leadership and how they can make a change. Their session topic would also include a discussion on how to effectively give a presentation to younger students, thereby helping the lessons and solutions on climate change spread to a greater student base.

Further Info: http://www.acespace.org/

Faculty: Dr. Duane Moser

Summary: Dr. Moser is a microbial and molecular ecologist focused on life in the terrestrial deep subsurface, lakes and oceans, and arid lands. At DRI, Dr. Moser is developing a research program addressing the many microbiologically interesting habitats of the Great Basin, with special emphasis on aquifer and geothermal systems, terminal lakes and playas, and deep lake sediments. He is also developing studies addressing the role of microbes in contaminant alteration and transport; especially radionuclides at DOE sites, such as the Nevada Test Site. He is also researching the role of riverbed and riparian zone microbes in the enhancement of water quality of western rivers, such as the Truckee in NV.

Session Topic: *Life in Extreme Environments*

Dr. Moser's presentation could be tailored to a variety of age-groups, depending on the needs of the Environmental Youth Summit. His presentation would detail how microbes are everywhere...almost…but how hot is too hot for a microbe to exist? How cold is too cold? How deep in the Earth can they be found? How do they survive in salt? Radiation? Extreme dryness?

Further Info: http://www.dri.edu/People/Duane.Moser/

Faculty: Dr. Lynn Fenstermaker

Summary: Dr. Fenstermaker has experience and interests in the use of remotely sensed data to map, monitor, and assess the effect of environmental stressors on vegetation at small and large scales. As Director of the Nevada Desert Research Center, Dr. Fenstermaker oversees the operations of both the Nevada Desert FACE (Free Air CO2 Enrichment) Facility (NDFF) and the Mojave Global Change Facility (MGCF). Both of these efforts are a component of the Nevada Global Change program, which is a collaborative effort among DRI, UNLV and UNR. Dr. Fenstermaker's research focuses on use of remote sensing to address plant ecophysiological issues such as plant response to environmental and anthropogenic stress, ecosystem status and trends, and ecosystem response to global climate change.

Session Topic: *Reducing Soil Erosion, and Why this is Important*

Best suited for middle to high-school students, Dr. Fenstermaker's presentation would cover soil biological crust, demonstrations as to how they respond to precipitation, why concerns for soil erosion are important, and how students can help reduce soil erosion.

Further Info: http://www.dri.edu/People/lynn/

Faculty: Dr. Henry Sun

Summary: Dr. Sun's research focuses on endolithic (inside rock) microorganisms in the Antarctic dry valleys, the Atacama Desert, and Death Valley. His research also ranges to the microbiology of compost tea making and its use as an alternative to fungicide in agriculture and viticulture. Dr. Sun is also studying new approaches to planetary life detection and is partnering with NASA to host Spaceward Bound 2010, a five-day field astro/space biology experience in the Mojave Desert and Death Valley in April 2010 to rehearse the search for extraterrestrial life. Many exotic life forms exist in the Mojave/Death Valley that may also exist on Mars.

Session Topic: *Personal Carbon Emissions and Carbon Footprints*

During the October 24, 2009 Open House at DRI, Dr. Sun conducted an experiment with children wherein the children blew air into a device which then calculated how much of a carbon emission they themselves emitted into the air. Dr. Sun then led students to calculate personal carbon emissions and carbon footprints. Dr. Sun could perform a similar experience for Environmental Youth Summit attendees. Dr. Sun's presentation would be best suited to elementary and middle school students.

Further Info: http://www.dri.edu/People/Henry.Sun/

Faculty: Dr. Kumud Archarya

Summary: As the primary faculty member of the Ecological Engineering group at DRI, Dr. Archarya is focused on conducting fundamental and applied research with the goal of applying engineering principals to understand and reduce adverse effects of human activities on rivers, lakes, wetlands, springs, and estuaries. Dr. Acharya's current research combines basic and applied science from engineering, biology, ecology, and natural sciences for the restoration and construction of aquatic and terrestrial ecosystems. Dr. Acharya's research attempts to combine fundamentals of life science with basic engineering to develop cutting edge tools to solve complex environmental problems. Dr. Archarya's projects involve working with Lake Mead, Devil's Hole, and Walker Lake, as well as studying the climate change impacts on water resources.

Session Topic: *Environmental Conservation*

Best suited for middle to high-school students, Dr. Arharya's presentation could be narrowed as desired by the Environmental Youth Summit committee, and could cover water resources, water quality, and invasive species.

Further Info: http://www.dri.edu/ecological-engineering