

2010 Summer Field Course in Yellowstone National Park

Teachers Afield: Astrobiology in Yellowstone

July 6th through July 16th

Tuition for 3 credits + \$740 (all inclusive) Field Trip Expenses

Course Description: This teacher professional development course (pre- and in-service K-12 teachers) emphasizes project-based learning methods. The field of astrobiology focuses on the origins, evolution, and search for life in the universe. The topic – attractive to students – can be used by K-12 teachers to emphasize many fundamental science concepts in their classrooms. Hot springs in Yellowstone National Park provide examples of the types of environments that would have supported early life on Earth. If extraterrestrial microbial life ever existed on rocky planets like Mars, it would likely have lived in hot springs.

Course includes 7-days of field study in Yellowstone National Park

Course Objectives: At the end of the course, each teacher will have experience with:

- *Field methods focused on the search for bacterial life in and around hot springs
- *Building a virtual field environment (VFE) based on their field experience
- *Experience with systematic data collection and sample characterization and archiving for research purposes
- *Developing classroom activities that combine the VFEs and their research experience, along with data collection and sampling site information

The class will meet on 7/6 at Portland State University - Cramer Hall - Room S9 - from 9AM until 3PM for a pre-field trip meeting and to gain familiarity with field equipment. The class will leave from Portland for West Yellowstone on 7/7 and return 07/14. Teachers should be prepared to hike five to six miles/day for 4-5 days on easy trails carrying light to moderate loads.

Textbook: Buck Institute's Project Based Learning Handbook, available at http://www.bie.org/index.php/site/PBL/pbl_handbook/.

For more information contact Frank D. Granshaw at 503-977-8236 or Sherry Cady at 503-725-3377.

About the instructors * **Dr. Sherry Cady** is the founding and current Editor-in-Chief of the Astrobiology Society's journal *ASTROBIOLOGY*. Her research involves the study of microbial-mineral interactions, which often produce biosediments and biominerals. Most of her field work focuses on the study of how life in extreme environments form fossils, and her field sites include such places as alkaline lakes and hot springs. Her vast experience with geomicrobial sediments of all ages - modern active ecosystems to ancient deposits (>3.3 billion years old)- has allowed her to pursue several projects funded by NASA, NSF, the W.M. Keck Foundation, and the M.J. Murdock Charitable Trust Foundation. * **Frank Granshaw** is a community college earth science and teacher educator. Mr. Granshaw is a principle staff member in Teachers on the Leading Edge (a teacher education program associated with Earthscope) and a former teacher educator for Lawrence Hall of Science and Oregon Museum of Science and Industry. One of his major curriculum development and educational research interests is in the development and use of virtual field environments for undergraduate geoscience and teacher education.