

## UAF Alaska Summer Research Academy Program Directors

### Jeff Drake, Director



Jeff Drake is Director of the Alaska Summer Research Academy. He is also the supervisor and manager of the Geochronology Lab – an argon 40/39 rock dating and research laboratory at the UAF Geophysical Institute.

Jeff has been interested in education and science since his youth. Over the past 37 years he has worked with kids and young adults in educational activities that included wrestling, chess, Japanese culture, biology, computer science, soccer, the game of Go, physics, chemistry, geology, geochronology and teaching.

While attending the Massachusetts Institute of Technology (MIT), Jeff completed two teaching internships at the Boston Children’s Museum; an experience he describes as “life changing” and credits with developing his hands on teaching style and philosophy. He graduated from MIT in 1979 with a BS in Earth and Planetary Science and obtained a secondary teaching certification from the University of Alaska Southeast in 1988.

In 1988-89, Jeff taught 7th – 12th grade science in Grayling, Alaska before accepting employment at the University of Alaska Fairbanks (UAF) the following year. Through his position at UAF, an opportunity arose for Jeff to participate in a 4- year program NSF Partners in Science program designed to link K-12 students and teachers with practicing scientists with the goal of increasing the practice of authentic, project based math and science.

The Partners in Science program began Jeff’s involvement in local elementary school classrooms, and, in particular, his partnership with a 4th – 6th mixed grade classroom at Pearl Creek Elementary. For the past 9 years he has enjoyed his role as a regular part-time guest science teacher to the extent that he continues to volunteer long after the 4-year grant expired.

In addition to his regular duties in the Geochronology Lab, Jeff teaches an introductory geology lab course at UAF for undergraduate education majors and lends his vast knowledge of the sciences, enthusiasm, and support to Science Potpourri each spring and the Alaska Summer Research Academy each summer. “Education and outreach are passions of mine,” says Jeff “and ASRA is one of the best science opportunities for kids I’ve seen.”

### Joan Braddock, Executive Director



Joan Braddock is the dean of the College of Natural Science and Mathematics and has been a faculty member at UAF since 1990. Dr. Braddock’s association with UAF dates back to 1972, when she began an undergraduate degree in Biological Sciences. Dr. Braddock also received her doctorate degree in Oceanography from UAF.

Prior to her current position as dean, Dr. Braddock held a joint faculty position with the Department of Biology and Wildlife and the Institute of Arctic Biology. She served as Interim Director of the Center for Nanosensor Technology. In addition, she has been the Chair of the Department of Biology and Wildlife and has served as Associate Director of the Institute of Arctic Biology.

Dr. Braddock is an environmental microbiologist, interested in microorganisms in the environment, particularly those involved in breaking down petroleum products. She is an internationally recognized expert on biodegradation of petroleum hydrocarbons in cold climates. Her research interests extend to using the ability of microorganisms to break down contaminants to improve technology to clean up contaminants, particularly in cold environments. This strategy, called bioremediation, has had substantial success at remote sites in Alaska. More recently her research interests have extended to studying bioluminescent bacteria isolated from migrating chum salmon.

Dr. Braddock is an enthusiastic teacher. Undergraduate classes she has taught include microbiology and advanced microbiology as well as a class on women and science. She has a long interest and commitment to women participating in science. Dr. Braddock has mentored nearly 20 graduate students during their pursuit of advanced degrees and regularly advises undergraduate and high school student research projects with laboratory-based projects.

The Alaska Summer Research Academy is made possible each year through Dr. Braddock's support in the College of Natural Science and Mathematics, Office of the Dean. She is enthusiastic about the program and the opportunity it provides for pre-college students to pursue academic interests and experience life on the university campus.