

Jennifer E. Kyle

Department of Biology, Portland State University, 1719 SW 10th Ave, Portland, Oregon, 97201
Email: jennifer.kyle@pdx.edu

EMPLOYMENT

2010-present **NASA Astrobiology Institute Postdoctoral Program Fellow**
Portland State University, Portland and NASA Ames Research Center, Moffett Field, CA, USA
Advisors: Kenneth Stedman and Linda Jahnke

2009-2010 **Research Associate**
Portland State University, Portland, USA
Advisor: Kenneth Stedman

EDUCATION

2005- 2009 **Doctor of Philosophy**
Department of Geology, University of Toronto, Canada (specializing in aquatic microbial geochemistry)
Dissertation Topic: *Viral Mineralization and Geochemical Interactions*
Advisor: F. Grant Ferris

2003-2005 **Master of Science**
Department of Geology, University of Georgia, USA (specialized in geomicrobiology)
Thesis: *Mineral-Microbe Interactions and Biomineralization of siliceous sinters and underlying rocks from Jenn's Pools in the Uzon Caldera, Kamchatka, Russia*
Advisor: Paul A. Schroeder

1999-2003 **Bachelor of Science**
Department of Geology, University of Georgia, USA (Minor in Biology)
Senior Thesis: *Bio/litho-facies of Octopus Spring Sinter, Yellowstone National Park, Wyoming, USA*
Advisor: Paul A. Schroeder

RESEARCH EXPERIENCE

2010-current **NAI Postdoctoral Fellow**
Portland State University, Portland, USA and NASA Ames Research Center, Moffett Field, USA
Project: (a) determine the preservation potential of viruses within mineralizing and evaporative environments.
Advisors: Kenneth Stedman and Linda Jahnke

2009-2010 **Research Associate**
Department of Biology, Portland State University, USA
Projects: (a) determine mineralogy of hot springs sediments, (b) isolate viruses with prokaryotic hosts from a low pH hot spring, and (c) develop replacement technique to determine viral abundance using epifluorescence microscopy.
Advisor: Ken M. Stedman

2005-2009 **Research Assistant, doctoral level**
Department of Geology, University of Toronto, Canada
Projects: (a) investigate the presence of viruses in various aquatic environments, (b) determine correlations between viral abundance and geochemical and mineralogical parameters in the natural environment using statistical analysis (i.e. principle component analysis and multiple regression), and (c) establish viral-host relationships using bench top iron saturated microcosms.
Advisor: F. Grant Ferris

2003-2005 **Research Assistant**, master's level
Department of Geology, University of Georgia, USA
Projects: (a) determine mineralogy in rocks forming around high temperature terrestrial hot springs, (b) identify evidence of bacterial preservation within rocks, and (c) identify microbial-mineral interactions.
Advisor: Paul A. Schroeder

2002-2003 **Undergraduate Assistant**, bachelor's level
Department of Geology, University of Georgia, USA
Project: Describing (through elemental, mineralogical, microscopic) siliceous sinter formation in a terrestrial hot spring
Advisor: Paul A. Schroeder

FIELD WORK

Doctoral research, Department of Geology, University of Toronto, Canada
Designed, developed, planned, organized, and implemented projects to determine (a) viral existence, (b) prokaryotic and viral abundances, and (c) geochemical parameters from freshwater lakes, rivers, and marshes (Southern Ontario, Canada), the deep subsurface (Åspö Hard Rock Lab, Sweden), and acid mine drainage (Rio Tinto, Spain and Sudbury, Canada) environments. Collected and treated samples according to the analysis to be conducted.

Master's research, Department of Geology, University of Georgia, USA
Assisted in the design, development, organization, planning and implementation of a project for the collection and investigation of water, microbial mats, and rocks to determine (a) mineral-microbial interactions, (b) morphological microbial remnants, (c) mineralogy, and (d) physiochemical parameters of samples from hot springs in Kamchatka Russia. Collected and treated samples according to the analysis to be conducted.

AWARDS AND HONOURS

2005-2009 University of Toronto Fellowship
2009 Peacock Memorial Award, Walker Mineralogical Club
2008 Outstanding Proposal Certificate, Geological Society of America
2007-2009 NSERC Postgraduate Scholarship
2006-2007 Ontario Graduate Scholarship
2006 H.V. Ellsworth Graduate Fellowship in Mineralogy, Department of Geology, University of Toronto
2005 Geology Graduate Student of the Year, Department of Geology, University of Georgia
2003 Geology Undergraduate Student of the Year, Department of Geology, University of Georgia

ADDITIONAL EDUCATION

2006 Geobiology. University of Southern California, Wrigley Institute for Environmental Studies. June 6th – July 14th, Catalina Island, California (workshop).
2005 Biodiversity, molecular biology, and biogeochemistry of thermophiles, August 20th – August 25th, Petropavlovsk-Kamchatsky, Russia (workshop).
2003 Biocomplexity in shallow-water hydrothermal systems. University of South Florida. May 25th - May 31th, St. Petersburg, Florida. (workshop).

GRANTS (in USD)

2008 Geological Society of America Graduate Student Research Grant, University of Toronto (\$3970)
2007 Student travel grant, Faculty of Arts and Sciences and Department of Geology, University of Toronto (\$500)
2005 National Science Foundation Student Travel Award, University of Georgia (\$850)
2004 Geological Society of America Travel Fund, University of Georgia (\$125)
2004 Wheeler-Watts Research and Travel Grant, University of Georgia (\$1230)
2004 Clay Mineral Society Student Travel Grant (\$500)
2003 Wheeler-Watts Research Grant, University of Georgia (\$1240)

PUBLICATIONS IN REFEREED JOURNALS

Kyle JE, Pedersen K, and Ferris FG. (2008) Virus mineralization at low pH in the Rio Tinto, Spain. *Geomicrobiology Journal*, 25: 338-345.

Kyle JE, HSC Eydal, FG Ferris, K Pedersen. (2008) Viruses in granitic groundwater from 69 to 450m depth of the Äspö hard rock laboratory, Sweden. *ISME*, 2: 571-574.

Kyle JE, Schroeder P, and Wiegel J. (2007) Microbial silicification in siliceous sinters from two terrestrial hot springs in the Uzon Caldera, Kamchatka, Russia. *Geomicrobiology Journal*, 24: 627-641.

Kyle JE, and Schroeder P. (2007) Role of clay minerals on opal transformation in a siliceous sinter: Octopus Spring, Yellowstone National Park, Wyoming, USA. *Clays and Clay Minerals*, 55(2): 189-199.

CONFERENCES WITH PRESENTATION

Kyle JE and Ferris FG. (2009) Bacterial-Viral Interactions and Mineral Precipitation. Geological Society of America. Portland, USA. (poster)

Kyle JE and Ferris FG. (2009) Geochemical Interactions and Viral-Prokaryote Relationships in Freshwater and Acid Mine Drainage Environments. International Society for Environmental Biogeochemistry. Hamburg, Germany. (oral)

Kyle JE and Ferris FG. (2009) Geochemical Interactions and Viral-Prokaryote Relationships in Freshwater Environments. Joint American Geochemical Union. Toronto, Canada. (poster)

Kyle JE and Ferris FG. (2007) Viruses in an acid mine drainage, Rio Tinto, Spain. International Society for Environmental Biogeochemistry. Taupo, New Zealand. (oral)

Kyle JE, Eydal HSC, Ferris FG, and Pedersen K. (2007) Virus-like Particles in the Subsurface. American Society for Microbiology. Toronto, Canada (poster)

Kyle JE, and Schroeder PA. (2005) Mineral Assemblage, Microbe-Mineral Interactions, and Biomineralization of Siliceous Sinters from Jenn's Pools, Uzon Caldera, Russia. International Workshop on Biodiversity Molecular Biology and Biogeochemistry of Thermophiles, 32. Petropavlovsk-Kamchatsky, Russia. (oral)

Kyle JE, Schroeder PA, Crowe D, and Romanek C. (2004) Evidence for biomineralization and preservation of microorganisms in siliceous sinter deposits from the Uzon caldera, Kamchatka, Russia. Geological Society of America *Abstracts with Programs*. 36 (5): 474. Denver, USA. (oral)

Kyle JE, and Schroeder PA. (2004) Sinter mineralogy of a terrestrial hot spring vent, Uzon caldera, Kamchatka, Russia. Clay Minerals Society Annual meeting *Abstract with programs*. Richmond, USA. (poster)

Kyle JE, and Schroeder PA. (2003) Bio/litho-facies of Octopus Spring sinter, Yellowstone National Park, Wyoming. Clay Mineralogical Society Annual Meeting. Athens, USA. (poster)