

Elisa Bergslien

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Professional Experience

- 8/08 – now Associate Professor, Earth Sciences and Science Education Department
Buffalo State College
- 8/02 – 8/08 Assistant Professor, Earth Sciences and Science Education Department
Buffalo State College
- 9/00 – 5/02 Lecturer, Department of Geology and Millard Fillmore College
University at Buffalo

Education

Ph.D., Geological Science, 2002, University at Buffalo, New York.

Dissertation – Effect of Changes in Wettability on Non-Aqueous Phase Liquid (NAPL) Flow in Single Natural Fractures. Principle Advisor: Dr. John Fountain

M.S., Earth and Environmental Science, 1995, University of Rochester, New York.

B.S., Geomechanical Engineering, 1992, University of Rochester, New York.

Books

Bergslien, E. (2012) *An Introduction to Forensic Geoscience*. Wiley-Blackwell. John-Wiley & Sons, Ltd.

Peer-Reviewed Publications

- Bergslien, E.T. (2013) X-Ray diffraction (XRD) and field portable x-ray fluorescence (XRF) analysis and screening of soils, project design: *In Dawson, L. and Pirrie, D. (eds) Environmental and Criminal Geoforensics*, Geological Society, London, Special Publications (*in press*)
- Engelbrecht, W., Bergslien, E.T., Miller, R. and Bush, P. (2009) A Lead object from the Eaton Site, *The Bulletin: Journal of the New York State Archaeological Association*, 124, 69-77.
- Bergslien, E.T., Bush M. A. and Bush, P.J. (2008) Identification of cremains using x-ray diffraction spectroscopy and a comparison to trace element analysis, *Forensic Science International*, 175(2), 218 – 226. doi:10.1016/j.forsciint.2007.07.004.
- Bergslien, E.T. and J.C. Fountain (2008) Examining the utility of epoxy replicas of single, natural fractures in dolostone for visualization experiments, *Hydrogeology Journal*, 16(1), 43-53.
- Bush, P., E.T. Bergslien and M. Bush (2007) Commentary on: Elemental Analysis of Human Cremains Using ICP-OES to Classify Legitimate and Contaminated Cremains. *J Forensic Sci* 2006;51(5):967-973. *Journal of Forensic Science*, 52(3), 742, doi:10.1111/j.1556-4029.2007.00447.
- Bergslien, E.T. and J.C. Fountain (2006) The effect of changes in wettability on two-phase saturated flow in horizontal replicas of single natural fractures, *Journal of Contaminant Hydrology*, 88(3-4),153-180.
- Bergslien, E.T. (2006) Teaching to avoid the CSI effect: Keeping the science in forensic science, *Journal of Chemical Education*, 83(5), 690-691.
- Bergslien, E.T., Fountain, J.C. and Giese, Jr. R. (2004) Characterization of the surface properties of epoxy-type models used for multiphase flow studies in fractured media and creation of a new model, *Water Resources Research*. Vol. 40 (5), W05112.

Invited Presentations

Application of Field Portable X-ray Fluorescence (FPXRF) Spectrometry in Forensic and Environmental Geology. December 20th, 2006, Geoscientists at Crime Scenes, Geological Society of London.

Rocks, Soil and Bones: Characterization of Geologic Trace Evidence. November 2nd, 2006, Edinboro University, guest of Sigma Gamma Epsilon and the EUP Geosciences Department.

Forensic use of x-ray diffraction for the identification of geologic trace evidence. November 29th, 2005, Western New York American Chemical Society Section.

Presentations since 2006 (speaker underlined, students italicized)

Bergslien, E.T. (2012) Geochemical analysis of cremated human remains. *Geological Society of America Abstracts with Programs*, Vol. 44, No.7, p.192.

Bergslien, E.T. (2012) X-ray diffraction (XRD) and x-ray fluorescence (XRF) analysis of cremated human remains. 2012 Geological Association of Canada (GAC®) and Mineralogical Association of Canada (MAC) Joint Annual Meeting, St. John's, Newfoundland and Labrador, Abstracts, Vol. 35, p. 10.

Bergslien, E.T. (2010) An examination of x-ray fluorescence (XRF) and x-ray diffraction (XRD) analysis of soils and the transfer issue. 3rd *International Workshop on Criminal & Environmental Soil Forensics*, 2-4 November 2010, Long Beach, California, USA.

Bergslien, E.T. (2008) Field Portable X-ray Fluorescence (FPXRF) spectrometry of soils and the transfer issue, *FGG 2008 Geoscientific Equipment & Techniques at Crime Scenes. The Geological Society (London), Forensic Geoscience Group.* (Invited)

Bergslien, E.T. and *A. Hovey* (2007) Differentiating soils in western New York using XRF and XRD to build a database, *Geological Society of America Abstracts with Programs*, Vol. 39, No. 6, p. 458.

Gerovac, C.M. and E.T. Bergslien (2007) Forensic and environmental analysis of lead distribution in Erie and Niagara County soils, *Geological Society of America Abstracts with Programs*, Vol. 39, No. 6, p. 458.

Engelbrecht, W. and E.T. Bergslien (2007) Enigma of a lead tooth: composition of lead items from the historic phase of the Eaton Site, *Geological Society of America Abstracts with Programs*, Vol. 39, No. 6, p. 29.

Klinshaw II, R.J., G.D. Smith and E.T. Bergslien (2007) Spectroscopic geo-sourcing of lapis lazuli used in artists' pigment production, *Geological Society of America Abstracts with Programs*, Vol. 39, No. 6, p. 30.

Bergslien, E.T. (2006) XRD and cremated human remains: what is in this urn anyhow?, *Geological Society of America Abstracts with Programs*, 38(7).

*Bergslien, E.T. (2006) X-ray diffraction identification of geologic trace evidence: in the classroom and for the courtroom, *Geological Society of America Abstracts with Programs - Northeastern Section*, 38 (*invited speaker)

Grants Awarded

- 2011 Bergslien, E.T. *International Union of Geological Science (IUGS) Travel Grant*. \$1,200.
- 2006–2007 Bergslien, E.T. *Acquisition of X-ray Diffraction Standards and Materials Necessary for Spectra Submission to the International Centre for Diffraction Data (ICDD)*. Research Council Incentive Award \$6,807
- 2005–2006 Bergslien, E.T. *An Experimental Analysis of Clay Mineral-Organic Compound Interactions*. Research Council Incentive Award \$6,945
- 2004–2007 Bergslien, E.T. *Development of a Novel, Problem-Based Forensic Geology Laboratory for Earth Science and Forensic Chemistry Students Utilizing XRD Analysis*. NSF, \$87,403

Offices and Memberships

- Information Officer and Webmaster for the International Union of Geological Sciences (IUGS) Initiative on Forensic Geology (2011 – 2016).
- Member of the Scientific Working Group for Geological Materials (SWGGE) (2011 - present).
- Founding member of the Laboratory for Forensic Odontology Research at the University at Buffalo.
- Member, American Geophysical Union (AGU), Geological Society of America (GSA)
- Chair of the Faculty of the School of Natural and Social Sciences (2011 - present).