Sarah Marie Trexler

Local Address:
4827 Thunderbird Dr.
Apt 52
Boulder, CO 80303
(828) 773-7370

smtrexle@gmail.com

Education:

- **Bachelor of Science in Chemical Engineering, (August 2004-May 2008)**
  Minor in Biotechnology
  North Carolina State University, Raleigh, North Carolina
  GPA: 3.6 / 4.0
- **Doctor of Philosophy in Chemical and Biomolecular Engineering, (August 2008-present)**
  The University of Colorado at Boulder

Honors:

- Semester Dean's List six out of eight times
- Extra Effort Team Award for Temperature Actuated Microfluidic Valve Senior Design Project (Spring 2008)
- Gamma Beta Phi Honors Society (Spring 2006-present)
- Selected for and completed a Physics lab assistant supervisor position (Fall 2005)

Employment Experience:

- **Novozymes Summer Internship**
  Franklinton, North Carolina (Summer 2007)
  - Characterized and dissolved fermentor build-up in small-scale laboratory experiments to develop large-scale build-up removal protocols
  - Developed 3 large-scale build-up removal protocols and 1 large-scale build-up prevention protocol
  - Researched and suggested more efficient cleaning equipment to implement developed protocols
  - Potential savings from implementing protocols, millions of dollars from discarding contaminated batches and thousands in reducing the down time needed for cleaning fermentors
- **Undergraduate Research** under the supervision of Dr. Robert M. Kelly,
  North Carolina State University, Raleigh (January 2007-May 2007)
  - Assisted in the manual annotation of the *Metallosphaera sedula* (Mse) genome
  - Maintained Mse archaea samples and tracked growth through epifluorescence microscopy
  - Analyzed media composition, specifically ferric and ferrous iron concentrations, using UV spectrophotometry and colormetric assays
  - Prepared additional experiments based on observed data
  - Proposed a microarray sampling protocol to ensure the collection of sufficient mRNA during active iron oxidation by Mse

Poster Presentation:

- Chemolithoautotrophy in *Metallosphaera sedula*
  "Extremely Thermoacidophilic Archaea in Biomining Operations: Development of Functional Genomics Tools and Methodologies." SM Trexler, KS Auernik, and RM Kelly; American Institute for Chemical Engineers National Conference; Salt Lake City, UT (November 2007)

Skills:

- SDS-PAGE & Western Blot
- RT-PCR
- Ion Exchange Chromatography
- 3D Confocal Microscopy
- Peptide synthesis, MALDI, & HPLC
- 2D & 3D Hydrogel Cell Culture
- Tissue Sectioning & Immunostaining
- Microsoft Office Programs
  - (Excel, Word, PowerPoint)

Activities:

- Engineers Without Borders (Spring 2006-Spring 2008)
  - **Vice President** (Fall 2007- Spring 2008)
  - **Secretary** (Fall 2006-Spring 2007)
- The American Institute of Chemical Engineers (Fall 2005-present)
- NC State Jazz Ensemble (Fall 2004-Fall 2006) & Wind Ensemble (Spring 2007- Spring 2008)