KYLE KYBURZ

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EDUCATION

University of Colorado: Boulder, CO

Ph.D. (expected May 2014) in Chemical and Biological Engineering — GPA: 3.59

Purdue University: West Lafayette, IN — GPA: 3.45

Bachelor of Science in Chemical Engineering with Honors — Major GPA: 3.50
Bachelors Thesis, Semester Honors

RELEVANT SKILLS AND TECHNIQUES

Sterile mammalian cell culture
Primary mammalian cell isolation
Photochemistry
Thiol-ene chemistry
Biomaterial engineering
Immunohistochemistry
Bioconjugation
Confocal microscopy
Solid phase peptide synthesis (SPPS)
MALDI-TOF mass spectroscopy
Reverse-phase high-performance liquid chromatography
Rheometry
Live-cell videomicroscopy
ELISA
Matlab, Microsoft Office, Prism, Metamorph, JMP
Minitab

EMPLOYMENT EXPERIENCE

PhD Candidate, University of Colorado at Boulder, Anseth Group — January 2010 – present
PhD Candidate

- Using thiol-ene photopolymerization of peptide-functionalized, PEG-based hydrogels to study mesenchymal stem cell migration and their interaction with synthetic cellular microenvironments

Honors Research, Purdue University, Caruthers Group — August 2008-May 2009
Undergraduate Honors Research Assistant

- Engineered platforms to thermoset epoxy resins
- Designed and performed shear stress analysis on epoxy resins

Fluor Corporation: Greenville, SC: Chemical Technology Center — Summer 2008
Engineering Technician I

- Created and reviewed BFDs, PFDs, P&IDs, and equipment lists for polysilicon plant
- Sized heat exchangers, vessels and lines

Research Experience for Undergraduates, Purdue University, Hua Group — January-May 2008
Undergraduate Research Assistant

- Performed independent study on BDE-209 concentration levels in televisions using gas chromatography
- Compiled and wrote two journal article summaries for PBDE and BDE-209

Eli Lilly & Co: Indianapolis, IN: Radiation Safety and Health — Summer 2006
Summer Replacement Student

- Created Visual Basic Program for Health and Safety for all Lilly Research Labs in Indianapolis and Greenfield

LEADERSHIP AND SERVICE ACTIVITIES

Pinhead Institute, Smithsonian Affiliate Outreach Presenter	Fall 2013
President and Founder of Society for Biomaterials Student Chapter	2013-present
Society for Biomaterials National Chapter	2013-present
American Society for Cell Biology	2011-2012
AICHE: American Institute of Chemical Engineering, local and national chapter	2006-2009
Engineering Without Borders	2006-2007
Middle and High School State Science Fair judge	Winter 2006
Biochemistry Club	2005-2006
Boys and Girls Club, Tutoring	2005

TEACHING AND MENTORING EXPERIENCE

Lead Graduate TA for Chemical and Biological Engineering, University of Colorado at Boulder 2012-2013

- Organized graduate student forums to discuss pedagogy and career development
- Consulted with each advanced TA to develop individualized teaching improvement plans
- Performed research on the prevalence and interest in active learning on the CU Boulder campus

Guest Lecturer, University of Colorado at Boulder Spring 2012

- Biomaterials: prepared and presented on fundamental skin regeneration engineering principles, skin biology, and current and future clinical medical devices and products

Undergraduate Research Mentor 2011-present

- Mentored undergraduate students in lab technique, experimental design, and presentation skills
- Jared Young (Senior Thesis), Bruce Han, Emi Kiyotake, Dylan Donohue

Advanced Teaching Assistant, University of Colorado at Boulder, CHEN 3210 Heat Transfer Fall 2011

- Taught weekly recitation and office hours
- Guest lectured twice, developed homework questions, graded exams
- FCQ: 5.1/6.0

Teaching Assistant, University of Colorado at Boulder, CHEN 4520 Chemical Process Synthesis Fall 2009

- Held weekly office hours
- Graded homework and Final Projects

Teaching Assistant, Purdue University, CHE 378 Heat and Mass Transfer Spring 2009

- Co-led laboratory session on fundamentals of heat exchangers

CONFERENCE PRESENTATIONS

Kyburz KA, Anseth KS. *Peptide-Functionalized PEG Hydrogels to Study and Promote Mesenchymal Stem Cell Motility in Three Dimensions*. Oral Presentation at the Polymer Networks Group, August 2012, Jackson Hole, WY.

Hogan EA, **Kyburz KA**, Monteblanco A, Szczepanski C, Tsai J. *Active Learning at the University of Colorado at Boulder*. Poster Presentation at the Lead Network Capstone Poster Session, April 2013, Boulder, CO.

Kyburz KA, Young JA, Anseth KS. *Isotropic and Directed hMSC Migration within Three-dimensional, Peptide-functionalized PEG Hydrogels*. Poster Presentation at the Society for Biomaterials, April 2013, Boston, MA.

Kyburz KA, Anseth KS. *Photopolymerized Peptide Functionalized PEG Hydrogels to Direct hMSC Migration and Invasion.* Poster Presentation at the IUCRC Photopolymerization Meeting, January 2014, Boulder, CO.

PUBLICATIONS

Kyburz KA, Anseth KS. "Three-dimensional hMSC Motility within Peptide-Functionalized PEG-Based Hydrogels of Varying Adhesivity and Crosslinking Density". Acta Biomaterialia. 2013 9(5):6381-92.

Shultz, KM, **Kyburz KA**, Anseth KS. "Microrheology Provides Insight into Local Degradation and Manipulation of Three-Dimensional hMSC During Cell Motility". *In preparation.*