1935 Grove St.
Boulder, CO, 80302

Daniel McKinnon

(303) 518 8943
daniel.mckinnon@colorado.edu

Relevant Skills

Organic synthesis, bioconjugation, polymer engineering, photochemistry, NMR, solid-phase peptide synthesis, reverse phase HPLC, MALDI-TOF mass spectrometry, UV/VIS, rheology, aseptic cell culture, scanning electron microscopy, confocal microscopy, Mathematica, MATLAB, image processing, plate reader assays

Education

University of Colorado, Boulder, CO. *August 2010 – present*
Ph.D. candidate in Chemical & Biological Engineering (M.S. awarded May 2012)
Dynamically Tunable Hydrogel Materials for Modeling Neural Networks
Adviser: Kristi Anseth

University of California at Santa Barbara, Santa Barbara, CA. *August 2009 – May 2010*
Ph.D. candidate in Biomolecular Science & Engineering
Degradable Coacervates for Protein Delivery
Adviser: Galen Stucky

University of Colorado, Boulder, CO. *August 2005 – May 2009*
B.A. Physics *Magna Cum Laude*, B.A. Biochemistry, minors in Math and French
The Acoustics of a Tenor Recorder
Adviser: John Price

Semester at Sea, Worldwide. *August 2007 – December 2007*
Traveled to 10 countries on 4 continents while studying each one's unique history

Publications

- D.D. McKinnon, A.M. Kloxin, & K.S. Anseth "Synthetic Hydrogel Platform for Three-Dimensional Culture of Embryonic Stem Cell-Derived Motor Neurons," *Biomaterials Science* (2013).

Research Presentations

- D.D. McKinnon, R.D. Moghe, & K.S. Anseth; "Controlled Guidance of Spinal Motor Axons through Synthetic Click Hydrogels" Poster Presentation, Society for Biomaterials, Boston, MA, April 11-12, 2013.

- D.D. McKinnon & K.S. Anseth; "Synthetic Platform for 3D Culture of ES-Derived Motor Neurons" Oral Presentation, NIH Pharmaceutical Biotechnology Training Program Retreat, Breckenridge, CO, September 24, 2012

- D.D. McKinnon & K.S. Anseth; "Synthetic Platform for 3D Culture of ES-Derived Motor Neurons" Oral Presentation, Polymer Networks 2012, Jackson, WY, August 12, 2012

- D.D. McKinnon, M. Peljto, & K.S. Anseth; "Dynamically Tunable Hydrogel Materials for Modeling Axon Guidance" Oral & Poster Presentation, Keystone Tissue Engineering & Regenerative Medicine Symposium, Breckenridge, CO, April 3, 2012

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- D.D. McKinnon & K.S. Anseth; "Dynamically Tunable Hydrogel Materials for Modeling Neural Networks" Oral Presentation, NIH Pharmaceutical Biotechnology Training Program Retreat, Breckenridge, CO, October 29, 2011

- D.D. McKinnon & K.S. Anseth; "Dynamically Tunable Hydrogel Materials for Modeling Neural Networks" Oral Presentation, StAR Symposium, Boulder, CO, October 3, 2011

- D.D. McKinnon, D. Nair, N. Cramer, & C.N. Bowman "Controlled Release of Small Molecules From Shape Memory Polymer Networks" Poster Presentation, Bowman/Anseth Group Poster Session, Boulder, Colorado, December 10, 2010

Work Experience

University of Colorado Boulder, CO *May 2010 – Present*

Research Rotation in the Bowman Lab
- Studied small molecule release from shape memory polymers
- Exploited orthogonal chemistries to dynamically alter material mechanical properties upon exposure to UV light

Research Assistant in the Schwartz Lab
- Patterned silicon surfaces with self-assembled monolayers (SAMs) of different surface chemistries
- Imaged the SAMs using single-molecule TIRF microscopy and analyzed with Mathematica

SomaLogic Boulder, CO *May 2009 – August 2009*

Research Intern
- Validated and optimized HPLC purification of therapeutic DNA aptamers
- Developed a process for the PEGylation of one target aptamer to reduce renal clearance

Harvard Medical School Boston, MA *May 2007 – August 2007*

Research Assistant in the Sorger Lab
- Investigated the Epidermal Growth Factor (EGF) signaling pathway through fluorescence microscopy and other standard biological techniques
- Helped integrate data from the EGF pathway into a Systems Biology model of the cell

Three Elements Timberworks Louisville, CO *May 2005 – August 2005*

Carpenter
- Built load-bearing timber frames for high-end mountain homes

Teaching Experience

University of Colorado Boulder, CO

CHEN1000: Creative Technology (Advanced TA) *August 2012 – December 2012*
- Developed and presented a biomaterials unit for this large technology course for non-scientists and engineers and prepared week recitations on current and exciting aspects of energy and biotechnology that were delivered by either me or one of my four undergrad TAs.

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CHEN3220: Chemical Engineering Separations *January 2010 – May 2010*

PHYS1120: Electricity and Magnetism *January 2008 – May 2008*

Awards and Activities

- CU Mini-Med School
- Redeveloped Anseth Group website in Drupal-based content management system
- NIH Leadership in Pharmaceutical Biotechnology Training Grant awardee 2012-2013
- Developed a new process for scaling up the production 3-(4-benzylamino)-1,2,4,5-tetrazine and commercialized the molecule through a distribution agreement with Jena Bioscience
- StAR Symposium winner 2011
- NIH Pharmaceutical Biotechnology Training Grant awardee 2011-2012
- CU Dean's Outstanding Merit Fellowship 2010
- UCSB Regents' Special Fellowship
- Physics Trade Award for excellence in machining
- Phi Kappa Beta
- Sigma Pi Sigma
- Two-time UROP Grant awardee

Students Mentored

- Gillian Kopp *Examining the Bioorthogonality of Different PEG Hydrogel Crosslinking Chemistries*; entering 2013 Corden Regional Science Fair
- Ravi Moghe *Physical Guidance of Motor Neuron Axon Outgrowth*; awarded UROP Research Assistantship Spring 2012, awarded HHMI Bioscience UROP research grant Fall 2012-Spring 2013
- Sophie Harrington *The Effect of Substrate Modulus on Mouse Embryonic Stem Cell Differentiation*; 2nd place Corden Regional Science Fair in Chemistry or Materials 2012, Currently at Cambridge University
- John Isenberger *Protein Release from Synthetic Hydrogels*; 2nd place Corden Regional Science Fair in General Engineering 2012
- Tutored many student athletes in a variety of scientific disciplines through my employment with the CU Athletic Department

Language and International Experience

Spent Fall 2005 through Spring 2006 living in Switzerland working in carpentry, winemaking, and food service while gaining proficiency in French. Also participated in a humanitarian vehicle-delivery project traveling overland from Switzerland to Senegal through North Africa.

Hobbies

Skiing, bicycle racing (Colorado State Champion in both Mountain Biking and Cyclocross, 2004), adventure motorcycling (Trans-America Trail, 2009), basketball (IM Summer League Champion, 2012), science history, climbing, gardening.