

Paige J. LeValley

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Education

Ph.D. Candidate in Chemical Engineering

Fall 2015 - Present

University of Delaware, Newark, DE
Department of Chemical and Biomolecular Engineering

M.S. in Chemical Engineering

Summer 2015

University of Wyoming, Laramie, WY
Department of Chemical Engineering

B.S. in Chemical Engineering

Summer 2013

University of Wyoming, Laramie, WY
Department of Chemical Engineering

Research Experience

Graduate Research Assistant

Fall 2015 - Present

University of Delaware, Department of Chemical and Biomolecular Engineering
Advisor: Dr. April M. Kloxin

Development a multimodal responsive hydrogel microparticle system for controlled and tailorable delivery of protein therapeutics towards development of a personalized medicine platform.

Graduate Research Assistant

Fall 2013 – Summer 2015

University of Wyoming, Department of Chemical Engineering
Advisor: Dr. John Oakey

Investigated poly(ethylene glycol) (PEG) hydrogels in combination with microfluidic techniques to create topology complex photodegradable capture surfaces and miniaturized biosensors using *in situ* photopolymerization.

Undergraduate Research Assistant

Summer 2012 – Summer 2013

University of Colorado Boulder, Department of Chemical Engineering
Advisor: Dr. Kristi Anseth and Dr. John Oakey

Studied the use of photodegradable PEG hydrogel capture surfaces for the specific capture and release of rare mammalian cells from whole blood toward enhanced diagnostic platforms.

Undergraduate Research Assistant

Summer 2011 – Spring 2012

University of Wyoming, Department of Chemical Engineering
Advisor: Dr. John Oakey

Investigated the formation of microfluidic devices using Silastic 7-4860 Biomedical Grade LSR (Dow Corning) and characterized the material properties of devices made with this material.

Research Skills

Material Synthesis and Characterization

End-group modification of commercial polymers, solid-phase peptide synthesis, organic small molecule synthesis, click chemistry, ¹H NMR, mass spectrometry (ESI), HPLC, UV-Vis spectrometry, rheology, profilometry, tensile stress/strain testing,

Microfluidic Techniques

Formation of microfluidic devices using PDMS, oxygen plasma bonding, photolithography, and droplet formation

Cell Culture

Mammalian cell culture, cell viability assays, enzymatic assays (ELISA)

Publications

- Fischer, P., *et al.* *Photodegradable Hydrogels for the Selective Capture and Release of Mammalian Cells*. ISA, 2014, pp. 62 – 67.
 - LeValley, P., Hansen, A., Laursen, C., Frick, C., and Oakey, J., 2016. *High Aspect Ratio Soft Lithography via High Tensile Strength Poly(dimethylsiloxane)*. Manuscript in Preparation.
 - LeValley, P., Noren, B., Gatlin, J., Oakey, J., 2016. *In situ Photopolymerization for the Fabrication of Functional Poly(ethylene glycol) Hydrogel Microstructures*. Manuscript in Preparation.
 - LeValley, P., Tibbit, M., Noren, B., Kloxin, A., Oakey, J., Anseth, K., 2016. *Photodegradable Poly(ethylene glycol) Hydrogel Surfaces for the Capture and Release of Rare Cells*. Manuscript in Preparation.
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Conference Presentations

- LeValley, *et al.* Responsive hydrogels for tailored release of protein therapeutics. Oral Presentation at: 254th ACS National Meeting; 2017 August 20 – 24: Washington, DC.
 - Fischer, P., Xia, B., and Oakey, J., *Poly(ethylene glycol) Based Hydrogels for On-chip Microsensors*. Oral Presentation at: 2014 AIChE Annual Meeting; 2014 November 16-21: Atlanta, GA.
 - Fischer, P., *et al.*, *Antibody Functionalized Micropatterned Hydrogels*. Poster Presented at: The 18th Annual Conference on Miniaturized Systems for Chemistry and Life Sciences; 2014 October 26-30: San Antonio, TX.
 - Fischer, P., *et al.*, *Photodegradable Hydrogels for Selective Capture and Release of Rare Mammalian Cells*. Poster presented at: SFB 2014 Annual Meeting and Exposition; 2014 Apr 16-19; Denver, CO.
 - Fischer, P., *et al.*, *Photodegradable Hydrogels for the Selective Capture and Release of Mammalian Cells*. Oral Presentation at: 51st Annual Rocky Mountain Bioengineering Research Symposium; 2014 Apr 4; Denver, CO.
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Honors and Awards

Phillip and Ruth Evans Chemical Engineering Fellowship, 2017

Wyoming NSF EpSCoR Wyoming Women in Science and Engineering Travel Grant, Spring 2014 and Fall 2014

Outstanding Student Presentation, Second Place at the 51st Annual Rocky Mountain Bioengineering Research Symposium, Spring 2014

Minority and Women Graduate Assistantship Award, Fall 2013 – Fall 2014

Wyoming Engineering Society Chemical Engineer of the Year Award, Spring 2013

Tau Beta Pi Honor Society, University of Wyoming, Inducted Fall 2012

Academic All Mountain West and Mountain West Scholar Athlete, University of Wyoming, 2011 – 2013

Teaching and Communication Experience

Radio Show Host

University of Delaware Rise and Science (91.3 WVUD)

Brings the latest news in science to the local community through easy to understand interviews with scientists and reports on how science effects our everyday lives.

Tutor

University of Wyoming, Tau Beta Pi Honor Society and University of Wyoming Athletics

Volunteer and Leadership Experience

Colburn Club Outreach Chair, Fall 2016 - Present

Science Night Volunteer, Sussex County, DE, Fall 2016

Wild Science Volunteer, Jackson Hole, WY, Spring 2015

Captain of distance swimming group, University of Wyoming, 2012 - 2013