

Katherine L. Wiley

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EDUCATION

- Ph.D. Candidate in Chemical Engineering, NSF IGERT Fellow** Fall 2014-present
University of Delaware, Newark, DE
Department of Chemical and Biomolecular Engineering
- B.S. in Chemical Engineering, Magna Cum Laude** Fall 2010-Spring 2014
Bucknell University, Lewisburg, PA
Department of Chemical Engineering
- University of Queensland**, Brisbane, Australia (Study abroad) Spring 2013
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RESEARCH EXPERIENCE

- Graduate Research Assistant and NSF IGERT Fellow** Fall 2014-present
University of Delaware, Department of Chemical and Biomolecular Engineering
Thesis Advisor: Dr. April M. Kloxin
- Developing a 3D synthetic hydrogel extracellular matrix (ECM) mimic to understand cell-ECM interactions and their influence on disease progression
 - Synthesizes and characterizes tissue mimetic hydrogel materials for 3D cell encapsulation that are capable of responding to external stimuli during cell culture
 - Evaluates cell compatibility of materials, characterizes cell response to 3D cell culture conditions
- Material/Synthetic Skills:** Peptide synthesis, polymer synthesis, organic small molecule synthesis, rheology, dynamic mechanical analysis, mass spectrometry, UV-vis spectrometry, thiol-ene chemistry, HPLC, ¹H-NMR
- Cell Culture Skills:** Mammalian and bacterial cell culture, 3D cell culture, immunostaining, protein expression and purification
- Undergraduate Research Assistant** Spring 2011-Spring 2014
Bucknell University, Department of Chemical Engineering
Advisor: Dr. Erin L. Jablonski
- Designed and fabricated milli-scale devices for controlled emulsion formation and separation for efficient liquid-liquid extraction of model dye
 - Developed a mathematical model of mass transfer in milli-scale liquid-liquid extraction system
- Skills:** Matlab, UV-vis spectroscopy, HPLC, photolithography, Solidworks, laser cutting
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PROFESSIONAL EXPERIENCE

- Research Science Intern** Fall 2016
Fraunhofer, Leipzig, Germany
Institute for Cell Therapy and Immunology (IZI) and Institute for Ceramic Technologies and Systems (IKTS)
Advisor: Julianne Pasold
- Developed and evaluated immunobiological test procedures for bioceramic materials for dentistry and endoprosthesis
- English Teacher** Summer 2014
One. School of English, Torroella de Montgrí, Spain
- Introduced English to Catalan, Spanish, and Italian speaking students aged 5-7
- Process Engineering Intern** Summer 2012
Corning Incorporated, Corning, NY
Corning Environmental Technologies, Division Engineering
- Designed, executed, analyzed, and presented experiments at the interface of R&D and production
 - Six Sigma yellow belt certified

PUBLICATIONS

E Preuße, S Kurz, M Johannes, S Begand, K Wegner, **K Wiley**, J Pasold, J Opitz, "Can an integral forming immunoassay be the next-generation standard test to evaluate the long-term integration of implant materials?," *Journal of Medical Materials and Technologies*, In preparation.

AWARDS & HONORS

NSF IGERT Fellow	Spring 2015-present
Graduated Magna Cum Laude , Bucknell University	Spring 2014
Tau Beta Pi Honor Society , Bucknell University	Inducted Fall 2013
Alpha Lambda Delta Honor Society , Bucknell University	Inducted Spring 2011

TEACHING & COMMUNICATION EXPERIENCE

Radio Show Host Rise and Science (93.1 WVUD) , Newark, DE	Spring 2016-present
<ul style="list-style-type: none">• Interviews local and visiting scientists about their work and its importance to society• Reports on the latest science news and demystifies science we see in everyday life	
Teaching Assistant for Vector and Tensor Analysis, Eng. Probability and Statistics (grad courses) University of Delaware , Department of Chemical and Biomolecular Engineering	Spring 2016
Teaching Assistant for Chemical Engineering Principles, Engineering Athletics, Materials Science Bucknell University , Department of Chemical Engineering	Spring 2012-Fall 2013
Instructor for 'Edible Science' SEA Summer Children's Program , Salem State University, Salem, MA	Summer 2013

LEADERSHIP EXPERIENCE

Vice President, Colburn Club , University of Delaware	Fall 2016-present
<ul style="list-style-type: none">• Previous positions: 2nd Year Representative (2015-2016), At-large Representative (2014-2015)• Student organizer of chemical engineering graduate student recruitment• Plans and runs various social, academic, and professional development events	
Secretary, AIChE Student Chapter , Bucknell University	Fall 2013-Spring 2014
<ul style="list-style-type: none">• Assisted in preparation for student travel to conferences and events• Served as liaison between undergraduate students and faculty	
Social Chair, Tau Beta Pi Student Chapter , Bucknell University	Fall 2013-Spring 2014
<ul style="list-style-type: none">• Planned and oversaw annual Tau Beta Pi student-faculty dinner	

PRESENTATIONS & SEMINARS (presenters bolded)

Oral presentations:

KL Wiley, "Life as a PhD student in chemical engineering," Department of Chemical Engineering, Bucknell University, April 2017, Lewisburg, PA. **Invited.**

Poster presentations:

KL Wiley, EL Jablonski, "Efficient liquid liquid extraction by emulsion formation and separation in robust milli-fluidic devices," AIChE Annual Meeting, November 2013, San Francisco, CA.

BL Goldsmith, **KL Wiley**, EL Jablonski, "Droplet based liquid-liquid extraction of a model small molecule pharmaceutical agent in a milli-fluidic device," AIChE Annual Meeting, October 2011, Minneapolis, MN.

VOLUNTEER EXPERIENCE & EXTRACURRICULAR ACTIVITIES

Colburn Outreach Committee (founding member) , University of Delaware	Spring 2015-present
Ballroom Dance Team Member , University of Delaware	Spring 2015-Fall 2016
Science Night Volunteer , Sussex County, DE	Spring 2015