

APRIL M. KLOXIN

Chemical and Biomolecular Engineering,
Materials Science and Engineering, & Biomedical Engineering (affiliate)
University of Delaware
150 Academy Street, Colburn Laboratory, Newark, DE 19716

email: akloxin@udel.edu
phone: (302) 831-3009
fax: (302) 831-1048
web: AprilKloxinGroup.org

Education

Ph.D. in Chemical Engineering

May 2009

Dissertation: "Photolabile hydrogels for dynamic tuning of physical and chemical properties to probe cell-cell and cell-material interactions"

Research advisor: Prof. Kristi S. Anseth

Department of Chemical and Biological Engineering, University of Colorado, Boulder, CO

M.S. in Chemical Engineering

Dec. 2004

Thesis: "Synthesis and characterization of antibacterial PEG hydrogels"

Research advisors: Prof. Richard J. Spontak and Prof. Stuart L. Cooper

Department of Chemical and Biomolecular Engineering, North Carolina State University, Raleigh, NC

B.S. in Chemical Engineering, Summa Cum Laude, University Scholar

May 2001

Department of Chemical Engineering, North Carolina State University, Raleigh, NC

Professional Experience

Assistant Professor

June 2011-

Departments of Chemical and Biomolecular Engineering and Materials Science and Engineering,
University of Delaware, Newark, DE

HHMI Postdoctoral Research Associate

2009-2011

Research advisor: Prof. Kristi S. Anseth

Collaborators: Prof. Vivek Balasubramaniam, Prof. Leslie Leinwand, and Prof. Bradley B. Olwin

Howard Hughes Medical Institute and the University of Colorado, Boulder, CO

Graduate Research Assistant

Chemical and Biological Engineering, University of Colorado, Boulder, CO

2005-2009

Chemical and Biomolecular Engineering, North Carolina State University, Raleigh, NC

2002-2004

Process Engineer

2001-2002

Fibermaking Process Development, Corning, Inc., Wilmington, NC

Honors and Awards

- University of Delaware Research Foundation Strategic Initiatives Award 2014
- Pew Scholar in Biomedical Sciences 2013
- National Science Foundation CAREER Award 2013
- Burroughs Wellcome Fund Collaborative Research Grant & UC-Davis Visiting Scholar 2013
- University of Delaware Research Foundation Award 2012
- Western Association of Graduate Schools Innovation in Technology Award 2010
- Max S. Peters Outstanding Graduate Research Award 2009
- Excellence in Graduate Polymer Research Award, ACS Polymer Chemistry 2008
- US Department of Education's GAANN Fellowship 2005-2009
- NASA Graduate Student Research Program Fellowship 2005-2008

Affiliations

Biomedical Engineering, University of Delaware	2013-
Systems Biology of Cells in Engineered Environments (SBE2), NSF IGERT Program	2012-
Center for Bioinformatics & Computational Biology (CBCB), Delaware Biotechnology Institute (DBI)	2011-
Chemistry-Biology Interface (CBI) Program, University of Delaware	2011-

Publications (*Google Scholar*: http://scholar.google.com/citations?user=MVdc_X0AAAAJ&hl=en)

Publications from work performed at the University of Delaware (June 2011-present)

1. LA Sawicki, **AM Kloxin**, “Design of thiol–ene photoclick hydrogels using facile techniques for cell culture applications,” *Biomaterials Science*, **2**, 1612-1626, 2014. DOI: 10.1039/c4bm00187g. *Special Issue: Stem cell-materials interactions.*
Featured on the front cover of the issue and in SLJ Michel, “Report from the Seventh Annual Frontiers at the Chemistry Biology Interface Symposium,” ACS Chem. Biol. **9**, 1915–1917, 2014.
2. PM Kharkar, **AM Kloxin**, KL Kiick, “Dually degradable click hydrogels for controlled degradation and protein release,” *Journal of Materials Chemistry B*, **2**, 5511-5521, 2014. DOI: 10.1039/C4TB00496E.
Featured on the front cover of the issue
3. ME Smithmyer, LA Sawicki, AM Kloxin, “Hydrogel scaffolds as in vitro models to study fibroblast activation in wound healing and disease,” *Biomaterials Science*, **2**, 634-650, 2014. DOI: 10.1039/C3BM60319A *Special Issue: Emerging Investigators*
Featured as one of the 10 most downloaded papers for Biomaterials Science in 2014
4. MS Rehmann, AC Garibian, **AM Kloxin**, “Degradable thiol–ene hydrogels for protein release,” *Macromolecular Symposia*, **329**, 58-65, 2013. DOI: 10.1002/masy.201200133
5. PM Kharkar, KL Kiick, **AM Kloxin**, “Designing hydrogels for orthogonal control of degradable cell microenvironments,” *Chemical Society Reviews*, **42**, 7335-7372, 2013. DOI: 10.1039/C3CS60040H
6. MS Rehmann, **AM Kloxin**, “Tunable and dynamic soft materials for three-dimensional cell culture,” *Soft Matter*, **9**, 6737-6746, 2013. DOI: 10.1039/C3SM50217A *Special Issue: Emerging Investigators*
Featured as one of the most downloaded papers for Soft Matter in 2013

Publications from work performed at prior institutions

7. MW Tibbitt, **AM Kloxin**, LA Sawicki, KS Anseth, “Mechanical properties and degradation of chain and step polymerized photodegradable hydrogels,” *Macromolecules*, **46**, 2785-2792, 2013. DOI: 10.1021/ma302522x
8. DD McKinnon, **AM Kloxin**, KS Anseth, “Synthetic hydrogel platform for three-dimensional culture of embryonic stem cell-derived motor neurons,” *Biomaterials Science*, **1**, 460-469, 2013. DOI: 10.1039/C3BM00166K
9. MW Tibbitt, **AM Kloxin**, KS Anseth, “Modeling controlled photodegradation in optically thick hydrogels,” *Journal of Polymer Science Part A: Polymer Chemistry*, **9**, 1899-1911, 2013. DOI: 10.1002/pola.26574
10. **AM Kloxin**, KJR Lewis, CA DeForest, MW Tibbitt, V Balasubramaniam, and KS Anseth, “Responsive culture platform to examine the influence of microenvironmental geometry on cell function in 3D,” *Integrative Biology*, **4**, 1540-1549, 2012. DOI: 10.1039/C2IB20212C
11. H Wang, SM Haeger, **AM Kloxin**, LA Leinwand, KS Anseth, “Redirecting valvular myofibroblasts into dormant fibroblasts through light-mediated reduction in substrate modulus,” *PLoS One*, **7**, e39969, 2012. DOI:10.1371/journal.pone.0039969

12. MW Tibbitt, BW Han, **AM Kloxin**, KS Anseth, "Synthesis and application of photodegradable microspheres for spatiotemporal control of protein delivery," *Journal of Biomedical Materials Research Part A*, **100**, 1647-1654, 2012. DOI: 10.1002/jbm.a.34107
13. **AM Kloxin**, MW Tibbitt, and KS Anseth, "Synthesis of photodegradable hydrogels as dynamically tunable cell culture platforms," *Nature Protocols*, **5**, 1867-1887, 2010.
14. MW Tibbitt, **AM Kloxin**, KU Dyamenahalli, and KS Anseth, "Controlled two-photon photoerosion of PEG hydrogels to study and manipulate subcellular interactions on soft materials," *Soft Matter*, **6**, 5100-5108, 2010.
15. **AM Kloxin**, CJ Kloxin, CN Bowman, and KS Anseth, "Mechanical properties of cellularly responsive hydrogels and their experimental determination," *Advanced Materials*, **22**, 3484-3494, 2010.
16. **AM Kloxin**, MW Tibbitt, AM Kasko, JA Fairbairn, and KS Anseth, "Tunable hydrogels through controlled photodegradation for external manipulation of the cell microenvironment," *Advanced Materials*, **22**, 61-66, 2010.
17. **AM Kloxin**, JA Benton, and KS Anseth, "In situ elasticity modulation with dynamic substrates to direct cell phenotype," *Biomaterials*, **33**, 1-8, 2010.
18. **AM Kloxin**, AM Kasko, CN Salinas, and KS Anseth, "Photolabile hydrogels for dynamic tuning of physical and chemical properties," *Science*, **324**, 59-63, 2009.
Highlighted in SM Jay and WM Saltzman, "Shining light on a new class of hydrogels," *Nature Biotechnology*, **27**, 543-544, 2009.
MP Lutolf, "Spotlight on hydrogels," *Nature Materials*, **8**, 451-453, 2009.
M Gross, "Light-guided hydrogels direct cell growth," *Chemistry World*, April 2009.
19. VS Khire, **AM Kloxin**, CC Clouch, KS Anseth, and CN Bowman, "Synthesis, characterization and cleavage of linear polymers attached to silica nanoparticles formed using thiol-acrylate conjugate addition reactions," *Journal of Polymer Science A: Polymer Chemistry*, **46**, 6896-6906, 2008.
20. CR Nuttelman, **AM Kloxin**, and KS Anseth, "Temporal changes in PEG hydrogel structure influence human mesenchymal stem cell proliferation and matrix mineralization," *Advances in Experimental Medicine and Biology: Tissue Engineering*, **585**, 135-149, 2006.

Spotlights

AM Kloxin and KS Anseth, "Protein gels on the move," *Nature*, **454**, 705-706, 2008 [News & Views].

Book Chapters

LA Sawicki, **AM Kloxin**, "Biomaterials: Controlling properties over time to mimic the dynamic ECM" in *Mimicking the Extracellular Matrix: The Intersection of Matrix Biology and Biomaterials*. Editors: W. Murphy, G. Hudalla. Royal Society of Chemistry. 2015. (In Press)

Patents

MULTIMODE DEGRADABLE HYDROGELS FOR CONTROLLED THERAPEUTIC RELEASE
Provisional Application # 61/984,901
Filed April 28, 2014

PHOTODEGRADABLE GROUPS FOR TUNABLE POLYMERIC MATERIALS
Application # 13/725,674
Filed December 21, 2012

Presentations

Invited and Contributed Presentations (presenting author bolded)

June 2011-present

- LA Sawicki, **AM Kloxin**, “Design of hydrogels as synthetic extracellular matrix mimics using modular building blocks and facile techniques,” ACS Spring National Meeting, March 2015, Denver, CO. *Invited*.
- MS Rehmann, PM Kharkar, **AM Kloxin**, “Responsive materials for the directing and delivering stem cells and therapeutics,” ACS Spring National Meeting, March 2015, Denver, CO. *Invited*.
- **PM Kharkar**, AM Kloxin, KL Kiick, “Reducing-environment sensitive synthetic hydrogels for controlled drug delivery,” ACS Spring National Meeting, March 2015, Denver, CO. *Selected for Excellence in Graduate Polymer Research Symposium*.
- **AM Kloxin**, “Designing responsive biomaterials for controlling the cell environment,” Department of Chemical and Biomolecular Engineering, Colorado State University, February 2015, Fort Collins, CO. *Invited*.
- LA Sawicki, PM Kharkar, **AM Kloxin**, “Responsive materials for controlling cellular microenvironments,” Polymer Chemistry Zing Conference, December 2014, Cancun, Mexico. *Invited*.
- LA Sawicki, PM Kharkar, **AM Kloxin**, “Nanostructured and dynamic biomaterials for controlling the cell microenvironment,” BioNanoTechnology Plenary Session, AIChE Fall National Meeting, November 2014, Atlanta GA. *Invited*.
- **LA Sawicki**, AM Kloxin, “*Tunable Hydrogels to Understand the Role of the Microenvironment in Regulating Breast Cancer Dormancy and Recurrence*,” AIChE Fall National Meeting, November 2014, Atlanta, GA. *Contributed*.
- LA Sawicki, MS Rehmann, PM Kharkar, **AM Kloxin**, “Designing dynamic biomaterials for controlling cellular microenvironments,” Seventh Annual Frontiers at the Chemistry-Biology Interface Symposium, May 2014, Baltimore, MD. *Invited*.
- **AM Kloxin**, “Materials that mimic biology towards understanding and treating aging & disease and recruiting the next generation of engineers & scientists,” *People, Projects, and Partners* series, University of Delaware, May 2014, Newark, DE. *Invited*.
- **AM Kloxin**, “Designing dynamic biomaterials for controlling the cell environment,” Department of Chemical Engineering and Materials Science, Stevens Institute of Technology, April 2014, Hoboken, NJ. *Invited*.
- MS Rehmann, PM Kharkar, **AM Kloxin**, “Degradable hydrogels for directing mesenchymal stem cell differentiation towards enhanced ligament regeneration,” Society for Biomaterials National Meeting, April 2014, Denver, CO. *Invited*.
- MS Rehmann, **AM Kloxin**, “Promoting ligamentogenic differentiation of mesenchymal stem cells in controlled microenvironments,” ACS Spring National Meeting, March 2014, Dallas, TX. *Contributed*.
- **AM Kloxin**, “Designing dynamic biomaterials for controlling the cell environment,” HHMI and MARC U*Star Programs, University of Maryland, Baltimore County, March 2014, Baltimore, MD. *Invited*.
- LA Sawicki, ME Smithmyer, **AM Kloxin**, “Investigating fibrosis progression within dynamic, biomimetic microenvironments,” Pew Scholars Annual Meeting, February 2014, Costa Rica. *Invited*.
- **AM Kloxin**, “Designing dynamic biomaterials for controlling the cell environment,” Department of Chemical Engineering, University of Michigan, January 2014, Ann Arbor, MI. *Invited*.
- **MS Rehmann**, AM Kloxin, “Promoting Ligamentogenic Differentiation of Mesenchymal Stem Cells in Controlled Microenvironments,” AIChE Fall National Meeting, November 2013, San Francisco, CA. *Contributed*.

- **AM Kloxin**, “Probing the role of the cell microenvironment in cell fate with responsive materials,” Comprehensive Cancer Center, University of California, Davis, January 2013. *Visiting Scholar BWF*.
- **AM Kloxin**, “Towards directing regeneration: dynamic biomaterials for controlling the cell microenvironment,” Institute for Regenerative Cures, University of California, Davis, January 2013. *Visiting Scholar BWF*.
- **AM Kloxin**, “Dynamic biomaterials for controlling the cell microenvironment,” Biomedical Engineering, University of California, Davis, January 2013. *Visiting Scholar BWF*.
- **AM Kloxin**, “Functional hydrogels as controlled microenvironments for probing and directing cell differentiation and fate,” American Chemical Society (ACS) Fall National Meeting, August 2012, Philadelphia, PA. *Invited*.
- **AM Kloxin**, “Responsive hydrogels for probing how microenvironment properties influence cell fate,” Polymer Networks, August 2012, Jackson Hole, WY. *Invited*.
- **AM Kloxin**, “Responsive biomaterials for dynamic cell culture and regenerative medicine,” Smart Materials CIMTEC, June 2012, Montecatini Terme, Italy. *Contributed*.
- **AM Kloxin**, “Probing the role of the cell microenvironment in cell fate with responsive materials,” Center for Translational Cancer Research, Helen F. Graham Cancer Center at Christiana Care, May 2012, Newark, DE. *Invited*.
- **AM Kloxin**, “Responsive hydrogels for probing how microenvironment structure and geometry influence cell phenotype,” Materials Research Society (MRS) Spring National Meeting, April 2012, San Francisco, CA. *Contributed*.
- **AM Kloxin**, “Synthetic Approaches to Designing Responsive Hydrogels for Dynamic Cell Culture,” American Institute of Chemical Engineers (AIChE) National Meeting, October 2011, Minneapolis, MN. *Contributed*.
- **AM Kloxin**, “Dynamic Materials for Controlling the Cell Microenvironment,” Chemistry-Biology Interface (CBI), September 2011, Newark, DE. *Invited*.
- **AM Kloxin**, “Responsive hydrogels for controlling signals within the microenvironment of progenitor cells,” 33rd Annual International Conference of the IEEE Engineering in Medicine and Biology Society (EMBC 2011), August 2011, Boston, MA. *Invited*.

Prior to June 2011

- **AM Kloxin**, MW Tibbitt, LA Sawicki, and KS Anseth “*In situ* property control of step- and chain-growth PEG hydrogels via photolytic degradation,” 32nd Annual Australasian Polymer Symposium, February 2011, Coffs Harbour, New South Wales, Australia. *Contributed*.
- **AM Kloxin**, H Wang, SM Haeger, MW Tibbitt, and KS Anseth “*In situ* manipulation of microenvironment modulus to examine its influence on cell fate,” AIChE National Meeting, November 2010, Salt Lake City, UT. *Contributed*.
- **AM Kloxin**, MW Tibbitt, and KS Anseth “Photodegradable gels for studying the influence of gel structure on cell function,” Macro2010: 43rd IUPAC World Polymer Congress - Polymer Science in the Service of Society, July 2010, Glasgow, Scotland, U.K. *Contributed*.
- **AM Kloxin**, JA Benton, MW Tibbitt, and KS Anseth “Phototunable hydrogels for external manipulation of cell microenvironments,” Pacific Polymer Conference, December 2009, Cairns, Australia. *Contributed*.
- **AM Kloxin**, JA Benton, MW Tibbitt, and KS Anseth “*In situ* control of hydrogel modulus with light to direct cell phenotype,” AIChE National Meeting, November 2009, Nashville, TN. *Contributed*.
- **AM Kloxin**, JA Benton, AL Banaszek, and KS Anseth, “Controlled photolytic degradation of PEG-based hydrogel surfaces to examine the effect of stiffness on valvular interstitial cells,” World Biomaterials Congress, May 2008, Amsterdam, The Netherlands. *Contributed*.

- **AM Kloxin**, AM Kasko, CN Salinas, and KS Anseth, "Photoresponsive PEG-based 3D cell culture platforms," ACS Spring National Meeting, April 2008, New Orleans, LA. Polymer Chemistry Division Excellence in Graduate Polymer Research Symposium. *Contributed*.
- **AM Kloxin**, AM Kasko, CN Salinas, and KS Anseth, "Photoresponsive PEG-based hydrogels as niches to tailor biochemical cue presentation for tissue engineering applications," MRS Spring National Meeting, March 2008, San Francisco, CA. *Contributed*.
- **AM Kloxin**, AM Kasko, and KS Anseth, "Controlled photolytic degradation of PEG-based hydrogels to direct cell behavior," Biomedical Engineering Society (BMES) National Meeting, September 2007, Los Angeles, CA. *Contributed*.

Poster Presentations

June 2011-present

- LA Sawicki, C Guo, A Hilderbrand, PM Kharkar, **AM Kloxin**, "Dynamic biomimetic microenvironments for examining cancer recurrence," Pew Scholars Annual Meeting, March 2015, Vieques, Puerto Rico. *Invited*.
- **PM Kharkar**, AM Kloxin, KL Kiick, "Reducing-environment sensitive synthetic hydrogels for controlled drug delivery," Materials Science and Engineering Open House with ASME, University of Delaware, February 2015, Newark, DE.
- **MS Rehmann**, AM Kloxin, "Promoting Ligamentogenic Differentiation of Mesenchymal Stem Cells in Controlled Microenvironments," BMES, October 2014, San Antonio, TX. *Contributed*.
- **PM Kharkar**, AM Kloxin, KL Kiick, "Reducing-environment sensitive synthetic hydrogels for controlled drug delivery", GRC Drug Carriers in Medicine & Biology, August 2014, Waterville Valley, NH. *Contributed*.
- **LA Sawicki**, AM Kloxin, "Synthetic microenvironments to understand breast cancer dormancy and recurrence," GRC Signal Transduction by Engineered Extracellular Matrices, July 2014, Waltham, MA. *Contributed*.
- **PM Kharkar**, AM Kloxin, KL Kiick, "Glutathione Sensitive Hydrogels For Controlled Drug Delivery," Society for Biomaterials National Meeting, April 2014, Denver, CO. *Contributed*.
Recognized by Poster Award (2nd place) from Proteins and Cells at Interfaces Special Interest Group
- **PM Kharkar**, RC Kennel, KL Kiick, AM Kloxin, "Thiol-sensitive Hydrogels For Controlled Drug Delivery," Materials Science and Engineering Open House with ASME, University of Delaware, February 2014, Newark, DE.
- **LA Sawicki**, AM Kloxin, "Tunable Hydrogels to Understand the Microenvironment's Role in Regulating Breast Cancer Dormancy and Recurrence," MRS Fall National Meeting, December 2013, Boston, MA. *Contributed*.
- **MS Rehmann**, AM Kloxin, "Promoting Ligamentogenic Differentiation of Mesenchymal Stem Cells in Controlled Microenvironments," Northeast Regional IDeA Conference, August 2013, Newark, DE. *Contributed*.
- **LA Sawicki**, AM Kloxin, "Tunable Hydrogels to Understand the Microenvironment's Role in Regulating Breast Cancer Dormancy and Recurrence," Northeast Regional IDeA Conference, August 2013, Newark, DE. *Contributed*.
- **PM Kharkar**, RC Kennel, AM Kloxin, KL Kiick, "Microenvironment-responsive injectable hydrogels for controlled drug delivery," Northeast Regional IDeA Conference, August 2013, Newark, DE. *Contributed*.
- **MS Rehmann**, AM Kloxin, "Biochemical Cues for Directing Mesenchymal Stem Cell Function for Ligament Repair," Mid-Atlantic Chemistry-Biology Interface Symposium, May 2013, College Park, MD.
- **MS Rehmann**, AM Kloxin, "Biochemical Cues for Directing Mesenchymal Stem Cell Function for

Ligament Repair,” University of Delaware Annual Biomechanics Research Symposium, May 2013, Newark, DE.

- **PM Kharkar**, KL Kiick, AM Kloxin, “Multimode degradable hydrogels for controlled drug delivery,” Materials Science and Engineering Open House with ASME, University of Delaware, February 2013, Newark, DE.
- MS Rehmann, LS Sawicki, E Macedo, **AM Kloxin**, “Dynamic materials for examining the role of the cell microenvironment in cell fate,” Macromolecular Materials Gordon Research Conference, January 2013, Ventura, CA.
- **MS Rehmann**, AM Kloxin, “Biochemical Cues for Directing Mesenchymal Stem Cell Function for Ligament Repair,” National IDEA Symposium for Biomedical Research Excellence, June 2012, Washington, DC. *Poster.*
Recognized as a Featured Poster in Stem Cells and Tissue Engineering session
- **MS Rehmann**, AM Kloxin, “Biochemical Cues for Directing Mesenchymal Stem Cell Function for Ligament Repair,” Mid-Atlantic Chemistry-Biology Interface Symposium, April 2012, Philadelphia, PA.

Prior to June 2011

- **AM Kloxin**, AM Kasko, and KS Anseth, “Controlled photolytic degradation of PEG-based hydrogels,” 3M IUCRC Photopolymerization Symposium, April 2008, St. Paul, MN.
- **AM Kloxin**, AM Kasko, Jonathan Fairbairn, and KS Anseth, “Controlled photolytic degradation of PEG-based hydrogels: bulk network mass loss, surface patterning, and modeling,” Photopolymerization Fundamentals Conference, June 2007, Breckenridge, CO.
- **AM Kloxin**, AM Kasko, Jonathan Fairbairn, and KS Anseth, “Controlled degradation of photolabile PEG-based hydrogels,” MRS Spring National Meeting, April 2007, San Francisco, CA.

Teaching and Mentoring

University of Delaware, Newark, DE

Co-instructor, Heat and Mass Transfer	Spring 2015
Co-Instructor, Introduction to Polymer Science and Engineering	Fall 2014
Guest Lecturer, NSF SBE2 IGERT Course	Fall 2013, 2014
Instructor, Heat and Mass Transfer	Spring 2014
Co-instructor, Heat and Mass Transfer	Spring 2013
Instructor, Introduction to Polymer Science and Engineering	Fall 2012
Guest Lecturer, Tissue Engineering	Spring 2012
Co-instructor, Introduction to Polymer Science and Engineering	Fall 2011

University of Colorado, Boulder, CO

Co-instructor, First-Year Engineering Projects	Fall 2009
--	-----------

Research Mentor

University of Delaware, Newark, DE

Current Graduate and Postdoctoral Research Assistants

- Katherine Wiley, Ph.D. Student, University of Delaware fall 2014-
Awards: NSF IGERT Fellow in Systems Biology of Cells in Engineered Environments
- Dr. Chen Guo, Post-doctoral Research Associate, University of Delaware spring 2014-
- Elisa Ovadia, CHEG Ph.D. Student, University of Delaware fall 2013-
Awards: Collins Fellowship
- Amber Hilderbrand, CHEG Ph.D. Student, University of Delaware fall 2013-

Awards: Collins Fellowship

- Megan Smithmyer, CHEG Ph.D. Student, University of Delaware fall 2012-
- Prathamesh Kharkar, MSEG Ph.D. Student, University of Delaware fall 2011-

Awards: Excellence in Graduate Polymer Research, ACS POLY Spring 2015
Poster Award (2nd place), SFB 2014 Proteins and Cells at Interfaces SIG
Outstanding Graduate Student Service Award from MSE Department

Featured on LabTV (<https://www.youtube.com/watch?v=uAETtEr187k>)

- Lisa Sawicki, CHEG Ph.D. Student, University of Delaware fall 2011-
Awards: NSF IGERT Fellow in Systems Biology of Cells in Engineered Environments
UD Graduate Fellow (declined due to timing overlap with IGERT)
Schipper Fellowship
- Matthew Rehmann, CHEG Ph.D. Student, NIH CBI Fellow, University of Delaware summer 2011-
Awards: NIH Chemistry-Biology (CBI) Fellow
Saurabh A. Palkar Graduate Award for Mentoring from the UD College of Engineering

Current Undergraduate Research Assistants

- Christopher Bresette, Undergraduate Research Assistant, University of Delaware spring 2015-
- Elaine Stewart, Undergraduate Research Assistant, University of Delaware spring 2015-
- Morgan Dezendorf, Undergraduate Research Assistant, University of Delaware spring 2015-
- Rachel Kennel, Undergraduate Research Assistant, University of Delaware winter 2013-
Awards: UD Research Foundation Summer Scholar
- Cody Reeves, Undergraduate Research Assistant, University of Delaware spring 2014-
Awards: UD Undergraduate Research Program Summer Fellow

Former

- Andrew Gaynor, NIH CBI Research Rotation, CHEG Ph.D. Student winter 2015
- Haoze Yang, Undergraduate Research Assistant, University of Delaware summer 2014
- William Balance, Undergraduate Research Assistant, University of Delaware summer 2013-2014
Awards: UD HHMI Summer Scholar
- Kelsi Skeens, Undergraduate Research Assistant, University of Delaware summer 2013-2014
Senior Research: Examining structure-property relationships in tunable hydrogels towards improved mesh size determination
Awards: Fraser and Shirley Russell Summer Scholar
Current: DuPont
- Michael Dummeldinger, Undergraduate Research Assistant, University of Delaware summer 2013-2014
Senior Thesis: Synthesis and characterization of collagen-mimicking hydrogels to examine lung fibrosis
Awards: Donald W. Harward Fellows Award
UD Undergraduate Research Program Summer Scholar
Current: Bristol-Myers Squibb
- Carolin Hartwig, Fraunhofer Visiting Scholar, M.S. student Dresden University summer 2013
Project: "Directing stem cell differentiation with biomimetic materials"
- Bhavin Gala, Undergraduate Assistant, University of Delaware summer 2013
- Eric Macedo, Undergraduate Research Assistant, University of Delaware 2011-2013
Senior Research: Probing the Role of Alignment in the Differentiation of hMSCs into Ligament Fibroblasts
Awards: UD HHMI Summer Scholar
Current: CB&I
- Andrew Garibian, Undergraduate Research Assistant, University of Delaware winter-spring 2012
Current: Brakchem America
- Bansri Patel, High School Researcher, BioGENEius Program winter-spring 2012

Awards: Gold Medal in 10th Grade Fair, 1st Place Medicine & Health Category; 1st Place Philadelphia Drug Exchange Award; and DE BioGENEius Challenge Honorable Mention

Current: University of Pittsburgh Guaranteed Admission Program in Medicine

Professional Service

Conference Organization

- GRC Discussion Leader “Polymers: Inventive Synthesis for Innovative Technologies” June 2015
- SFB Symposium Co-organizer “Advanced Hydrogels with Hierarchical Structures for Biological Applications” Spring 2015
- ACS BIOT Area Coordinator “Emerging Technologies” Symposium Spring 2015
- AIChE Session Co-organizer “Biomaterials: Future Faculty” Fall 2014
- SFB Symposium Co-organizer and Moderator “Biomaterials in the 4th Dimension - Controlling Temporal Properties” Spring 2014
- ACS Session Organizer and Moderator “Emerging Technologies in Stem Cells and Tissue Engineering” Spring 2014
- AIChE Session Organizer “Biomimetic Materials I&II” Fall 2013
- Co-organizer “Biomaterials: Future Faculty”
- MRS Symposium Organizer “Synthetic tools for understanding biological phenomena” Fall 2013
- *Funded by NSF, 3M, Biomaterials Science, Journal of Visual Experiments, University of Rochester, IUPUI, and University of Delaware*
- ACS Symposium Organizer “Bottom-up design of the next generation of biomaterials” Spring 2013
- *Funded by NSF, Aldrich Materials Science, TOSOH BIOSCIENCE, ACS POLY*
- GRC Discussion Leader “Macromolecular Materials” January 2013
- AIChE Session Organizer “Hydrogel Biomaterials” Fall 2012
- Co-organizer, “Spatially Patterned Biomaterials”
- ACS PMSE Session Presider “Polymeric Biomaterials” August 2012
- Polymer Networks 2012 Conference Co-organizer and Session Presider August 2012
- AIChE Session Co-organizer “Challenges in Biomaterials Synthesis” Fall 2011

Committees and Review Panels

- NSF panels, ad hoc panel member and ad hoc reviewer 2013-2015
- Internal Steering Committee, 2014-
UD COBRE Molecular Design of Advanced Biomaterials
- Chemistry & Biochemistry Faculty Search Committee, 2014-2015
UD COBRE Discovery of New Chemical Probes and Therapeutic Targets
- Ad hoc member of UD Biomedical Engineering Faculty Search Committee 2014
- Summer Scholars Selection Committee 2012, 2013
- Dean’s Search Committee, UD College of Engineering 2012-2013
- Seminar Coordinator, UD Chemical & Biomolecular Engineering 2012-2013

Journals

- Editorial Advisory Board, *ACS Biomaterials Science & Engineering* 2014-
- Peer Review Board member, *Journal of Visualized Experiments (JoVE)* 2011-

Education and Outreach

- Panelist, UD New Faculty Orientation February 2015
- Panelist, AIChE Women’s Initiative Committee Assistant Professor Career Panel Fall 2014
- Presenter, UD Women in Engineering “Meet Your Faculty Lunch” Fall 2014
- Panelist, Alpha Omega Epsilon High School Visitation Day Spring 2014
- Student-led weekly science-themed radio program Science Rocks! January 2014-

www.ScienceRocksRadio.com

- Faculty Host for the High School Weekday Visit Program College of Engineering Spring 2013
- Faculty Representative, UD Decision Days Spring 2013
- Lecturer, UD Governor's School Summer 2012
- "What is Engineering" video, presented at Blue Rocks Science Day (3,000 students) Spring 2012
- UD Halloweengineering – Engineering discovery for K-12 students & parents Fall 2011
- Faculty Representative, University of Delaware Discovery Days 2011, 2012

Funding

On-going

- UDRF SI Award 2015-2017
- Junior Investigator, NIH COBRE Discovery of New Chemical Probes and Therapeutic Targets 2014-2019
- UC-Davis/BWF 2014-2017
- Pew Scholar in Biomedical Sciences 2013-2017
- NSF CAREER Award 2013-2018
- University of Delaware Startup Grant 2011-

Completed

- Junior Investigator, NIH COBRE Molecular Design of Advanced Biomaterials [P20-GM103541] 2012-2014
- University of Delaware Research Foundation Grant 2012-2014
- Burroughs Wellcome Fund Collaborative Research Grant 2012-2013
- NIH COBRE Molecular Design of Advanced Biomaterials Pilot Project (Co-PI) [P20-GM103541] 2011-2012
- NIH COBRE Women in Science & Engineering on Osteoarthritis Pilot Project [P20-RR016458] 2011