JASON A. BURDICK, PH.D.

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UNIVERSITY OF COLORADO BOULDER
BIOFRONTIERS INSTITUTE
DEPARTMENT OF CHEMICAL AND BIOLOGICAL ENGINEERING

EDUCATION

B.S. Chemical Engineering, University of Wyoming, Laramie, WY, May 1998

Ph.D. Chemical Engineering, University of Colorado, Boulder, CO, August 2002
Dissertation: Synthesis and Characterization of Osteoinductive Photocurable Scaffolds: A Tissue Engineering Approach to Enhance Bone Regeneration

PROFESSIONAL EXPERIENCE

Research Assistant. Dr. Kristi S. Anseth, Mentor. Department of Chemical Engineering, University of Colorado, Boulder, CO, January 1999 to June 2002

Research Associate. Dr. Kristi S. Anseth, Mentor. Department of Chemical Engineering, University of Colorado, Boulder, CO, July to December 2002

Postdoctoral Fellow. Dr. Robert Langer, Mentor. Department of Chemical Engineering, MIT, Cambridge, MA
Research Fellow. Department of Surgery, Massachusetts General Hospital and Harvard Medical School
January 2003 to June 2005

Wilf Family Term Assistant Professor. Department of Bioengineering, University of Pennsylvania, Philadelphia, PA, July 2005 to June 2010

Member. Institute for Medicine and Engineering, University of Pennsylvania, Philadelphia, PA, June 2006 to Present

Associate Professor (with tenure). Department of Bioengineering, University of Pennsylvania, Philadelphia, PA, July 2010 to June 2013

Visiting Scholar. Dr. Fiona Watt, Mentor. Wellcome Trust Centre for Stem Cell Research, University of Cambridge, Cambridge, UK, Fall 2011

Professor. Department of Bioengineering, University of Pennsylvania, Philadelphia, PA, July 2013 to April 2018

Robert D. Bent Professor of Bioengineering. Department of Bioengineering, University of Pennsylvania, Philadelphia, PA, May 2018 to Dec 2021

Adjunct Professor. Department of Bioengineering, University of Pennsylvania, Philadelphia, PA, Jan 2022 to Present

Bowman Endowed Professor. BioFrontiers Institute and Department of Chemical and Biological Engineering, University of Colorado, Boulder, CO, Jan 2022 to Present

HONORS AND AWARDS

1999-2000	Colorado Institute for Research in Biotechnology Fellowship
2000-2002	Department of Education GAANN Fellowship, Macromolecular Chemistry and Engineering
2000	2nd place, poster competition, 13th Annual Colorado Biotechnology Symposium
2001	1st place, Society for Biomaterials Orthopaedic Special Interest Group Graduate Student Award
2002	2nd place, Department of Chemical Engineering Annual Research Symposium
2002	1st place, Society for Biomaterials Dental/Craniofacial Special Interest Group Graduate Student Award
2002	Department of Chemical Engineering Max S. Peters Outstanding Graduate Student Award

2003-2004 Spinal Cord Research Foundation Postdoctoral Fellowship
2004-2009 NIH/NIDCR K22 Scholar Development and Faculty Transition Award
2005-2010 Recipient of Wilf Family Term Chair
2007-2009 ACS Petroleum Research Fund Early Career Grant
2007- Editorial Board, *Journal of Biomedical Materials Research A*
2007-2012 Packard Foundation Fellowship in Science and Engineering
2008-2010 Faculty of 1000 Medicine – Musculoskeletal Repair & Regeneration
2008-2010 Coulter Foundation Early Career Award
2009-2011 Editorial Board, *Tissue Engineering*
2009-2014 National Science Foundation CAREER Award
2009 National Academy of Engineering US Frontiers of Engineering Participant
2009 National Academy of Sciences Chinese-American Kavli Frontiers of Science Participant
2010-2016 Editorial Board, *Biomedical Materials*
2011-2016 Editorial Board, *Biomacromolecules*
2011-2014 Editorial Board, *ACS Applied Materials and Interfaces*
2011 Elected Fellow, American Institute for Medical and Biological Engineering (AIMBE)
2011 NIH/NIBIB Edward C. Nagy New Investigator Award
2011 Kalpana Chalwa Outstanding Recent Alumni Award, University of Colorado
2012-2019 Emerging Topics Editor, *Tissue Engineering*
2012 Special Issue Editor, Injectable Gels for Organ/Tissue Repair, *Biomedical Materials*
2013 National Academy of Sciences Kavli Frontiers of Science Speaker
2014-2018 American Heart Association Established Investigator Award
2014 National Academy of Engineering Frontiers of Engineering Speaker
2014- Associate Editor, *ACS Biomaterials Science and Engineering*
2016 Young Talent Award, Conference of Molecular Engineering of Polymers
2017- Editorial Board, *Biofabrication*
2018 Clemson Award for Basic Research, Society for Biomaterials
2018 George H. Heilmeier Faculty Award for Excellence in Research
2018 Recipient of Robert D. Bent Professorship
2019 Chaffer Visiting Fellowship, University of Otago – New Zealand
2019 *Acta Biomaterialia* Silver Medal Award
2019 Fellow, Biomedical Engineering Society (BMES)
2019- Editorial Board, *Advanced Healthcare Materials*
2019 Fellow, National Academy of Inventors (NAI)
2020 Fellow Biomaterials Science and Engineering, IUS-BSE
2020- Editorial Board, *Bioengineering*
2021- Editorial Board, *Materials Futures*
2022, 2021, 2020, 2019, 2018 Top 1% Highly Cited Researchers, Clarivate Analytics
2022- Editorial Advisory Board, *Chemical Reviews*
2022- NIH Biomaterials and Biointerfaces (BMBI) Study Section Member
2022- Editorial Board, *International Journal of Bioprinting*

TEACHING EXPERIENCE

University of Pennsylvania
Biomaterials (BE 512), Fall 2005, 32 students
Bioengineering Laboratory I (BE 209), Fall 2006, 84 students
Biomaterials (BE512), Spring 2007, 26 students
Bioengineering Laboratory I (BE 209), Fall 2007, 49 students
Biomaterials (BE512), Spring 2008, 32 students
Bioengineering Laboratory I (BE 209), Fall 2008, 40 students
Bioengineering Laboratory I (BE 209), Fall 2009, 28 students
Tissue Engineering (BE 553), Spring 2010, 31 students
Bioengineering Laboratory I (BE 209), Fall 2010, 24 students
Bioengineering in the World (BE 280), Spring 2012, 9 students
Tissue Engineering (BE553), Spring 2013, 38 students
Biomaterials (BE220), Spring 2013, 93 students
Tissue Engineering (BE553), Spring 2014, 35 students
Biomaterials (BE220), Spring 2014, 72 students

Tissue Engineering (BE553), Spring 2015, 30 students
Biomaterials (BE220), Spring 2015, 57 students
Tissue Engineering (BE553), Spring 2016, 41 students
Biomaterials (BE220), Spring 2016, 61 students
Tissue Engineering (BE553), Spring 2017, 41 students
Biomaterials (BE220), Spring 2017, 57 students
Tissue Engineering (BE553), Fall 2017, 37 students
Tissue Engineering (BE553), Spring 2019, 41 students
Tissue Engineering (BE553), Spring 2020, 48 students
Tissue Engineering (BE553), Fall 2020, 31 students
Tissue Engineering (BE553), Fall 2021, 38 students

Faculty, Global Biomedical Service Program, Hong Kong and Qing Yuan, China, Summer 2009
Faculty, International Development Summer Institute – Africa Program, Ghana, Africa, Summer 2012

University of Colorado
Teaching Assistant, Chemical Engineering Senior Lab, Fall 1998
Advanced Teaching Assistant, Polymer Engineering, Fall 2000
Teaching Assistant, Biomaterials and Tissue Engineering, Fall 2001

Research Mentor for:

Postdoctoral Associates:

Sujata Sahoo, PhD, September 2006 to September 2007
Manoj Charati, PhD, November 2008 to October 2010 (currently: Merck)
Harini Sundararaghavan, PhD, October 2008 to June 2011 (currently: Wayne State University)
Liming Bian, PhD, September 2009 to July 2012 (currently: South China University of Technology)
Murat Guvendiren, PhD, July 2008 to June 2013 (currently: New Jersey Institute of Technology)
Danielle Soranno, MD, July 2011 to June 2013 (currently: Indiana University)
Will Gramlich, PhD, March 2012 to July 2013 (currently: University of Maine)
Julianne Holloway, PhD July 2012 to December 2015 (currently: Arizona State University)
Christopher Highley, PhD September 2012 to December 2017 (currently: University of Virginia)
Brendan Purcell, PhD September 2013 to August 2014 (currently: Prohibix)
Steven Caliari, PhD September 2013 to August 2016 (currently: University of Virginia)
Adrianne Rosales, PhD September 2014 to June 2017 (currently: University of Texas - Austin)
Yi-Cheun Yeh, PhD November 2014 to July 2017 (currently: National Taiwan University)
Sebastian Vega, PhD January 2015 to August 2018 (currently: Rowan University)
Kwang Hoon Song, PhD July 2015 to May 2019 (currently: Incheon National University)
Dawn Pedrotty, MD, PhD August 2015 to August 2016 (currently: Vanderbilt University)
Su-Chin Heo, PhD August 2015 to December 2016 (currently: University of Pennsylvania)
Kalil Abdullah, MD June 2016 to May 2017 (currently: University of Pittsburgh)
Claudia Loebel, MD, PhD August 2016 to August 2021 (currently: University of Michigan)
Matthew Davidson, PhD January 2017 to Present
Andrew Daly, PhD January 2018 to January 2021 (currently: NUI Galway)
Mikyung Shin, PhD March 2018 to August 2019 (currently: Sungkyunkwan University, SKKU)
Katrina Wisdom, PhD October 2018 to February 2020 (currently: GSK)
Taimoor Qazi, PhD March 2019 to August 2022 (currently: Purdue University)
Claire Witherel, PhD October 2019 to October 2021 (currently: Integra)
Meg Cooke, PhD Jan 2022 to Present
Gabriel Rodriguez-Rivera, PhD September 2022 to Present
Chima Maduka, PhD September 2022 to Present
Hannah Zlotnick, PhD October 2022 to Present

Research Technicians/Specialists:

Robert Metter, Summer 2008 to Summer 2009
Kevin Hou, Summer 2009 to Summer 2010

Heather Weber, MS, Spring 2012 to Summer 2012
Reena Rai, MS, Summer 2010 to Summer 2014
Sarah van Keulen, Fall 2014 to Summer 2015
Janna Sloand, Summer 2015 to Summer 2016
Andrew Rouff, Summer 2016 to Summer 2017
Karyll Davis, Fall 2017 to Summer 2018

Graduate Students (PhD):

Cindy Chung, PhD, NSF Graduate Research Fellow, Summer 2004-Summer 2009 (currently: Kodiak Sciences)
Dissertation: Development and Characterization of Photocrosslinkable Hyaluronic Acid Hydrogels for Cartilage Regeneration

Darren Brey, MS, PhD, Fall 2005-Summer 2010 (currently: U Louisville)
Dissertation: Combinatorial Polymer Synthesis and High-throughput Screening Technology to Identify Optimal Approaches for Mineralized Tissue Engineering

Jamie Ifkovits, PhD, Ashton Fellow, AHA Predoctoral Fellow, Spring 2006-Summer 2010 (currently: GSK)
Dissertation: Acellular and Radically Polymerized Biodegradable Materials to Control Tissue Interactions after Myocardial Infarction

Joshua Katz, PhD, NSF Graduate Research Fellow, Spring 2007-Spring 2011 (currently: DuPont)
Dissertation: Chemical Modifications to Vesicle Forming Diblock Copolymers: Development of Smart Functional Polymersome Membranes

Sudhir Khetan, PhD, NSF Graduate Research Fellow, Spring 2008-Summer 2012 (currently: Union College)
Dissertation: Engineering Hyaluronic Acid Hydrogel Degradation to Control Cellular Interactions and Adult Stem Cell Fate in 3D

Elena Tous, PhD, Spring 2009-Summer 2012 (currently: Spark Therapeutics)
Dissertation: Tunable Acellular Hyaluronic Acid Hydrogel Systems to Attenuate Left Ventricular Remodeling

Ross Marklein, PhD, NSF Graduate Research Fellow, Fall 2007-Summer 2012 (currently: University of Georgia)
Dissertation: Spatially and Temporally Controlled Mechanical Signals to Direct Human Mesenchymal Stem Cell Behavior

Brendan Purcell, PhD, AHA Predoctoral Fellow, Spring 2009-Summer 2013 (currently: Prohibix)
Dissertation: Injectable Hydrogels for Local Protein Delivery to Engineer Myocardial Remodeling

Iris Kim, PhD, NSF Graduate Research Fellow, Spring 2010-Summer 2014 (currently: FDA)
Dissertation: Engineered Fibrous Hyaluronic Acid Hydrogels for Cartilage Repair

Shauna Dorsey, PhD, Spring 2011 to Fall 2014 (currently: Picatinny Arsenal)
Dissertation: MRI Evaluation of Injectable Hyaluronic Acid Hydrogel Therapy to Attenuate Myocardial Infarct Remodeling

Ryan Wade, PhD, NSF Graduate Research Fellow, Fall 2010-Summer 2015 (currently: Exponent)
Dissertation: Engineering Extracellular Matrix Signals into Fibrous Hyaluronic Acid Hydrogels

Christopher Rodell, PhD, AHA Predoctoral Fellow, Spring 2012 to Summer 2016 (currently: Drexel University)
Dissertation: Development of Shear-thinning and Self-healing Hydrogels through Guest-Host Interactions for Biomedical Applications

Leo Wang, PhD, AHA and NIH F30 Predoctoral Fellow, Fall 2014 to Spring 2018 (currently: UPenn medical resident)
Dissertation: Injectable Hydrogels to Deliver RNA Interference Therapeutics for Myocardial Infarction

Josh Mealy, PhD, NSF Graduate Research Fellow, Spring 2014 to Summer 2018 (currently: GSK)
Dissertation: Guest-host Interactions to Engineer Injectable Hydrogels for Controlled Degradation and Release for Cardiac Repair

Mi Kwon, PhD, NSF Graduate Research Fellow, Spring 2014 to Summer 2019 (currently: egnite Health)
Dissertation: Engineering the Interface: Hyaluronic Acid Hydrogels that Mediate MSC Chondrogenesis for Cartilage Tissue Engineering

Minna Chen, PhD, AHA Predoctoral Fellow, Fall 2013 to Summer 2019 (currently: ZS Consulting)
Dissertation: Injectable Hyaluronic Acid Hydrogels for the Delivery of Cell-based Therapeutics to the Heart

Jonathan Galarraga, PhD, NSF Graduate Research Fellow, Fall 2016 to Fall 2021 (currently: Vivodyne)
Dissertation: Biofabrication Approaches with Hyaluronic Acid Hydrogels for Cartilage Repair

Selen Uman, PhD, AHA Predoctoral Fellow, Fall 2018 to Summer 2022 (currently: finishing MD, UPenn)
Dissertation: Injectable Hydrogels to Deliver Extracellular Vesicles for Treatment after Myocardial Infarction

Victoria Muir, PhD, NSF Graduate Research Fellow, Summer 2018 to Summer 2022 (currently: postdoc Princeton)
Dissertation: Designing Hyaluronic Acid Granular Hydrogels for Biomaterials Applications

Margaret Prendergast, PhD, NSF Graduate Research Fellow, Fall 2018 to Summer 2022 (currently: J&J/Janssen)
Dissertation: Fundamentals and Application of 3D Suspension Bath Bioprinting for the Engineering of Meniscal Tissue

Abhishek Dhand (UPenn BE PhD Candidate), Lithography Printing of Hydrogels for Biomedical Applications, Spring 2019 to Present

Nikolas Di Caprio (UPenn BE PhD Candidate), Granular Hydrogel Composites for Cartilage Repair, Fall 2019 to Present
Karen Xu (UPenn BE MD/PhD Candidate), NIH F30 Predoctoral Fellow, Injectable Hydrogels for the Repair of Meniscal Tissue, Fall 2020 to Present
Morgan Riffe (CU MSE PhD Candidate), Spring 2022 to Present, CU-Boulder
Bradley Taha (CU ChBE PhD Candidate), Spring 2022 to Present, CU-Boulder
Alysse DeFoe (CU ChBE PhD Candidate), Spring 2022 to Present, CU-Boulder
Kendra Worthington (CU ChBE PhD Candidate), Fall 2022 to Present, CU-Boulder
Mackenzie Obenreder (CU ChBE PhD Candidate), Fall 2022 to Present, CU-Boulder

Graduate Students (Masters):

Anthony Fargnoli (MS, Systems Engineering), Spring 2007
Yousef Mazhar (MS/MBA, Biotechnology), Summer 2007
Jeffrey Devlin (MS, Bioengineering), Spring 2008-Summer 2008
Thesis: Electrospun Photocrosslinkable Scaffolds with Drug Delivery Capabilities
David Lau (MS, Bioengineering), Summer 2008-Fall 2008
Thesis: Controlling Porosity in Biodegradable and Photocrosslinkable Electrospun Scaffolds
Ian Lee (MS Bioengineering), Spring 2009 to Fall 2009
Thesis: Using Near Infrared Light-Sensitive Gold Nanorods to Trigger Drug Release in Polypeptide Hydrogels
Derrick Hsu (BS/MS Materials Science and Engineering), Spring 2009 to Fall 2009
Kolin Hribar (BS/MS, Bioengineering), Summer 2009 to Spring 2011
Thesis: Novel Optical Properties and Drug Delivery Applications of Polymer-Gold Nanorod Composites
Vyas Ramanan (BS/MS, Bioengineering), Fall 2009 to Spring 2011
Thesis: Development of Light-Responsive Biomaterial Systems for Dynamic Control of Material Properties
Heather Weber (MS, Bioengineering), Fall 2010 to Summer 2011
Thesis: Modulating Local Inflammation via Hydrogel/Microsphere Composites
Hoang (Jack) Lu (MS, Bioengineering), NSF Graduate Research Fellow, Summer 2010 to Summer 2012
Thesis: Development of Injectable Shear-thinning 'Dock-and-Lock' Hydrogel Systems for Therapeutic Delivery
Vanessa Chuo (BS/MS Candidate, Bioengineering), Fall 2012 to Spring 2013
Thesis: Controlling the Delivery of Tissue Inhibitors of Metalloproteinases from Hyaluronic Acid-Based Hydrogels
Henry Ma (MS Candidate, Bioengineering), Spring 2013 to Spring 2014
Thesis: Development of Hydrogels with Protease-Degradable Crosslinks for Controlled Drug Delivery
Stephen Leong (MS Candidate, Chemical Engineering), Spring 2013 to Spring 2014
Thesis: A Hyaluronic Acid Based Construct for Wound Healing
Neville Dusaj (MS Candidate, Biochemistry), Summer 2015 to Spring 2016
Thesis: Injectable and Cytocompatible Tough Double Network Hydrogels through Tandem Guest-Host Chemistry and Covalent Crosslinking
Janna Sloand (MS Candidate, Bioengineering), Summer 2015 to Spring 2016
Thesis: Design and Characterization of Guest-Host Modified Polymers for RNAi Delivery from an Injectable Hydrogel System
Andrew Rouff (MS Candidate, Bioengineering), Summer 2016 to Summer 2017
Thesis: 3D Printing of Guest-Host Hydrogels into Dual-Netwok Hydrogels for Synthetic Vessel Fabrication
James Howard (MS Candidate, Bioengineering), Summer 2016 to Spring 2017
Thesis: Supramolecular Injectable Hydrogel Drug Delivery System as a Treatment for Myocardial Infarction
Mu-Huan Lee (MS Candidate, Bioengineering), Fall 2016 to Summer 2017
Tibby Duan (MS Candidate, Bioengineering), Spring 2018 to Spring 2019
Thesis: Hydrogel Properties influence Nascent ECM Distribution in 3-Dimensional Hydrogels
Gabe Mickel (MS Candidate, Nanotechnology), Fall 2018 to Summer 2019
Liah Dukaye (MS Candidate, Materials Science & Engineering), Fall 2021

Visiting Students/Faculty:

Tamar Sterling (MD Candidate, Jefferson University), Summer 2007
Brigid Reilly (DVM Candidate, Penn), Summer 2007
Cheng-Hung Chou (PhD Candidate, National Taiwan University, Taiwan), Spring 2007-Spring 2008
Sejakhosi Mohale, MS, Instructor at University of Lesotho, Africa, Summer 2010
Renata Sala (PhD, Universidade Federal de Sao Carlos, Brazil), Summer 2015-Summer 2016
Liliang Ouyang (PhD, Tsinghua University, China), Fall 2015-Summer 2016
Sara Trujillo-Munoz (PhD, University of Glasgow), Fall 2016

Matteo D'Este, PhD (AO Foundation), Fall 2017-Spring 2018
Barbara Mendes (PhD, University of Minho), Spring 2019-Summer 2019
Manuela Garay Sarmiento (PhD, DWI Leibniz), Fall 2022

Undergraduate Students (Senior Design/Senior Thesis):

Alexander Kent and Will Lee, Enhanced Integration of Engineered Cartilage with Native Tissue, 2006-2007
An Nguyen, Andrea Tan, Sounok Sen, Chitosan Hydrogels for Intervertebral Disc Replacement, 2006-2007
Robert Metter, Chia Wu, Laura Michelis, Jason Phan, Engineered Multi-Component Nanofibrous Scaffolds, 2007-2008
Rachel Howitt, High-throughput Screening of MSC Osteogenesis, 2008
Ludovic Vincent, Louis Wang, Benjamin Hsu, Electrospun Scaffolds for Meniscus Regeneration, 2008-2009
Anthony Peters, High-throughput Technology in Tissue Engineering, 2008-2009
Katherine Wu, Michael Beecham, Zen Liu, Matt Canver, Designing a Novel Electrospinning Apparatus, 2009-2010
David Zhai, Cyrus Huang, Fabio Raman, Sophia Chen, Electrospinning Fibers with varied Depth Alignment, 2010-2011
Mollie Sussman, Steve Leung, Logan Troppito, Julie Xu, Catheter Delivery of Hydrogels, 2012-2013
Jeffrey Chudakoff, Stimuli-responsive Microgels, 2014-2015
Emily Zhang, Business Plan for Biotech Startup on Cardiac Repair, 2015-2016

Undergraduate Students (Research/Independent Study):

University of Pennsylvania
Surbhi Puri, Fall 2005-Spring 2006
Radhika Gupta (Merck Undergraduate Research Fellow), Fall 2006-Spring 2007
Andrea Tan (Merck Undergraduate Research Fellow), Summer 2006-Summer 2007
Clarence Quah, Spring 2007
Elizabeth Hirst (NSF REU Program), Summer 2007
Robert Metter, Summer 2006-Spring 2008
Robert Mozia (NSF AMP Program), Summer 2007 to Summer 2008
Katherine Wu, Spring 2007 to Spring 2009
Felix Messerschmitt, Spring 2008
Derrick Hsu, Spring 2008
Michael Beecham (NSF REU Program), Spring 2008 to Spring 2009
Vyas Ramanan (Provost's Undergraduate Research Mentorship Program), Summer 2008 to Summer 2009
Zen Liu (Penn Genome Frontiers Institute Program), Summer 2008, Spring 2009
Kolin Hribar, Summer 2008 to Spring 2009
Eric Cohen (NSF REU Program), Summer 2009 to Fall 2009
David Zhai, Spring 2010 to Summer 2011
Cari Meisel, Spring 2010 to Fall 2010
Ormarie Vazquez (NSF REU Program), Summer 2010
Mollie Sussman, Fall 2010 to Summer 2012
Yuk Mun Li (NSF REU Program), Summer 2011
Leron Arama, Spring 2012 to Summer 2012, Spring 2013 to Fall 2013
Teddy Guenin, Summer 2012
Nailah Seale (NSF REU Program), Summer 2012
Gregory Winter (High School Student), Summer 2012
Emily Zhang, Summer 2011, Summer 2012
Cassi Henderson, Spring 2013
Ethan Bassin (Rachleff Scholars Program), Summer 2013 to Spring 2014, Fall 2014 to Spring 2015
Adam Kaminski, Summer 2013
Gi Yun Lee (Rachleff Scholars Program), Spring 2014 to Spring 2015
Neville Dusaj (Vagelos Program), Spring 2014 to Spring 2015
Zoe Steier (NSF REU Program), Summer 2014
James Howard (NSF AMP Program), Summer 2014
Bria Macklin (SUIP Program), Summer 2014
Justin Morena (Rachleff Scholars Program), Spring 2015 to Summer 2015
Elizabeth Soulas (NSF REU Program), Summer 2015
Alex Zhao (Rachleff Scholars Program), Fall 2015 to Spring 2016
Matthew Morrow (NSF REU Program), Summer 2016
Young-Hun Kim, Spring 2017-Spring 2018

Jon Durel (NSF REU Program), Summer 2017
Claude King (NSF REU Program), Summer 2017
Anna Schoonen (NSF REU Program), Summer 2018
Nikolas Di Caprio (NSF REU Program), Summer 2018
Zhengkun Chen (Hong Kong Polytechnic University), Fall 2018
Christina Hummel (NSF REU Program), Summer 2019
Patricia Mensah (SUIP Program), Summer 2019
Bruce Enzmann (NSF REU Program), Summer 2020-Summer 2021
Kayla Brown (NSF REU Program), Summer 2021
Julio Rivera De Jesus (NSF REU Program), Summer 2021
Shoshana Weintraub (Littlejohn Program), Spring 2020-Spring 2022

MIT
Stephen Lee, Summer 2003–Fall 2003
Philip Alexander, Fall 2003
Thomas Kraehenbuehl, Fall 2003-Spring 2004
Ellen Liang, Fall 2003-Spring 2005

University of Colorado
Alan Peterson, Fall 1999-Spring 2000
Laney Philpott (NSF REU Program), Summer 2000
Ryan Bender, Summer 2001
Janice Huang, Fall 2000-Spring 2002
Mariah Mason, Fall 2000-Spring 2002

PUBLICATIONS

Peer Reviewed:

1. A.K. Burkoth, **J. Burdick**, K.S. Anseth, Surface and Bulk Modifications to Photocrosslinked Polyanhydrides to Control Degradation Behavior, *Journal of Biomedical Materials Research,* 51: 352-359, 2000.

2. **J.A. Burdick**, A.J. Peterson, K.S. Anseth, Conversion and Temperature Profiles During the Photoinitiated Polymerization of Thick Orthopaedic Biomaterials, *Biomaterials,* 22: 1779-1786, 2001.

3. **J.A. Burdick**, L.M. Philpott, K.S. Anseth, Synthesis and Characterization of Tetrafunctional Lactic Acid Oligomers: A Potential *In Situ* Forming Orthopaedic Biomaterial, *Journal of Polymer Science, A, Polymer Chemistry,* 39: 683-692, 2001.

4. **J.A. Burdick**, M.N. Mason, K.S. Anseth, *In Situ* Forming Lactic Acid Based Orthopaedic Biomaterials: Influence of Oligomer Chemistry on Osteoblast Attachment and Function, *Journal of Biomaterials Science. Polymer Edition,* 12: 1253-1265, 2001.

5. K.S. Anseth and **J.A. Burdick**, New Directions in Photopolymerizable Biomaterials, *MRS Bulletin*, 27:130-138, 2002.

6. **J.A. Burdick**, R.F. Padera, J.V. Huang, K.S. Anseth, An Investigation of the Cytotoxicity and Histocompatibility of *In Situ* Forming Lactic Acid Based Orthopaedic Biomaterials, *Journal of Biomedical Materials Research (Applied Biomaterials),* 63: 484-491, 2002.

7. **J.A. Burdick** and K.S. Anseth, Photoencapsulation of Osteoblasts in Injectable RGD-Modified PEG Hydrogels for Bone Tissue Engineering, *Biomaterials*, 23: 4315-4323, 2002.

8. **J.A. Burdick**, M.N. Mason, A.D. Hinman, K. Thorne, K.S. Anseth, Delivery of Osteoinductive Growth Factors from Degradable PEG Hydrogels Influences Osteoblast Differentiation and Mineralization, *Journal of Controlled Release*, 83: 53-63, 2002.

9. A.K. Poshusta, **J.A. Burdick**, D.J. Mortisen, R.F. Padera, D. Ruehlman, M.J. Yaszemski, K.S. Anseth, Histocompatibility of Photocrosslinked Polyanhydrides: A Novel *In Situ* Forming Orthopaedic Biomaterial, *Journal of Biomedical Materials Research*, 64A: 62-69, 2003.

10. **J.A. Burdick**, W.S. Dernell, D. Frankel, K.S. Anseth, An Initial Investigation of Photocurable 3-Dimensional Lactic Acid Based Scaffolds in a Critical-Sized Cranial Defect, *Biomaterials,* 24: 1613-1620, 2003.

11. K.A. Davis, **J.A. Burdick,** K.S. Anseth, Photopolymerized Crosslinked Degradable Copolymer Networks for Tissue Engineering Applications, *Biomaterials,* 24: 2485-2495, 2003.

12. **J.A. Burdick,** T. Lovestead, K.S. Anseth, Kinetic Chain Lengths in Highly Crosslinked Networks Formed by the Photoinitiated Polymerization of Degradable Divinyl Monomers: A GPC Investigation, *Biomacromolecules*, 4: 149-156, 2003.

13. X. Jia, **J.A. Burdick,** J. Kobler, R.J. Clifton, J.J. Rosowski, S.M. Zeitels, R. Langer, Synthesis and Characterization of In Situ Crosslinkable Hyaluronic Acid-Based Hydrogels with Potential Application for Vocal Fold Regeneration, *Macromolecules*, 37: 3239-3248, 2004.

14. **J.A. Burdick**, A. Khademhosseini, R. Langer, Fabrication of Gradient Hydrogels Using a Microfluidics/ Photopolymerization Process, *Langmuir*, 20: 5153-5156, 2004.

15. A. Khademhosseini, J. Yeh, S. Jon, G. Eng, K.Y. Suh, **J.A. Burdick**, R. Langer, Molded PEG Microstructures for Capturing and Shear Protecting Cells Within Microfluidic Channels, *Lab On A Chip,* 4: 425-430, 2004.

16. D.G. Anderson, **J.A. Burdick**, R. Langer, Smart Biomaterials, *Science*, 305: 1923-1924, 2004.

17. T.M. Lovestead, **J.A. Burdick**, K.S. Anseth, C.N. Bowman, Understanding Multivinyl Monomer Photopolymerization Kinetics through Modeling and GPC Investigation of Degradable Networks, *Polymer*, 46: 6226-6234, 2005.

18. B.A. Pfeifer, **J.A. Burdick**, R. Langer, Formulation and Surface Modification of Poly(Ester-Anhydride) Micro- and Nanospheres, *Biomaterials,* 26: 117-124, 2005.

19. **J.A. Burdick,** C. Chung, X. Jia, M.A. Randolph, R. Langer, Controlled Degradation and Mechanical Behavior of Photopolymerized Hyaluronic Acid Networks, *Biomacromolecules,* 6: 386-391, 2005.

20. S. Levenberg, **J.A. Burdick**, T. Kraehenbuehl, R. Langer, Neurotrophin Induced Differentiation of Human Embryonic Stem Cells on 3-Dimensional Polymeric Scaffolds, *Tissue Engineering*, 11: 506-512, 2005.

21. B.A. Pfeifer, **J.A. Burdick,** S. Little, R. Langer, Poly(ester-anhydride):Poly(β-amino ester) Micro- and Nanospheres: DNA Encapsulation and Cellular Transfection, *International Journal of Pharmaceutics,* 304, 210-219, 2005.

22. **J.A. Burdick**, M. Ward, E. Liang, M.J. Young, R. Langer, Stimulation of Neurite Outgrowth by Neurotrophins Delivered from Degradable Hydrogels, *Biomaterials*, 27: 452-459, 2006.

23. P.M. George, D.A. LaVan, **J.A. Burdick**, C.Y. Chen, E. Liang, R. Langer, Electrically Controlled Drug Delivery from Biotin-Doped Conductive Polypyrrole, *Advanced Materials,* 18: 577-581, 2006.

24. Y. Yeo, **J.A. Burdick**, C.B. Highley, R. Marini, R. Langer, D.S. Kohane, Peritoneal Application of Chitosan and UV-crosslinkable Chitosan, *Journal of Biomedical Materials Research A*, 78A:668-675, 2006.

25. J. Piantino, **J.A. Burdick**, D. Goldberg, R. Langer, L.I. Benowitz, An Injectable, Degradable Hydrogel for Trophic Factor Delivery Enhances Axonal Rewiring and Improves Performance after Spinal Cord Injury, *Experimental Neurology*, 201: 359-367, 2006.

26. C. Chung, J. Mesa, M.A. Randolph, M. Yaremchuk, **J.A. Burdick**, Influence of Gel Properties on Neocartilage Formation by Auricular Chondrocytes Photoencapsulated in Hyaluronic Acid Networks, *Journal of Biomedical Materials Research A*, 77A: 518-525, 2006.

27. C. Chung, J. Mesa, G.J. Miller, M.A. Randolph, T. Gill, **J.A. Burdick**, Effects of Auricular Chondrocyte Expansion on Neocartilage Formation in Photocrosslinkable Hyaluronic Acid Networks, *Tissue Engineering*, 12:2665-2673, 2006.

28. D.G. Anderson, C.A. Tweedie, N. Hossain, S.M. Navarro, D.M. Brey, K.J. Van Vliet, R. Langer, **J.A. Burdick**, A Combinatorial Library of Photocrosslinkable and Degradable Materials, *Advanced Materials*, 18:2614-2618, 2006.

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4. S. Khetan, V. Ramanan, and **J.A. Burdick**, 3D Encapsulation of Cells in Hydrogels using Radical and Addition Polymerizations, in *3-D Tissue Engineering (Methods in Bioengineering)* (eds. M.L. Yarmush and R.S. Langer), Artech House Publishing, 2010.

5. H. Sundararaghavan and **J.A. Burdick**, Cell Encapsulation, in *Comprehensive Biomaterials* (eds. P. Ducheyne, K.E. Healy, D.W. Hutmacher, D.W. Grainger, C.J. Kirkpatrick), Elsevier, 2011.

6. M. Guvendiren, B. Purcell, **J.A. Burdick**, Photopolymerizable Systems, in *Comprehensive Polymer Science* (eds. R. Langer and D. Tirrell), Elsevier, 2012.

7. J.S. Katz and **J.A. Burdick**, Synthetic Biomaterials, in *The Biomedical Engineering Handbook, 4th Edition* (eds. J. Fisher, A. Mikos, Tissue Engineering Section), CRC Press, 2013.

8. M. Guvendiren and **J.A. Burdick**, Hydrogels with Dynamically Tunable Properties, in *Integrative Mechanobiology: Micro and Nano Techniques in Cell Mechanobiology* (eds. Y. Sun, C. Simmons, D. Kim), Cambridge University Press, 2015.

9. S.M. Dorsey and **J.A. Burdick**, Hydrogels for Cardiac Repair, in *Applications of Hydrogels in Regenerative Medicine* (eds. A. Khademhosseini and U. Demirci), World Scientific Publishing Company, 2016.

10. K.G. Abdullah and **J.A. Burdick**, Local and Topical Treatment of Glioblastoma, in *Glioblastoma* (eds. K. Abdullah and S. Brem), Elsevier, 2016.

11. H. Sundararaghavan and **J.A. Burdick**, Cell Encapsulation, in *Comprehensive Biomaterials II* (eds. P. Ducheyne, K.E. Healy, D.W. Hutmacher, D.W. Grainger, C.J. Kirkpatrick), Elsevier, 2017.

PRESENTATIONS

Invited Lectures:

1. Utilizing Photopolymerization in the Field of Tissue Engineering: Specific Applications in Bone Regeneration, Department of Biomedical Engineering, University of Minnesota, Minneapolis, MN, March 2003.

2. Utilizing Photopolymerization in the Field of Tissue Engineering: Specific Applications in Bone Regeneration, Department of Biomedical Engineering, University of California – Davis, Davis, CA, May 2003.

3. Photopolymerizable Biomaterials, Biomedical Applications of Chemical Engineering Seminar, Department of Chemical Engineering, Massachusetts Institute of Technology, Cambridge, MA, March 2004.

4. The Nuts and Bolts of the Academic Job Search (Speaker and Panel Discussion Participant), Massachusetts Institute of Technology, Cambridge, MA, June 2004.

5. Injectable Hydrogels for Cartilage Regeneration, Musculoskeletal Research Symposium for Fellows and Junior Faculty, Harvard Medical School - Children's Hospital, Boston, MA, April 2005.

6. Cell Encapsulation in Photopolymerizable Hydrogels, Cell & Tissue Engineering: 3-D Culture in Health and Disease Symposium, Institute for Medicine and Engineering, University of Pennsylvania, Philadelphia, PA, December 2005.

7. Synthesis and Characterization of Biodegradable Polymers, Advanced Materials Lecture Series, Laboratory for Research on the Structure of Matter, University of Pennsylvania, Philadelphia, PA, April 2006.

8. Photocrosslinkable Polymers for Tissue Engineering, Tissue Engineering and Cell Based Therapies Conference, The Academy of Pharmaceutical Sciences, London, UK, May 2006.

9. Photocrosslinkable Biomaterials for Tissue Engineering, 1st Annual Methods in Bioengineering Conference, Massachusetts Institute of Technology, Cambridge, MA, July 2006.

10. Controlling Cells Through Hydrogel Structure and Chemistry, 8th New Jersey Symposium on Biomaterials Science, New Brunswick, NJ, November 2006.

11. Photocrosslinkable Hydrogels with Tailored Degradation for Growth Factor Delivery, Drug Delivery Technology, GTCbio's 2nd Modern Drug Discovery and Development Summit, Philadelphia, PA, December 2006.

12. Growth Factor Delivery for CNS Applications, CNS Injury Conference, University of Pennsylvania, Philadelphia, PA, December 2006.

13. Photocrosslinkable Polymers for Tissue Engineering and Growth Factor Delivery Applications, IUMACRO - 2nd Strategic Polymer Symposium, Polytechnic University, New York, NY, June 2007.

14. Synthetic Hydrogels to Control Cellular Behavior, 1st Annual Engineering Cell Biology Meeting, Massachusetts Institute of Technology, Cambridge, MA, August 2007.

15. Controlling Novel Photocrosslinked Biomaterial Properties through Macromer Structure, American Chemical Society Fall Meeting – PMSE Division, Boston, MA, August 2007.

16. Designing Radically Polymerizable and Degradable Biomaterials to Control Cellular Interactions, Department of Chemical and Biomolecular Engineering, University of Pennsylvania, Philadelphia, PA, November 2007.

17. Chemical and Physical Cues in Hydrogels to Control Cell Differentiation and Tissue Production, Society for Physical Regulation in Biology and Medicine 26th Annual Conference, Miami Beach, FL, January 2008.

18. Radically-Polymerized Hydrogels with Controlled Temporal Properties to Dictate Encapsulated Cellular Behavior, Materials Research Society Spring Meeting, San Francisco, CA, March 2008.

19. Biodegradable Polymers to Control Cellular Behavior for Musculoskeletal Tissue Engineering, Department of Biological Engineering, University of Missouri, Columbia, MO, April 2008.

20. Hyaluronan Hydrogels with Controlled Degradation and Cellular Interactions for Tissue Regeneration, American Chemical Society Fall Meeting – POLY Division, Philadelphia, PA, August 2008.

21. Spatially and Temporally Controlled Dynamic Hydrogels to Control Stem Cell Differentiation for Tissue Regeneration, David and Lucille Packard Foundation Fellows Meeting, Park City, UT, September 2008.

22. Engineered Biomaterials to Control Cellular Microenvironments towards Cartilage Regeneration, Penn Center for Musculoskeletal Disorders Annual Symposium, University of Pennsylvania, Philadelphia, PA, November 2008.

23. Manipulating Cell Behavior through Polymer Structure and Architecture, Department of Biomedical Engineering, Columbia University, New York City, NY, November 2008.

24. Dictating Cellular Interactions with Polymer Network Structure and Degradation, Department of Materials Science and Engineering, University of Delaware, Wilmington, DE, March 2009.

25. Designing Biomaterials for Musculoskeletal Tissue Engineering Applications, Department of Orthopaedic Surgery, Stanford University, Palo Alto, CA, April 2009.

26. Engineering Biomaterials to Control Stem Cell Microenvironments, Department of Bioengineering, Stanford University, Palo Alto, CA, April 2009.

27. Electrospun Elastomers for Tissue Reconstruction, 35th Annual Northeast Bioengineering Conference, Boston, MA, April 2009.

28. Biomaterial Cues in Stem Cell Microenvironments for Tissue Regeneration Applications, Department of Biomedical Engineering, Tufts University, Somerville, MA, April 2009.

29. Manipulating Biomaterial Properties to Control Cellular Interactions and Molecule Delivery, Department of Biomedical Engineering, Johns Hopkins University, Baltimore, MD, April 2009.

30. Engineering Hydrogels to Control Stem Cell Interactions for Regenerative Medicine, 65th International ACS Workshop on Polymers in Medicine and Biology, Santa Rosa, CA, June 2009.

31. Designing Hydrogels to Control Cellular Behavior, American Chemical Society Fall Meeting – POLY Division, Washington, DC, August 2009.

32. Tuning Hydrogel Properties for Applications in Tissue Engineering, International Conference of IEEE Engineering in Medicine and Biology Society, Minneapolis, MN, September 2009.

33. Novel Nano-composite Biomaterials that Respond to Light, International Conference of IEEE Engineering in Medicine and Biology Society, Minneapolis, MN, September 2009.

34. Dynamic Hyaluronic Acid Hydrogels for Controlled Stem Cell Behavior, Biomedical Engineering Society Annual Meeting, Pittsburgh, PA, October 2009.

35. High-throughput and Combinatorial Technologies in Biomaterial Development and Characterization, American Institute of Chemical Engineers Annual Meeting, Nashville, TN, November 2009.

36. Engineering the Chemistry and Structure of Hydrogels to Control Cellular Interactions, Department of Biomedical and Chemical Engineering, Syracuse University, Syracuse, NY, November 2009.

37. Engineering Biomaterials to Control Stem Cell Interactions for Regenerative Medicine, Department of Mechanical Engineering, Villanova University, Villanova, PA, November, 2009.

38. Biomaterials: Physiochemical Interactions, Surface Modifications, Biomaterials: Perspectives and Possibilities Workshop, University of Mauritius, Mauritius, Africa, December 2009.

39. Regenerative Medicine: Future Directions, Biomaterials: Perspectives and Possibilities Workshop, University of Mauritius, Mauritius, Africa, December 2009.

40. Biomaterials to Control Stem Cell Fate, Northeast Bioengineering Conference, Columbia University, New York, NY, April 2010.

41. High-throughput and Combinatorial Technologies in Musculoskeletal Tissue Engineering, Gordon Research Conference on Musculoskeletal Biology and Bioengineering, Andover, NH, August 2010.

42. Engineering Stem Cell Microenvironments, Materials Week, Ohio State University, Columbus, OH, September 2010.

43. Engineering Biomaterials to Control Cellular Interactions and Tissue Response, Department of Materials Science and Engineering, University of Pennsylvania, Philadelphia, PA, October 2010.

44. Engineering HA Hydrogel Chemistry and Structure to Modulate Cellular Interactions, TERMIS NA Annual Meeting, Orlando, FL, December 2010.

45. Hyaluronic Acid Hydrogels for Modulating Stem Cell Behavior and Tissue Interactions, Department of Bioengineering, University of Utah, January 2011.

46. Engineering Biomaterials to Control Stem Cell and Tissue Interactions, World Premier Institute – Advanced Institute for Materials Research Annual Workshop, Tokyo, Japan, February 2011.

47. Hydrogels with Spatially and Temporally Controlled Properties to Control Cellular Interactions, American Physical Society (APS) meeting, Dallas, TX, March 2011.

48. Dynamic Biomaterials to Modulate Stem Cell Behavior and Tissue Interactions, Department of Biomedical Engineering, Georgia Tech, Atlanta, GA, March 2011.

49. Heterogeneous and Dynamic Biomaterials to Control Stem Cell Interactions, Experimental Biology 2010, Washington, DC, April 2011.

50. Engineering Temporal Hydrogel Properties to Control Stem Cell Behavior and Tissue Formation, NIBIB Edward Nagy New Investigator Symposium, Bethesda, MD, April 2011.

51. Engineering Biomaterials to Control Local Cellular Microenvironments toward Therapy Development, Experimental Biology 2010, Washington, DC, April 2011.

52. Hyaluronic Acid Hydrogels to Modulate Cardiac Function after Myocardial Infarction, Aegean Conference on Tissue Engineering, Crete, Greece, June 2011.

53. Engineering Hydrogel Structure and Chemistry to Control Cellular Behavior, 4th Annual Conference of the UK Bioengineering Society, London, UK, September 2011.

54. Hydrogels: From Stem Cell Culture Substrates to Tissue Engineering, Wellcome Trust Centre for Stem Cell Research, University of Cambridge, Cambridge, UK, September 2011.

55. Dynamic Hydrogel Design to Modulate Stem Cell and Tissue Interactions, Ecole Polytechnique Federale De Lausanne (EPFL), Lausanne, Switzerland, September 2011.

56. Hyaluronic Acid Based Hydrogels for Stem Cell Culture and Tissue Engineering, Grenoble-Institute of Technology, Grenoble, France, October 2011.

57. Engineering Biomaterial Design to Control Stem Cell Interactions, World Conference of Regenerative Medicine, Leipzig, Germany, November 2011.

58. Hydrogels with Controlled Mechanical Properties and Degradation for Cardiac Repair, Ben-Gurion University, Israel, November 2011.

59. Modular Hydrogel Design to Control and Understand Adult Stem Cell Behavior, Department of Biomedical Engineering, Technion-Israel Institute of Technology, Israel, November 2011.

60. Polymer and Nanorod Composites for Light-Activated Material Function, Russell Berrie Nanotechnology Institute, Technion-Israel Institute of Technology, Israel, November 2011.

61. Light-Responsive Polymers and Composites for Biomedical Applications, Department of Chemistry, University of Cambridge, Cambridge, UK, December 2011.

62. Hydrogel Microenvironments that Modulate Stem Cell Behavior, Department of Bioengineering, Imperial College, London, UK, December 2011.

63. Engineering Hydrogels to Control Stem Cell Behavior, School of Pharmacy, University of Nottingham, Nottingham, UK, December 2011.

64. Engineered Hydrogels with Controlled Physical Properties for Biomedical Applications, Department of Materials Science and Engineering, University of Cambridge, Cambridge, UK, December 2011.

65. Controlling the Hydrogel and Stem Cell Interface for Tissue Engineering Applications, Center for Bioengineering, Trinity College, Dublin, Ireland, December 2011.

66. Engineering Gels and Assemblies with Controlled Properties for Biomedical Applications, RainDance Technology, Lexington, MA, February 2012.

67. Engineering the Stem Cell and Hydrogel Interface to Control Differentiation, Department of Biomedical Engineering, Brown University, Providence, RI, February 2012.

68. Dynamic and Patterned Hydrogels to Control Stem Cell Behavior, 16th Annual Hilton Head Workshop – Harnessing Biology for Regenerative Medicine, Hilton Head Island, SC, March 2012.

69. Engineering Hydrogel Structure and Degradation to Modulate Stem Cell Behavior, Department of Biomedical Engineering, Texas A&M University, College Station, TX, April 2012.

70. Tailoring Biomaterials to Modulate Cellular Interactions and Tissue Regeneration, Society of Gene and Cell Therapy Annual Meeting, Philadelphia, PA, May 2012.

71. Stem Cells and Tissue Engineering, Kwame Nkrumah University of Science and Technology (KNUST), Kumasi, Ghana, June 2012.

72. Engineering Hydrogel Structure and Degradation for Cardiac Repair, Society for Biological Engineering 6th International Conference on Bioengineering and Nanotechnology, Berkeley, CA, June 2012.

73. Hyaluronic Acid Hydrogels to Alter Left Ventricular Remodeling, Amgen, San Francisco, CA, June 2012.

74. Sequential Crosslinking – A Route to Dynamically alter Network Properties and Cellular Interactions, Polymer Networks 2012 Meeting, Jackson Hole, WY, August 2012.

75. Dynamic Hydrogels to Modulate Stem Cell Interactions and Fate Decisions, American Chemical Society Annual Fall Meeting, Philadelphia, PA, August 2012.

76. Spatially and Temporally Controlled Dynamic Hydrogels to Control Stem Cell Differentiation for Tissue Regeneration, David and Lucile Packard Foundation Fellows Meeting, Monterey, CA, September 2012.

77. Engineering Hyaluronic Acid Hydrogels for Cartilage Repair, Hospital for Special Surgery, New York, NY, October 2012.

78. Engineering Synthetic Hydrogels to Introduce Biomimetic Cues to Stem Cells, Department of Biomedical Engineering, University of Minnesota, Minneapolis, MN, December 2012.

79. Spatiotemporal Control of Hydrogel Degradation Modulates Stem Cell Fate, Cellular and Molecular Bioengineering Conference, Hawaii, January 2013.

80. Hydrogel Microenvironments to Guide Stem Cell Behavior and Fate, Tissue Engineering Program, School of Dentistry, University of Michigan, Ann Arbor, MI, January 2013.

81. Engineered Fibrous Scaffolds that Mimic Natural Extracellular Matrix, ASME Global Congress on NanoEngineering for Medicine and Biology, Boston, MA, February 2013.

82. Injectable Hydrogels with Engineered Properties and Molecule Release for Cardiac Repair, Department of Chemical and Biomolecular Engineering, Ohio State University, Columbus, OH, February 2013.

83. Engineering Hyaluronic Acid Scaffolds to Modulate Stem Cell Interactions, School of Biomedical Engineering, Drexel University, Philadelphia, PA, February 2013.

84. Injectable Hydrogels that Provide both Mechanical and Biological Signals in Cardiac Repair, Department of Chemical and Biological Engineering, University of Colorado, Boulder, CO, March 2013.

85. Advances in Hydrogel Design: Systems to Probe Cellular Microenvironments, Biomaterials Day, Vanderbilt University, Nashville, TN, March 2013.

86. Enhancing Hydrogel Functionality through the Combination of Physical and Covalent Crosslinks, American Chemical Society Annual Spring Meeting, New Orleans, LA, April 2013.

87. Engineering Hydrogels with Diverse Properties from Multifunctional Macromers, Dow Chemical, May 2013.

88. Hydrogel Interfaces to Control Stem Cell Interactions, Biological Surfaces and Interfaces Meeting, Costa Brava, Spain, July 2013.

89. Directing MSC Fate with Mechanical and Chemical Signals in 3D Hydrogels, Transformative Technology - New Directions for Tissue Engineering and Regenerative Medicine, NSF Symposium, Sonoma, CA, July 2013.

90. Engineering Developmental Signals into Hydrogels for Cartilage Repair, International Cartilage Repair Society, Izmir, Turkey, September 2013.

91. Engineering Injectable Hydrogels to Influence Left Ventricular Remodeling, Department of Biomedical Engineering, University of South Carolina, Columbia, SC, October 2013.

92. Engineering Nanofibrous Hydrogels to Control Cell Behavior, 11th International Nanomedicine and Drug Delivery Symposium (NanoDDS), San Diego, CA, October 2013.

93. Biodegradable Hydrogels for Cardiac Repair, 25th Annual Kavli Frontiers of Science Symposium, Irvine, CA, November 2013.

94. Injectable Hydrogels that Provide both Mechanical and Biological Signals in Cardiac Repair, Department of Biomedical Engineering, Temple University, Philadelphia, PA, November 2013.

95. Engineering Injectable Hydrogels for Cardiac Repair, Department of Bioengineering, Rice University, Houston, TX, March 2014.

96. Engineering Injectable Hydrogels to Provide Mechanical and Biological Signals to Infarcted Myocardium, Department of Polymer Science and Engineering, University of Massachusetts, Amherst, MA, March 2014.

97. Engineering In Vivo Cellular Responses through Biomaterial Design, Engineering Cell Fate and Function Keystone Symposium, Squaw Creek, Olympic Valley, CA, April 2014.

98. Dynamic Biomaterials to Control Cell Behavior and Tissue Repair, Society for Biomaterials Annual Meeting, Denver, CO, April 2014.

99. Engineering 3D Hydrogels to Control Stem Cell Shape and Fate, Society for Biomaterials Annual Meeting, Denver, CO, April 2014.

100. Engineering Functional Hydrogels for Repair of Cardiac Tissue, Materials Research Society Annual Meeting, San Francisco, CA, April 2014.

101. Engineering Biochemical and Biomechanical Signals in Hydrogels to Modulate Stem Cell-Niche Interactions, Materials Research Society Annual Meeting, San Francisco, CA, April 2014.

102. Instructive Hydrogels to Control Adult Stem Cell Fate, TERMIS-European Union Annual Meeting, Genova, Italy, June 2014.

103. Engineering Synthetic Environments to Guide Stem Cell Behavior, International Society for Stem Cell Research Annual Meeting, Vancouver, CA, June 2014.

104. Engineering Injectable Hydrogels to Influence Cardiac Repair, ADATE 5th Tissue Engineering Symposium, Sydney, Australia, August 2014.

105. Engineering Fibrous Hydrogels for Cartilage Repair, ADATE 5th Tissue Engineering Symposium, Sydney, Australia, August 2014.

106. Biomaterials for Treating Myocardial Infarctions, US Frontiers of Engineering Symposium, Irvine, CA, September 2014.

107. Engineering Cardiac Tissue Response Post-Infarction through Biomaterial Design, Department of Biomedical Engineering, Cornell University, Ithaca, NY, September 2014.

108. Shear-thinning and Self-healing Hydrogels as Injectable Biomaterials and for 3D-printing Applications, Biofabrication, Pohang, South Korea, September 2014.

109. Injectable Hydrogels with Engineered Properties for Biomedical Applications, Institute of Biomedical Engineering, National Taiwan University, Taiwan, October 2014.

110. Engineering Injectable Hydrogels to Alter Biological and Mechanical Signals after Infarction, Chemistry-Biology Interface Training Program, University of Illinois, Urbana-Champaign, IL, November 2014.

111. Engineering Injectable Hydrogels to Alter Biological and Mechanical Signals after Infarction, Department of Chemical and Materials Engineering, University of Kentucky, Lexington, KY, November 2014.

112. Engineering Injectable Hydrogels to Influence Cardiac Repair, Department of Bioengineering, University of Washington, Seattle, WA, February 2015.

113. Hydrogels for Cardiac Repair, Cardiovascular Institute, University of Pennsylvania, Philadelphia, PA, February 2015.

114. Engineering Injectable Hydrogels to Alter Left Ventricular Remodeling after Infarction, College Park, MD, March 2015.

115. Engineering Injectable Hydrogels to Alter Biological and Mechanical Signals after Infarction, Department of Materials Science and Engineering, University of Michigan, Ann Arbor, MI, April 2015.

116. Injectable Hydrogels in Translational Cardiac Applications, Engineering Complex Tissues Symposium, Drexel University, Philadelphia, PA, April 2015.

117. Biomaterials for Cartilage Repair, 4th Annual Penn Cartilage Repair Symposium, University of Pennsylvania, Philadelphia, PA, April 2015.

118. Engineering Biomaterials as In Vitro Models and for Biomedical Therapies, Centre for Stem Cells & Regenerative Medicine, King's College London, London, UK, May 2015.

119. Engineered Fibrous Hydrogels for Applications in Regenerative Medicine, 5th Symposium on Interface Biology of Implants, Rostock, Germany, May 2015.

120. Supramolecular Hydrogels from Natural Polymers, Biomaterials and Tissue Engineering Gordon Research Conference, Girona, Spain, July 2015.

121. Photocrosslinked Electrospun Fibrous Hydrogels, Photopolymerization Fundamentals 2015, Boulder, CO, September 2015.

122. Engineering Adult Stem Cell Microenvironments for Tissue Repair, Oklahoma Center for Adult Stem Cell Research, Oklahoma City, OK, September 2015.

123. Biomaterial-based Therapies to Treat Myocardial Infarction, University of Illinois at Chicago, Chicago, IL, September 2015.

124. Engineered Hydrogel Design for Controlled Molecule Delivery, Drug Delivery Conference, Tucson, AZ, September 2015.

125. Engineering Hydrogels for Cardiac Repair, Department of Bioengineering, Arizona State University, Phoenix, AZ, October 2015.

126. Engineering Hydrogels for Cardiac Repair, Department of Bioengineering, Duke University, Durham, NC, October 2015.

127. Engineering Hydrogels for Tissue Repair, Department of Chemical Engineering, University of Virginia, Charlottesville, VA, October 2015.

128. Biodegradable Hydrogels for Cardiac Repair, University City Science Center, Philadelphia, PA, October 2015.

129. Engineered Hydrogel Design for Controlled Molecule Delivery to the Heart, CT3N Symposium, University of Pennsylvania, Philadelphia, PA, November 2015.

130. Engineering Hydrogels for Cartilage Tissue Engineering, Glasgow Orthopaedic Research Initiative – University of Glasgow, Glasgow, Scotland, December 2015.

131. Engineering Hydrogels for Tissue Repair, Department of Biomedical Engineering, University of Delaware, Newark, DE, March 2016.

132. Injectable Biomaterials for Biomedical Applications of Tissue Repair, Department of Materials Science and Engineering, Johns Hopkins University, Baltimore, MD, March 2016.

133. Extrusion-Based 3D Printing of Biodegradable Polymer Networks for Biomedical Applications, Materials Research Society, Phoenix, AZ, March 2016.

134. Engineered Biopolymer Hydrogels for Biomedical Applications, 9th Annual Symposium on the Structure and Properties of Biopolymers, Universidad de Puerto Rico en Humacao, San Juan, Puerto Rico, May 2016.

135. Hydrogels to Deliver, Recruit, and Control Stem Cell Behavior In Vivo, Emerging Cell-Instructive Biomaterials, World Biomaterials Congress, Montreal, Canada, May 2016.

136. Engineering Shear-thinning Supramolecular Hydrogels for Biomedical Applications, ACS Middle Atlantic Regional Meeting, Bronx, NY, June 2016.

137. Hydrogels to Control and Recruit Stem Cells, eCM XXVII: Stem Cells, Bone Fixation, Repair & Regeneration, Davos, Switzerland, June 2016.

138. Engineering Hydrogels to Control and Recruit Stem Cells, 2nd International Symposium on Frontiers in Biomaterial Science, Leipzig, Germany, June 2016.

139. Multiscale Engineering of Hydrogels for Controlling Cell Behavior, Signal Transduction by Engineered Extracellular Matrices Gordon Research Conference, Biddeford, ME, June 2016.

140. Extrusion-based 3D Printing of Biodegradable Hydrogels for Biomedical Applications, American Chemical Society Annual Meeting, Philadelphia, PA, August 2016.

141. Engineered Injectable Supramolecular Hydrogels for Myocardial Applications, American Chemical Society Annual Meeting, Philadelphia, PA, August 2016.

142. Injectable Shear-thinning and Self-Healing Hydrogels for Tissue Repair and Biofabrication Applications, Department of Materials Science and Engineering, University of Florida, Gainesville, FL, September 2016.

143. Engineered Hydrogels for Applications in Tissue Repair, Zheijang University, Hangzhou, China, October 2016.

144. Injectable Shear-thinning and Self-Healing Hydrogels for Tissue Repair and Biofabrication Applications, International Conference of Molecular Engineering of Polymers, Shanghai, China, October 2016.

145. Injectable Shear-Thinning Hydrogels for Biomedical Applications, Symposium on Biomaterials Science, Woodbridge, NJ, October 2016.

146. Extrusion-based 3D Printing of Biodegradable Hydrogels, International Society for Biofabrication, Winston-Salem, NC, October 2016.

147. Injectable Shear-thinning and Self-Healing Hydrogels for Tissue Repair and Biofabrication Applications, Department of Materials Science & Engineering, University of Pennsylvania, Philadelphia, PA, November 2016.

148. Injectable Shear-thinning and Self-Healing Hydrogels for Tissue Repair and Biofabrication Applications, Department of Chemical and Biomolecular University, Lehigh University, Bethlehem, PA, November 2016.

149. Injectable Shear-thinning and Self-Healing Hydrogels for Tissue Repair and Biofabrication Applications, Department of Chemistry, Old Dominion University, Norfolk, VA, November 2016.

150. Hierarchical Hydrogels to Recruit and Control Cell Behavior In Vivo, Materials Research Society Fall Meeting, Boston, MA, November 2016.

151. Injectable Shear-thinning and Self-Healing Hydrogels for Tissue Repair and Biofabrication Applications, Department of Biomedical Engineering, University at Buffalo, Buffalo, NY, December 2016.

152. Engineering Supramolecular Assemblies as Injectable Biomaterials, Society for Biomaterials Annual Meeting, Minneapolis, MN, April 2017.

153. Injectable Shear-thinning and Self-Healing Hydrogels for Tissue Repair and Biofabrication Applications, Materials Science & Engineering Department, Drexel University, Philadelphia, PA, May 2017.

154. Extrusion-based Printing of Hydrogel Bioinks, 2nd International Conference on 3D Printing in Medicine, Mainz, Germany, May 2017.

155. Functional Hydrogels for Biomedical Applications, Canadian Society for Biomaterials, Winnipeg, Canada, May 2017.

156. Injectable Shear-thinning and Self-Healing Hydrogels for Tissue Repair and Biofabrication Applications, Materials Science & Engineering, Stanford University, Palo Alto, CA, June 2017.

157. Guest-host Interactions for the Assembly of Injectable Hydrogels, American Chemical Society Annual Meeting, Washington DC, August 2017.

158. Engineered Hydrogels for Musculoskeletal Tissue Repair, American Chemical Society Annual Meeting, Washington DC, August 2017.

159. Injectable Shear-thinning and Self-Healing Hydrogels for Tissue Repair, Department of Biomedical Engineering, Penn State University, University Park, PA, October 2017.

160. Extrusion-based 3D Printing of Biodegradable Polymers, International Society for Biofabrication, Beijing, China, October 2017.

161. Injectable Shear-thinning and Self-Healing Hydrogels for Tissue Repair, Department of Biomedical Engineering, Peking University, Beijing, China, October 2017.

162. Engineered Hydrogels for Musculoskeletal Tissue Repair, Materials Research Society Fall Meeting, Boston, MA, November 2017.

163. Engineered Nanofibrous Materials for Biomedical Applications, Materials Research Society Fall Meeting, Boston, MA, November 2017.

164. Injectable Shear-thinning and Self-Healing Hydrogels for Tissue Repair, Department of Biomedical Engineering, University of Toronto, Canada, January 2018.

165. Injectable Shear-thinning and Self-Healing Hydrogels for Tissue Repair, Royal College of Surgeons in Ireland, Dublin, Ireland, February 2018.

166. Shear-thinning and Self-healing Hydrogels for Therapeutic Delivery, American Chemical Society, New Orleans, LA, March 2018.

167. Engineered Hydrogels to Enable Tissue Regeneration, Regenerative Medicine Workshop, Charleston, SC, March 2018.

168. Engineering Hydrogel Properties through Macromer Design, Society for Biomaterials, Atlanta, GA, April 2018.

169. Engineering Functionality into Smart Injectable Hydrogels, Society for Biomaterials, Atlanta, GA, April 2018.

170. Injectable Shear-thinning and Self-Healing Hydrogels for Tissue Repair, Topics in Bioengineering, Harvard University, Cambridge, MA April 2018.

171. Scaffold Fabrication for Musculoskeletal Tissue Repair: From Fibers to 3D Printing, Department of Aerospace and Mechanical Engineering, Notre Dame, South Bend, IN, May 2018.

172. Scaffold Fabrication for Musculoskeletal Tissue Repair: From Fibers to 3D Printing, School of Dentistry, Oregon Health and Science University, Portland, OR, May 2018.

173. Extrusion-based 3D Printing of Biodegradable Hydrogels, World Congress of Biomechanics, Dublin, Ireland, July 2018.

174. Shear-thinning and Self-healing Hydrogels for Applications in Tissue Repair and Biofabrication, Berlin-Brandenburg Center for Regenerative Therapies, Charite, Berlin, Germany, August 2018.

175. Designing Inks for Extrusion-based 3D Printing, Advances in Tissue Engineering, Rice University, August 2018.

176. Biomaterials in the Repair and Regeneration of Cardiac Tissue after Infarction, Biofrontiers Symposium, Boulder, CO, August 2018.

177. Designing and Processing Hydrogel Bioinks for 3D Printing Applications, European Society for Biomaterials, Maastricht, Netherlands, September 2018.

178. Injectable Hydrogels in Tissue Repair and Biofabrication, University Medical Center - Utrecht, Utrecht, Netherlands, September 2018.

179. Designing Bioinks for 3D Printing, International Society for Biofabrication, Wurzburg, Germany, October 2018.

180. Engineering Hydrogels for Mechanobiology and Therapeutic Applications, Mechanobiology in Biomimetics - LaNSBioDyT, Mexico City, Mexico, November 2018.

182. Hydrogel Bioinks for 3D Printing Applications, Materials Research Society Fall Meeting, Boston, MA, November 2018.

183. Designing Bioinks for 3D Printing, 3D Printing in Medicine Summer School, University of Otago, Christchurch, New Zealand, February 2019.

184. Bioinks and Fibers for Biomedical Applications, University of Otago, Dunedin, New Zealand, February 2019.

185. Engineering Injectable HA Hydrogels for Therapeutic Applications, *Acta Biomaterialia* Award Lecture, Society for Biomaterials, Seattle, WA, April 2019.

186. Engineering and Understanding the 3-Dimensional Cell-Hydrogel Interface, Engineering Biology for Medicine, Duke University, Durham, NC, May 2019.

187. Engineering Hydrogels for Applications in Biofabrication and Tissue Repair, 4th Annual Penn Polymer Symposium, Philadelphia, PA, May 2019.

188. Engineering Hyaluronic Acid Hydrogels for Biomedical Applications, Department of Bioengineering, Imperial College, London, England, June 2019.

189. Engineered Hydrogels for 3D Printing Applications, Biofabrication & Biomanufacturing Europe 2019, Rotterdam, Netherlands, June 2019.

190. Engineering Hyaluronic Acid Hydrogels for Biomedical Applications, Institute of Materials Science and Technology, TU Wien, Vienna, Austria, July 2019.

191. Engineered Hydrogels for 3D Printing Applications, Utrecht University, Utrecht, Netherlands, July 2019.

192. Designing and Processing Hydrogel Bioinks for 3D Printing Applications, 3D-Printing 2019 Conference, Dartmouth College, NH, August 2019.

193. Designing Inks for Extrusion-based 3D Printing, Advances in Tissue Engineering, Rice University, August 2019.

194. Granular Hydrogels for Biomedical Applications, Chinese Biomaterials Congress & International Symposium on Advanced Biomaterials, Dalian, China, August 2019.

195. Engineering Hyaluronic Acid Hydrogels for Biomedical Applications, Institute of Polymer Science and Engineering, National Taiwan University, Taipei, Taiwan, August 2019.

196. Engineering Hyaluronic Acid Hydrogels for Biomedical Applications, University of Oregon, Eugene, OR, September 2019.

197. Advances in the Processing of Photocurable Hydrogels for 3D Printing, Photopolymerization Fundamentals 2019, Monterey, CA, September 2019.

198. Engineering Injectable Hydrogels for Therapeutic Applications, 7th US-Korea Joint Biomedical Engineering Workshop, Biomedical Engineering Society Annual Meeting, Philadelphia, PA, October 2019.

199. Engineering Hyaluronic Acid Hydrogels for Biomedical Applications, Department of Biomedical Engineering, Washington University, St. Louis, MO, November 2019.

200. Granular Hydrogels for Biomedical Applications, Materials Research Society, Boston, MA, December 2019.

201. Engineering and Understanding the Cell/Hydrogel Interface in Tissue Repair, Virtual Tissue Talks, Columbia University (virtual), May 2020.

202. Engineering Hydrogel Properties for Cartilage Repair, Penn Cartilage Repair Symposium, University of Pennsylvania (virtual), September 2020.

203. Biofabricaton Approaches to Organize Engineered Tissues, CELL-MET, Boston University (virtual), November 2020.

204. Biomaterial Approaches to Endogenous Tissue Repair in the Heart, Materials Research Society (virtual), December 2020.

205. Designing Hydrogel Inks for Extrusion Printing, World Biomaterials Congress (virtual), December 2020.

206. Advances in Shear-thinning Hydrogels for Biofabrication and Tissue Repair, Biofrontiers Institute and Department of Chemical and Biological Engineering, University of Colorado Boulder (virtual), February 2021.

207. Designing and Implementing Shear-thinning Hydrogels in Biofabrication, ISBF Virtual Seminar Series (virtual), February 2021.

208. Advances in Shear-thinning Hydrogels for Biofabrication and Tissue Repair, Department of Chemical Engineering, Pennsylvania State University (virtual), April 2021.

209. Advances in Shear-thinning Hydrogels for Biofabrication and Tissue Repair, Terasaki Institute (virtual), April 2021.

210. Advances in Shear-thinning Hydrogels for Biofabrication and Tissue Repair, Department of Chemistry, University of Aveiro, Portugal (virtual), May 2021.

211. Advances in Shear-thinning Hydrogels for Biofabrication and Tissue Repair, Departments of Chemistry and Biomedical Engineering, University of California Irvine (virtual), May 2021.

212. Embedded 3D Bioprinting within Hydrogel Suspension Media, Canadian Biomaterials Society, University of Waterloo, Canada (virtual), May 2021.

213. Advances in Shear-thinning Hydrogels for Biofabrication and Tissue Repair, TERM STEM 2021, University of Minho, Portugal (virtual), June 2021.

214. Designing Inks for Extrusion-based 3D Printing, Advances in Tissue Engineering, Rice University (virtual), August 2021.

215. Embedded 3D Bioprinting within Hydrogel Suspension Media, 3rd Biointerfaces International Conference, University of Zurich (virtual), August 2021.

216. Advances in Shear-thinning Hydrogels for Biofabrication and Tissue Repair, Health Sciences District Research Seminar Series, University of Missouri – Kansas City (virtual), August 2021.

217. Microfluidics-generated Microgels for the Fabrication of Biomedical Granular Hydrogels, Centre for Research and Applications in Fluidic Technologies, University of Toronto, Canada (virtual), August 2021.

218. Engineering Granular Hydrogels towards Tissue Repair, Virtual Seminars in Biomedical Science, September 2021.

219. Engineering Granular Hydrogels for Biomedical Applications, Next Generation Tissue Engineering Symposium, Tissue Engineering Resource Center (virtual), September 2021.

220. Embedded 3D Bioprinting within Hydrogel Suspension Media, 3D Bioprinting Conference (virtual), AIChE, September 2021.

221. Engineering Granular Hydrogels for Biomedical Applications, Korean Society for Biomaterials Annual Meeting, Jeju Island, South Korea (virtual), September 2021.

222. Engineering Granular Hydrogels for Biomedical Applications, Harvard Topics in Bioengineering, Harvard University (virtual), October 2021.

223. Engineering Granular Hydrogels for Biomedical Applications, Materials Science and Engineering Seminar Series, Ecole Polytechnique Fédérale de Lausanne (EPFL) (virtual), October 2021.

224. Engineering Granular Hydrogels for Biomedical Applications, Department of Materials Science and Engineering Colloquia, University of Illinois at Urbana-Champaign (virtual), October 2021.

225. Biofabrication Approaches for Cartilage Repair, Symposium on Cartilage Repair Strategies to Alleviate Arthritis Pain, Department of Veterans Affairs (virtual), February 2022.

226. Engineering Granular Hydrogels for Biomedical Applications, Department of Biomedical Engineering, University of South Dakota (virtual), April 2022.

227. Microfluidic-generated Microgels for the Assembly of Biomedical Granular Hydrogels, ACS Colloid and Surface Science Symposium, Golden, CO, July 2022.

228. Biofabrication Approaches to Engineer 3D ECM Structure and Organization, Signal Transduction by Engineered Extracellular Matrices Gordon Research Conference, Manchester, NH, July 2022.

229. Advances in the Additive Manufacturing of Hydrogels for Biomedical Applications, Additive Manufacturing of Soft Materials Gordon Research Conference, Ventura, CA, August 2022.

230. Designing Inks for Extrusion-based 3D Printing, Advances in Tissue Engineering, Rice University (virtual), August 2022.

231. Leveraging Biomaterials Design to Improve Engineered Cartilage Properties, 7th Annual Vail Scientific Summit, Vail, CO, August 2022.

232. Engineering Granular Hydrogels for Biomedical Applications, Department of Pharmacology & Regenerative Medicine, University of Illinois at Chicago (virtual), October 2022.

233. Engineering Granular Hydrogels for Biomedical Applications, Webinar on *Biomaterials Science* 10th Anniversary, November 2022.

234. Guiding Musculoskeletal Tissue Formation with Engineered Hydrogels, ETH Zurich Materials & Processes Distinguished Lecture Series on “Engineering with Living Materials), ETH (virtual), February 2023.

235. Engineering Granular Hydrogels for Biomedical Applications, Biomaterials Day - University of Colorado Anschutz, March 2023.

236. Engineering Granular Hydrogels for Biomedical Applications, Scandanavian Society for Biomaterials, Roros, Norway, March 2023.

237. Department of Biotechnology and Food Science, Norwegian University of Science and Technology, Trondheim, Norway, March 2023.

238. Engineering Hydrogel Structure through Lithography-based Biofabrication Approaches, TERMIS-European Union Annual Meeting, Manchester, UK, March 2023.

239. Australasian Society of Biomaterials and Tissue Engineering, Christchurch, New Zealand, April 2023.

240. 3rd Advanced Materials and 3D Printing in Regenerative Medicine Workshop, Christchurch, New Zealand, April 2023.

PATENTS

1. D.G. Anderson, **J.A. Burdick**, R. Langer, Crosslinked, Degradable Polymers and Uses Thereof (US8808681).

2. C.J. Bettinger, J.M. Karp, S.J. Kim, R.S. Langer, A. Zumbuehl, J.P. Bruggeman, L. Silva-Ferreira, C. Nijst, **J. Burdick**, Biodegradable Elastomers (US8143042, CA2636817).

3. **J. Burdick,** C.J. Bettinger, J.P. Bruggeman, L. Silva-Ferreira, J.M. Karp, R.S. Langer, C. Nijst, A. Zumbuehl, S.J. Kim, Method Comprising contacting Tissue with a Cross-linkable Polyester Prepolymer (US8691203).

4. **J.A. Burdick**, R.C. Gorman, J.H. Gorman, B.P. Purcell, Protease Triggered Release of Molecules from Hydrogels (US9694081)

5. B.P. Purcell, **J.A. Burdick**, R.C. Gorman, J.H. Gorman, Protease Triggered Release of Molecules from Hydrogels (US9919054)

6. B.P. Purcell, **J.A. Burdick**, Protease Triggered Release of Molecules from Hydrogels (US10046053).

7. **J.A. Burdick,** J.L. Ifkovits, R.C. Gorman, J.H. Gorman, Infarction Treatment Compositions and Methods (US9486404).

8. C.B. Rodell, **J.A. Burdick**, Stabilizing Shear-Thinning Hydrogels (US9827321).

9. C. Highley, **J.A. Burdick**, 3-Dimensional Printing of Supramolecular Hydrogels (US10828399).

10. **J.A. Burdick**, S. Sahoo, C. Chung, Hydrolytically Degradable Polysaccharide Hydrogels (US11090387).

11. S. Gerecht, **J.A. Burdick**, G. Vunjak-Novakovic, R. Langer, Propagation of Undifferentiated ESCs in HA Hydrogels (US/2007/0122392, WO/2007/002664), pending.

12. K.G. Abdullah, L.L. Wang, **J.A. Burdick**, Hydrogel Compositions (US20190290769), pending.

13. L. Wang, **J.A. Burdick**, E. Morrisey, Compositions and Methods for Cardiac Regeneration (US20200108013), pending.

14. J.M. Patel, C. Loebel, A.R. Martin, R.L. Mauck, **J.A. Burdick**, Systems for Targeted Tissue Biosealing or Repair (US20210338887), pending.

15. B.P. Purcell, L. Wang, **J.A. Burdick**, Injectable Hydrogels for Local Delivery to the Heart (US20210322652), pending.

16. M. Davidson, **J.A. Burdick**, Self-Adhesive Multi-Fiber Materials (US20210308320), pending.

17. D.K. Cullen, W.J. Gordian-Velez, H.I. Chen, **J.A. Burdick**, Tissue Engineered Neural Networks in Tailored Hydrogel Sheaths and Methods for Manufacturing the same, disclosure submitted.

RESEARCH FUNDING

Current

(PI: Stach, Investigator: **Burdick**) UPenn LRSM MRSEC — 9/17-8/23
IRG2: Structural Chemo-Mechanics of Fibrous Networks — $75k/year ($450k total costs)

(PIs: **Burdick** and Mauck) NIH/NIAMS R01 — 2/20-11/24
Dynamic Fibrous Scaffolds for Engineering Dense Connective Tissues — ~$150k/year ($1000k total costs)

(PIs: **Burdick** and Mauck) NIH/NIAMS R01 — 5/20-4/25
Engineering Developmental Microenvironments: Cartilage Formation and Maturation — ~$150k/year ($1000k total costs)

(PI: Sinusas) NIH/NHLBI R01 — 8/21-7/25
Imaging and Targeting Lung Proteolysis in ARDS — ~$80k/year ($320k total costs)

(PI: **Burdick**) NIH/NHLBI R01 — 5/22-4/26
Engineered Granular Hydrogels for Endogenous Tissue Repair — ~250k/year ($1300k total costs)

(PI: Shenoy) NSF Science and Technology Center (STC) — 11/16-8/26
Center for Engineering Mechanobiology — ~$80k/year ($800k total costs)

Previous

(PI: **Burdick**) Paralyzed Veterans of America Spinal Cord Research Foundation — 1/03-12/04

A Tissue Engineering Approach for the Treatment of Spinal Cord Injuries — $50k/year direct costs ($100k total costs)

(PI: **Burdick**) UPenn University Research Foundation — 7/06-6/07
Electrospinning of Photopolymerizable Networks for Meniscal Tissue Regeneration — ($46k total costs)

(PI: Chen, Co-PI: **Burdick**) Penn Institute for Regenerative Medicine Program — 2/08-1/09
Mesenchymal Stem Cell Biology — $20k total costs

(PIs: **Burdick** and Mauck) Penn Chemical Biology in Translation (CBIT) Program — 2/08-1/09
Identifying Novel Promoters of Human MSCs through Chemical Library Screening — $15k total costs

(PI: **Burdick**) NIH/NIDCR K22 Scholar Development and Career Transition Award — 3/04-2/09
Chondrogenesis in Enzymatically Degradable Hydrogels — $125k/year direct costs ($629k total costs)

(PI: **Burdick**) The Center for Research in FOP and Related Disorders — 1/07-6/09
Non-viral Gene Therapy Approaches for Bone Growth — $50k/year ($100k total costs)

(PI: Mauck, Co-PI: **Burdick**) Institute on Aging — 7/08-6/09
Age-Dependence of Functional ECM Formation by MSCs for Cartilage Regeneration — ~$25k total costs

(PI: **Burdick**) American Chemical Society Petroleum Research Fund — 9/07-8/09
Novel Degradable Polymer Synthesis to Investigate Network Formation and Structure — $20k/year ($40k total costs)

(PI: **Burdick**) Coulter Foundation Early Career Award — 8/08-7/10
Injectable and Biodegradable Elastomers to Alter Early Infarct Expansion — $120k/year ($240k total costs)

(PIs: Hankenson and **Burdick**) Penn Institute for Regenerative Medicine — 10/09-9/10
Enhancing Notch Signaling for Mesenchymal Progenitor Expansion and Bone Regeneration — $50k total costs

(PI: Garino, Co-PI: **Burdick**) Veterans Health Administration — 1/09-12/10
Injectable Synthetic Bone Grafts to Promote Bone Regeneration — ~$150k total costs

(PI: **Burdick**) UPenn LRSM MRSEC Pilot Grant — 11/06-10/11
Photopolymerized Hydrogels and Composites with Controlled Degradation and Mechanics — $40k/year ($200k total costs)

(PI: J. Gorman, Co-PI: **Burdick**) Penn Institute for Translational Medicine and Therapeutics — 2/10-1/12
Minimally Invasive Off-Pump Mitral Valve Replacement — $150k total costs

(PI: **Burdick,** Co-PI: Gerecht) NIH U54 JHU Cancer Center Pilot Grant — 6/11-5/12
Modulated 3-D Environments to Study Cancer-Endothelial Cell Interactions — $50k total costs

(PI: **Burdick**) Packard Foundation Fellowship for Science and Engineering — 1/08-12/12
Engineered Smart Materials to Define and Switch Cellular Phenotypes — $175k/year ($825k total costs)

(PIs: **Burdick** and Mauck) NIH/NIBIB R01 — 4/09-2/13
Engineering Developmental Microenvironments: Cartilage Formation and Maturation — $113/year ($690k total costs)
*Supplement (9/10-12/12): $150k total costs

(PI: **Burdick**) Penn Institute for Regenerative Medicine — 4/12-3/13
Injectable Hydrogels to Deliver Biologics in Obstructive Nephropathy — $50k total costs

(PI: **Burdick**) Penn Center for Musculoskeletal Disorders — 7/12-6/13
Acellular Fibrous Scaffolds for Stem Cell Recruitment and Cartilage Repair — $35k total costs

(PI: Hankenson, Co-PI: **Burdick**) Department of Defense — 10/10-9/13
Notch Signaling in Bone Regeneration — $50k/year ($240k total costs)

(PIs: **Burdick** and Mauck) NIH/NIAMS R01 — 6/09-5/14
Dynamic Fibrous Scaffolds for Engineering Dense Connective Tissues — $113/year ($860k total costs)

*ARRA Supplement (Summer Research Experiences, Summers 2009/2010): $39.5k total costs

(PI: **Burdick**) National Science Foundation CAREER Award 7/09-6/14
CAREER: Spatially Controlled Cellular Behavior in 3D Hydrogels: An Integrated Research, Teaching, and Outreach Approach $80k/year ($400k total costs)

(PI: Gerecht, Co-PI: **Burdick**) NIH/NHLBI R01 7/11-5/16
Engineered Stem Cell Microenvironments for Controlled Vasculogenesis $80k/year ($615k total costs)

(PI: Steinberg, Co-PI: **Burdick**) Veterans Health Administration 7/12-6/16
Cartilage Repair with Stem-Cell Laden Hyaluronic Acid Hydrogels ~$200k total costs to Burdick

(PIs: **Burdick** and Spinale) NIH/NHLBI R01 8/12-7/16
Localized Targeting of Matrix Proteases Following Myocardial Infarction ~$100k/year ($630k total costs)

(PI: Yodh, Investigator: **Burdick**) UPenn LRSM MRSEC 9/11-8/17
IRG2: Biologically Inspired Assemblies $60k/year ($360k total costs)

(PIs: **Burdick**, Mauck, Carey) American Orthopaedic Society for Sports Medicine 5/16-4/18
Acellular Bioactive and Dynamic Nanofibrous Scaffolds to Promote Cartilage Repair ~$125/year ($250k total costs)

(PIs: **Burdick** and Sinusas) CTSA SPIRiT Award 7/17-6/18
Molecular Guided Delivery of Bioresponsive Hydrogels to the Heart $50k total costs

(PI: Gorman, Co-PI: **Burdick**) NIH/NHLBI R01 3/15-6/18
Surgery to Prevent Post-Infarction Ventricular Remodeling $80k/year ($615k total costs)

(PI: Esterhai/Mauck, Co-PI: **Burdick**) Veterans Health Administration 12/14-11/18
Engineered Multi-Functional Nanofibrous Meniscus Implants ~$200k total costs to Burdick

(PI: **Burdick**) American Heart Association 1/14-12/18
Engineered Hydrogels for Delivery to Infarcted Myocardium ~$80k/year ($400k total costs)

(PIs: **Burdick** and Mauck) NIH/NIBIB R01 5/14-4/19
Engineering Developmental Microenvironments: Cartilage Formation and Maturation ~$115k/year ($690k total costs)

(PIs: **Burdick** and Mauck) NIH/NIAMS R01 9/14-12/19
Dynamic Fibrous Scaffolds for Engineering Dense Connective Tissues ~$150k/year ($1000k total costs)

(PI: **Burdick**) NIH/NHLBI R41 8/18-12/19
Myocardial Delivery of MMP Inhibiting Hydrogels ~$110k ($175k total costs)

(PI: **Burdick**) NSF/BSF 9/16-8/20
Ultra-Tough Double-Network Hydrogels for Cartilage Repair ~$150k/year ($450k total costs)

(PI: Morrisey) NIH R01 9/16-6/20
Molecular Pathways Controlling Alveolar Epithelial Remodeling ~$30k/year ($120k total costs)

(PI: Spinale) NIH R01 8/16-7/20
Therapeutic Targeting of TIMP-4 in Hypertrophy Failure ~$40k/year ($160k total costs)

(PI: Mauck) Department of Veterans Affairs 6/20-5/22
Hydrogel Delivery of Extracellular Vesicles to Treat Osteoarthritis $100k/year ($200k total costs)

(PI: Atluri) NIH/NHLBI R01 7/17-6/22
A Novel Shear-Thinning Hydrogel System for Advanced Cellular Therapy ~$20k/year ($140k total costs)

(PIs: **Burdick** and Mauck) AO Foundation 1/17-8/22
Hydrogel Bioinks for Cell Encapsulation and 3D Printing $70k/year ($350k total costs)

(PIs: **Burdick**, Sinusas, Duncan) NIH R01 12/17-11/22
Image-Guided Delivery of Bioresponsive Hydrogels ~$125k/year ($500k total costs)

PROFESSIONAL SOCIETIES AND MEETINGS

Society Membership

Member, Biomedical Engineering Society (BMES)
Member, Society for Biomaterials (SFB)
Member, American Chemical Society (ACS)
Member, Materials Research Society (MRS)
Member, Society for Physical Regulation in Biology and Medicine (SPRBM)
Member, Tissue Engineering and Regenerative Medicine International Society (TERMIS)
Member, American Heart Association (AHA)
Member, International Society for Biofabrication (ISBF)

Society Leadership

National Meetings Committee, BMES, 2017-Present
Board of Directors, International Society for Biofabrication, 2014-2018

Member, Awards, Ceremonies, & Nominations Committee, Society for Biomaterials, 2010-2012
Member, Membership Committee, TERMIS-AM, 2010-2012

International Advisory Board, TERMIS-EU 2010 Conference, Galway, Ireland, June 2010
International Advisory Board, TERMIS World Congress, Vienna, Austria, September 2012
Scientific Advisory Board, TERMIS-AM Meeting, Atlanta, GA, November 2013
Scientific Advisory Board, TERMIS-AM Meeting, Washington DC, December 2014
Scientific Advisory Board, EMN Meeting on Hydrogel Materials, Singapore, May 2016
Scientific Advisory Board, TERMIS-EU Meeting, Uppsala, Sweden, June 2016
Scientific Advisory Board, TERMIS-AM Meeting, San Diego, CA, December 2016
Scientific Advisory Board, TERMIS-EU Meeting, Krakow, Poland, June 2022

Session/Meeting Organizing/Chairing

Vice-Chair, Gordon Research Conference on Signal Transduction by Engineered Extracellular Matrices, Biddeford, ME, June 2012
Track Chair (Biomaterials), Biomedical Engineering Society Annual Meeting, Seattle, WA, September 2013
Conference Chair, Gordon Research Conference on Signal Transduction by Engineered Extracellular Matrices, Waltham, MA, June 2014
Conference Chair, Materials Research Society Fall Meeting, Boston, MA, November 2017
Conference Chair, Biomedical Engineering Society Annual Meeting, Philadelphia, PA, October 2019

Session Organizer, Polysaccharide-Based Biomaterials, Society for Biomaterials Annual Meeting, Chicago, IL, April 2007
Symposium Organizer, Controlling Cell Functions through Polymer Synthesis and Engineering, PMSE - American Chemical Society Spring Meeting, New Orleans, LA, April 2008
Symposium Organizer, Engineering Artificial Stem Cell Environments, 8th World Biomaterials Conference, Amsterdam, Netherlands, May 2008
Symposium Organizer, Engineering Biomaterials for Regenerative Medicine, Materials Research Society Annual Meeting, Boston, MA, November 2009
Session Organizer, Stem Cell Microenvironments, Society for Biomaterials Annual Meeting, Seattle, WA, April 2010
Session Organizer, Controlled Release and Presentation Systems for Regulating Cell Behavior, Society for Biomaterials Annual Meeting, Seattle, WA, April 2010
Symposium Organizer, Cagematch 2011: Natural versus Synthetic Biomaterials in Tissue Engineering, Society for Biomaterials Annual Meeting, Orlando, FL, April 2011
Symposium Organizer, Polymeric Materials and Surfaces for Cell Differentiation, PMSE – American Chemical Society Fall Meeting, Philadelphia, PA, August 2012

Symposium Organizer, Mechanotransduction in Tissue Engineering and Regenerative Medicine, TERMIS World Congress, Vienna, Austria, September 2012
Symposium Organizer, Biomaterials in the 4th Dimension: Controlling Temporal Properties, Society for Biomaterials Annual Meeting, Boston, MA, April 2013
Symposium Organizer, Stem Cell and Biomaterial Interactions, Society for Biomaterials Annual Meeting, Charlotte, NC, April 2015

Session Chair, Tissue Engineering, Society for Physical Regulation in Biology and Medicine 24th Scientific Conference, Cancun, Mexico, January 2006
Session Chair, Tissue Engineering and Cell Based Therapies Conference, The Academy of Pharmaceutical Sciences, London, UK, May 2006
Session Chair, Polysaccharide-Based Biomaterials, Society for Biomaterials Annual Meeting, Chicago, IL, April 2007
Session Chair, Biomaterials and Microscale Technologies for Biomedical Applications, Society for Biomaterials Annual Meeting, Chicago, IL, April 2007
Session Chair, Nanobiotechnology, Regenerate 2007, Toronto, Canada, June 2007
Session Chair, PhD Student Papers: Tissue Engineering and Cellular Biomechanics, ASME Summer Bioengineering Conference, Keystone, CO, June 2007
Session Chair, BioMEMs, ASME Summer Bioengineering Conference, Keystone, CO, June 2007
Session Chair, Technological Advances, Engineering Cell Biology Meeting, Cambridge, MA, August 2007
Session Chair, Controlling Cell Functions through Polymer Synthesis and Engineering – Stem Cells, American Chemical Society Spring Meeting, New Orleans, LA, April 2008
Session Chair, Electrospun Scaffolds: Fabrication and Evaluation, 8th World Biomaterials Conference, Amsterdam, Netherlands, May 2008
Session Chair, Novel Materials in Tissue Engineering, Materials Research Society Annual Meeting, Boston, MA, December 2008
Session Chair, Emerging Technologies in Bioengineering, Northeast Bioengineering Conference, Boston, MA, April 2009
Session Chair, Biomaterials Synthesis and Characterization, BMES Annual Meeting, Pittsburgh, PA, October 2009
Session Chair, Musculoskeletal Tissue Engineering, BMES Annual Meeting, Pittsburgh, PA, October 2009
Session Chair, Biomaterial/Scaffold Characterization, Northeast Bioengineering Conference, New York, NY, March 2010
Session Chair, Controlled Release and Presentation Systems for Regulating Cell Behavior, Society for Biomaterials Annual Meeting, Seattle, WA, April 2010
Session Chair, 3-D Matrix Interactions, Gordon Research Conference on Signal Transduction by Engineered Extracellular Matrices, Biddeford, ME, June 2010
Session Chair, Novel Materials/Self-Assembled Systems, BMES Annual Meeting, Austin, TX, October 2010
Session Chair, Novel Biomaterials and Scaffolds, BMES Annual Meeting, Austin, TX, October 2010
Session Chair, Therapeutic Angiogenesis, Experimental Biology, Washington, DC, April 2011
Session Chair, Emerging Field Review: Advances in Tissue Engineering, American Society of Gene & Cell Therapy Annual Meeting, Philadelphia, PA, May 2012
Session Chair, Biomaterials for Stem Cell Culture, American Chemical Society Annual Fall Meeting, Philadelphia, PA, August 2012
Session Chair, Biomaterials in the 4th Dimension: Controlling Temporal Properties, Society for Biomaterials Annual Meeting, Boston, MA, April 2013
Session Chair, Biointerfaces – cells, targeting, and applications, Biological Surfaces and Interfaces Conference, Sant Feliu de Guixols, Costa Brava, Spain, July 2013
Session Chair, Biomaterials in Cartilage Repair, International Cartilage Repair Society Annual Meeting, Izmir, Turkey, September 2013
Session Chair, Cartilage and Meniscus, International Cartilage Repair Society Annual Meeting, Izmir, Turkey, September 2013
Session Chair, Stem Cells in Regenerative Medicine, ADATE 5th Tissue Engineering Symposium, Sydney, Australia, August 2014.
Session Chair, Materials to Construct the Microenvironment, Gordon Research Conference on Musculoskeletal Biology and Bioengineering, Andover, NH, August 2016.

MEMBER OF REVIEW PANELS

Department of Veterans Affairs, Veterans Health Administration, ad hoc reviewer, October 2005
National Science Foundation, Graduate Research Fellowship Program, Eligibility Consultant, December 2005
Department of Veterans Affairs, Veterans Health Administration, panel reviewer, February 2006

Department of Defense DEPSCoR Program, ad hoc reviewer, June 2006
Department of Defense Biological Regeneration/Counter-IED Program, ad hoc reviewer, July 2006
Department of Veterans Affairs, Veterans Health Administration, panel reviewer, August 2006
National Science Foundation, ad hoc reviewer, August 2006
Hong Kong Innovation and Technology Commission, ad hoc reviewer, October 2006
Human Frontier Science Program, ad hoc reviewer, October 2006
Technology Foundation STW, ad hoc reviewer, November 2006
Center for Integration of Medicine and Innovative Technology, ad hoc reviewer, April 2007
Maryland Industrial Partnerships Program, ad hoc reviewer, May 2007
The Academy of Sciences for the Developing World, ad hoc reviewer, August 2007
Department of Veterans Affairs, Veterans Health Administration, panel reviewer, August 2007
Ontario Centres of Excellence, ad hoc reviewer, January 2008
National Science Foundation, Graduate Research Fellowship Program, panel reviewer, January 2008
Maryland Stem Cell Research Fund, panel reviewer, March 2008
Center for Integration of Medicine and Innovative Technology, ad hoc reviewer, April 2008
Multiple Sclerosis Society, ad hoc reviewer, August 2008
Department of Veterans Affairs, Veterans Health Administration, panel reviewer, August 2008
National Science Foundation, Division of Materials Research-CAREER Award, panel reviewer, October 2008
Human Frontier Science Program, ad hoc reviewer, November 2008
Ireland Health Research Board, ad hoc reviewer, January 2009
National Science Foundation, Graduate Research Fellowship Program, panel reviewer, February 2009
The Nanotechnology Institute of Pennsylvania, ad hoc reviewer, March 2009
Maryland Stem Cell Research Fund, panel reviewer, March 2009
National Science Foundation, BME program, panel reviewer, May 2009
Department of Veterans Affairs, Veterans Health Administration, panel reviewer, August 2009
National Institutes of Health, Special Emphasis Panel (embryonic stem cells), mail reviewer, September 2009
National Science Foundation, BME-CAREER Award, panel reviewer, October 2009
National Science Foundation, Graduate Research Fellowship Program, panel reviewer, February 2010
Maryland Stem Cell Research Fund, panel reviewer, March 2010
National Science Foundation, BME program, panel reviewer, May 2010
National Institutes of Health, Musculoskeletal Tissue Engineering (MTE) Study Section, panel reviewer, June 2010
Department of Veterans Affairs, Veterans Health Administration, panel reviewer, August 2010
National Science Foundation, DMR – Biomaterials Program, panel reviewer, February 2011
Maryland Stem Cell Research Fund, panel reviewer, March 2011
American Chemical Society Petroleum Research Fund, ad hoc reviewer, June 2011
DEBRA International, ad hoc reviewer, December 2011
National Institutes of Health, Musculoskeletal Tissue Engineering (MTE) Study Section, panel reviewer, February 2012
National Science Foundation, DMR – Biomaterials Program, ad hoc reviewer, March 2012
Department of Veterans Affairs, Veterans Health Administration, ad hoc reviewer, March 2012
Maryland Stem Cell Research Fund, panel reviewer, March 2012
National Institutes of Health, Gene and Drug Delivery Systems (GDD) Study Section, panel reviewer, October 2012
South Carolina EPSCoR, ad hoc reviewer, March 2013
American Heart Association – Bioengineering/Clinical Panel, panel reviewer, April 2013
Royal College of Surgeons in Ireland, adhoc reviewer, July 2013
Department of Veterans Affairs, Veterans Health Administration, panel reviewer, August 2013
National Institutes of Health, NHLBI program project grants, panel reviewer, September 2013
National Institutes of Health, NIAMS BIRT grants, panel reviewer, November 2013
Science Foundation Ireland, adhoc reviewer, December 2013
National Institutes of Health, NHLBI program project grants, panel reviewer, September 2014
California Institute for Regenerative Medicine, panel reviewer, November 2014
Science Foundation, Ireland, site reviewer, December 2014
National Institutes of Health, NIBIB – K99/R13 grants, panel reviewer, February 2015
Connecticut Innovations, Regenerative Medicine Oversight Committee, adhoc reviewer, April 2015
National Institutes of Health, R15 AREA grants, panel reviewer, November 2015
California Institute for Regenerative Medicine, ad hoc reviewer, April 2016
National Institutes of Health, NICHD, panel reviewer, July 2016
National Institutes of Health, NIBIB – T32 grants, panel reviewer, November 2016
United States – Israel Binational Science Foundation, ad hoc reviewer, January 2017
National Institutes of Health, panel reviewer, March 2017

United States – Israel Binational Science Foundation, panel reviewer, May 2018
National Science Foundation – Biomaterials Program, May 2019
National Institutes of Health, panel reviewer, October 2020
National Institutes of Health, panel reviewer BMBI, Feb 2021
National Institutes of Health, BMBI study section standing member, October 2022+ (meets 3x annually)

REVIEWER FOR JOURNALS

Accounts of Chemical Research, ACS Applied Materials and Interfaces, ACS Biomaterials Science & Engineering, ACS Nano, Acta Biomaterialia, Acta Materialia, Advanced Materials, Advanced Functional Materials, Advanced Healthcare Materials, AIChE Journal, Angewandte Chemie, Bioconjugate Chemistry, Biofabrication, Biomacromolecules, Biomaterials, Biomaterials Science, BioMed Central Biotechnology, Biomedical Materials, Biomedical Microdevices, Biotechnology and Bioengineering, Biotechnology Progress, Cell Transplantation, Cell Stem Cell, Chemical Communications, Clinical Orthopaedics and Related Research, Combinatorial Chemistry & High Throughput Screening, FASEB Journal, Journal of the American Chemical Society (JACS), Journal of Biomedical Materials Research A, Journal of Biomedical Materials Research B: Applied Biomaterials, Journal of Applied Polymer Science, Journal of Biomaterials Science: Polymer Edition, Journal of Biomechanics, Journal of Cellular Biochemistry, Journal of Controlled Release, Journal of Drug Targeting, Journal of Experimental Nanoscience, Journal of Materials Chemistry, Journal of Orthopaedic Research, Integrative Biology, Lab on a Chip, Langmuir, Macromolecular Bioscience, Macromolecular Rapid Communications, MacroLetters, Macromolecules, Materials Today, Methods, Molecular Pharmaceutics, Nano Letters, Nature, Nature Biomedical Engineering, Nature Biotechnology, Nature Chemistry, Nature Communications, Nature Materials, Nature Medicine, Nature Reviews Materials, Nature Reviews Rheumatology, Pharmaceutical Research, Physical Review Letters, PLoS ONE, Polymer, Polymer International, Proceedings of the National Academy of Sciences (PNAS), Progress in Polymer Science, Pure and Applied Chemistry, Science, Science Translational Medicine, Scientific Reports, Soft Matter, Tissue Engineering, Tissue Engineering: Part B – Reviews, Tissue Engineering: Part C – Methods, Trends in Biotechnology, Wiley Interdisciplinary Reviews

DEPARTMENTAL AND UNIVERSITY SERVICE

University of Pennsylvania

Financial Conflict of Interest Working Group, Fall 2011-Summer 2012
Search Committee, Director of the Institute for Regenerative Medicine, Fall 2013
President's Engagement Prize Selection Committee, Spring 2019

School of Engineering and Applied Science

Faculty Council, Fall 2011-Spring 2013
Chair, Bioengineering Graduate Group, Summer 2013-Summer 2017
Chair, CBE Consultative Committee, Fall 2015, Fall 2020
Personnel Committee, Fall 2014-Summer 2017
MSE Consultative Committee, Spring 2020

Departmental Committees

Bioengineering, Graduate Student Recruiting Committee, Spring 2006, Spring 2007
Bioengineering, Faculty Recruiting Committee, Fall 2007-Spring 2010
Co-Director, Bioengineering Graduate Student Recruiting, Fall 2007-Spring 2008
Bioengineering, Seminar Committee, Fall 2007-Spring 2008
Bioengineering, Graduate Group Executive Committee, Spring 2007-Summer 2008
Bioengineering, Undergraduate Curriculum Committee, Fall 2008-Summer 2011
Bioengineering, Roster Planning/Curriculum Revising, Summer 2010-Summer 2011
Director, Bioengineering Graduate Student Recruiting, Fall 2011-Spring 2013
Mentoring Committee for Arjun Raj (chair), Fall 2011-Spring 2016
Mentoring Committee for Brian Chow, Fall 2012-Spring 2019
Mentoring Committee for Walter Witschey, Fall 2014-2017

Mentoring Committee for Dan Huh (chair), Fall 2014-Spring 2019
Mentoring Committee for Michael Mitchell (chair), Spring 2019-Fall 2021
Mentoring Committee for Riccardo Gottardi, Fall 2019-Fall 2021
Mentoring Committee for Sydney Shaffer (chair), Fall 2019-Fall 2021

PhD Qualifying Exam Committees

University of Pennsylvania

Jennifer Leight (Weaver Laboratory, BE), Dan Thorek (Tsourkas Laboratory, BE), Zhijun Liu (Chen Laboratory, BE), Julie Czupryna (Tsourkas Laboratory, BE), Jessamine Winer (Jamney Laboratory, BE), Brendon Baker (Mauck Laboratory, BE), Collette Shen (Chen Laboratory, MD/PhD), Isaac Erickson (Mauck Laboratory, BE), Wesley Legant (Chen Laboratory, BE), Andrew Elias (Tsourkas Laboratory, BE), Matthew Raab (Discher Laboratory, BE), Lara Ionescu (Mauck Laboratory, BE), Megan Farrell (Mauck Laboratory, BE), Pamela Sundelacruz (Hammer Laboratory, BE), Chia-Chun Lin (Composto Laboratory, MSE), Anne van Oosten (Janmey Laboratory, BE), Brian Cosgrove (Mauck Laboratory, BE), Christine Yoon (Chen Laboratory, BE), Bhavana Mohanraj (Mauck Laboratory, BE), Su Chin Heo (Mauck Laboratory, BE), Laura Struzyna (Kullen Laboratory, BE), Eric Esch (Huh Laboratory, BE), Minwook Kim (Mauck Laboratory, BE), Eric Wang (Hammer Laboratory, BE), Sonia Bansal (Mauck Laboratory, BE), Andrei Georgescu (Huh Laboratory, BE), Brandon Hayes (Discher Laboratory, BE), Sung Yeon Kim (Mauck Laboratory, BE), Alex Hamilton (Mitchell Laboratory, BE), Serena Omo-Lamai (Brenner Laboratory, BE)

Dissertation Committees

University of Pennsylvania

Rachel Handwerger (Diamond Laboratory, BE PhD, Defended 5/07) - Chair
Alice Chou (Nicoll Laboratory, BE PhD, Defended 2/08) - Chair
Simone Stalling (Nicoll Laboratory, MD/PhD Candidate, Defended 9/08) - Chair
Eric Simone (Muzykantov Laboratory, BE PhD Candidate, Defended 11/08) - Chair
David Christian (Discher Laboratory, CBE PhD Candidate, Defended 2/09)
Richard Tsai (Discher Laboratory, BE PhD Candidate, Defended 3/09) - Chair
Sara Rothman (Winkelstein Laboratory, BE PhD Candidate, Defended 4/09) - Chair
Renee Randazzo (Diamond Laboratory, CBE PhD Candidate, Defended 4/09)
Dalia Levine (Hammer Laboratory, CBE PhD Candidate, Defended 11/09)
Annie Reza (Nicoll Laboratory, BE PhD Candidate, Defended 12/09) - Chair
Collette Shen (Chen Laboratory, MD/PhD Candidate, Defended 3/10) - Chair
Alice Huang (Mauck Laboratory, BE PhD Candidate, Defended 5/10) - Chair
Cathy Peltz (Soslowsky Laboratory, BE PhD Candidate, Defended 6/10) - Chair
Brendon Baker (Mauck Laboratory, BE PhD Candidate, Defended 6/10) - Chair
Julie Czupryna (Tsourkas Laboratory, BE PhD Candidate, Defended 8/10)
Andrew Elias (Tsourkas Laboratory, BE PhD Candidate, Defended 6/11) - Chair
Isaac Erickson (Mauck Laboratory, BE PhD Candidate, Defended 7/11) - Chair
Samuel Crayton (Tsourkas Laboratory, MD/PhD Candidate, Defended 10/11) - Chair
Lara Ionescu (Mauck Laboratory, BE PhD Candidate, Defended 10/11) - Chair
Donny Hanjaya-Putra (Gerecht Laboratory, Johns Hopkins University, CBE PhD Candidate, Defended 3/12)
Katarzyna Mosiewicz (Lutolf Laboratory, EPFL, Switzerland, BE PhD Candidate, Defended 3/12)
Randi Saunders (Hammer Laboratory, BE PhD Candidate, Defended 8/12) – Chair
Jeremy Elser (K. Margulies Laboratory, BE PhD Candidate, Defended 8/12)
Michael Dishowitz (Hankenson Laboratory, BE PhD Candidate, Defended 10/12) – Chair
Ian Gaudet (Shreiber Laboratory, Rutgers University, BME PhD Candidate, Defended 12/12)
Salim Darwiche (Pioletti and Applegate Laboratories, EPFL, Switzerland, BE PhD Candidate, Defended 6/13)
Megan Farrell (Mauck Laboratory, BE PhD Candidate, Defended 9/13)
Brandon Blakely (Chen Laboratory, BE PhD Candidate, Defended 1/14)
George Dominguez (Hammer Laboratory, BE PhD Candidate, Defended 7/14)
Laurel Hind (Hammer Laboratory, BE PhD Candidate, Defended 2/15) – Chair
Spencer Szczesny (Elliot Laboratory, BE PhD Candidate, Defended 2/15)
Su Chin Heo (Mauck Laboratory, BE PhD Candidate, Defended 9/15) - Chair
Feini Sylvia Qu (Mauck Laboratory, BE PhD Candidate, Defended 10/15) – Chair

Minwook Kim (Mauck Laboratory, BE PhD Candidate, Defended 3/17) - Chair
Claire McLeod (Mauck Laboratory, BE PhD Candidate, Defended 4/17)
Bhavana Mohanraj (Mauck Laboratory, BE PhD Candidate, Defended 5/17) - Chair
Brian Cosgrove (Mauck Laboratory, BE PhD Candidate, Defended 6/17) - Chair
Cassidy Blundell (Huh Laboratory, BE PhD Candidate, Defended 7/18) - Chair
Chen Gao (Hammer Laboratory, CBE PhD Candidate, Defended 7/18)
Laura Struzyna (Cullen Laboratory, BE PhD Candidate, Defended 4/19) - Chair
Xuan Cao (Shenoy Laboratory, MSE PhD Candidate, Defended 4/19)
Jeongyun Seo (Huh Laboratory, BE PhD Candidate, Defended 10/19) – Chair
Devon Mason (Boerckel Laboratory, BE PhD Candidate, Notre Dame, Defended 1/20)
Alexander Kasznel (Chenoweth Laboratory, BE PhD Candidate, Defended 5/20) - Chair
Sohaib Hashmi (BE MD/PhD Candidate, Defended 9/20) – Chair
Andrei Georgescu (Huh Laboratory, BE PhD Candidate, Defended 4/21) - Chair
Dongning Chen (Wells Laboratory, BE PhD Candidate, Defended 11/21) – Chair
Yuxi (Clara) Dong (Cormode Laboratory, BE PhD Candidate, Defended 4/22)
Hannah Zlotnick (Mauck Laboratory, BE PhD Candidate, Defended 4/22)
Wisberty Gordian Velez (Cullen Laboratory, BE PhD Candidate, Defended 4/22)
Ana Peredo (Mauck Laboratory, BE PhD Candidate, Defended 5/22)
Ryan Daniels (Mauck Laboratory, CAMB PhD Candidate)
Eric Dai (Mauck Laboratory, BE PhD Candidate)
Jingyu (Alex) Wu (Issadore/Lee Laboratories, CBE PhD Candidate)
Erin Purvis (Cullen Laboratory, Neuroscience PhD Candidate)

University of Colorado
ChBE – Chemical & Biological Engineering; MSE – Materials Science & Engineering; ME – Mechanical Engineering

Grant Bauman (White Laboratory, PhD Candidate, ChBE)
Bruce Kirkpatrick (Anseth Laboratory, MD/PhD Candidate, ChBE)
Hannah Weppner (Hind Laboratory, PhD Candidate, ChBE)
Dalton Miles (Calve/Bryant Laboratories, PhD Candidate, ChBE)
Victor Crespo-Cuevas (Ferguson/Vernerey Laboratories, PhD Candidate, ME)
Joshita Suresh (Bryant Laboratory, PhD Candidate, ChBE)
Ella Hushka (Anseth Laboratory, PhD Candidate, ChBE)
Brittany Thompson (Bryant Laboratory, PhD Candidate, MSE)
Alexandra Borelli (Anseth Laboratory, PhD Candidate, ChBE)
Matthew Jaeschke (Anseth Laboratory, PhD Candidate, ChBE)

CONSULTING

Apotex, 2004-2005
Performance Indicator, 2004-2005
Healionics, 2008-2010
Akin Gump, 2012, 2014-2015
Fish-Richardson, 2013-2015
Gecko Biomedical, 2014, 2018
Birch Stewart Kolasch Birch, 2015-2016
Holistick Medical, 2018-
Innervace, 2022-

START-UP COMPANIES

Founder, Prohibix (Hydrogel therapeutic delivery, cardiovascular and musculoskeletal applications)
Founder, Prolifagen (miRNA therapeutics for cardiac repair)
Founder, Corpenko (Injectable hydrogels for cardiac repair)
Founder, Myostratum (Acellular hydrogels for cardiac repair)
Founder, Forsagen (Hydrogels for cartilage stabilization and repair)