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EDUCATION

Ph.D. in Chemical Engineering, University of Colorado, December 1994.
B.S. in Chemical Engineering (with Highest Distinction), Purdue University, May 1992.

HONORARY DOCTORATES

Doc. Hon. Causa, Purdue University, 2016

PROFESSIONAL EXPERIENCE

Distinguished Professor. Chemical and Biological Engineering, University of Colorado, Boulder, Jan. 2008 to present

Howard Hughes Medical Institute Investigator. Sept. 2005 to August 2017

Tisone Professor. Chemical and Biological Engineering, University of Colorado, Boulder, Sept. 2003 to present

Associate Faculty Director. BioFrontiers Institute, University of Colorado, Boulder, Nov. 2003 to present

Professor (by courtesy). Craniofacial Biology, School of Dentistry, University of Colorado Anschutz Medical Campus, Denver, Sept. 2005 to present

Professor (by courtesy). Chemistry and Biochemistry, University of Colorado, Boulder, Mar. 2004 to present

Professor (by courtesy). Molecular, Cellular and Developmental Biology, University of Colorado, Boulder, Mar. 2004 to present

Professor. Chemical Engineering, University of Colorado, Boulder. Aug. 2002 to Aug. 2003

Patten Associate Professor. Chemical Engineering, University of Colorado, Boulder. Aug. 1999 to July 2002

Howard Hughes Medical Institute Assistant Investigator. Aug. 2000 to Aug. 2005

Associate Professor. Surgery, University of Colorado Anschutz Medical Campus, Denver. Aug. 2000 to present

Patten Assistant Professor. Chemical Engineering, University of Colorado, Boulder. Sept. 1998 to July 1999

Assistant Professor. Chemical Engineering, University of Colorado, Boulder. Aug. 1996 to Aug. 1998

Research Fellow. Dr. Robert Langer, mentor. MIT, Cambridge, MA. Sept. 1995 to July 1996

Research Associate. Dr. Nicholas Peppas, mentor. Purdue University, West Lafayette, IN. May 1995 to Aug. 1995

Visiting Researcher. Dr. Christian Decker, collaborator. Laboratoire de Photochimie des Polymères, Ecole Nationale Supérieure de Chimie, Mulhouse, France. July 1994

ACADEMIES

National Academy of Engineering (2009)

Institute of Medicine of the National Academies, now known as the National Academy of Medicine (2009)

National Academy of Sciences (2013)

National Academy of Inventors (2016)

American Academy of Arts and Sciences (2019)

International Academy of Medical and Biological Engineering (2019)

HONORS AND AWARDS

2023 Outstanding Postdoctoral Mentor of the Year, University of Colorado Boulder

2022 American Chemical Society, POLY fellow

2021 Founder's Award, American Institute of Chemical Engineers

2021 Herman Mark Polymer Chemistry Award, American Chemical Society
 2020 Founder's Award, Society for Biomaterials
 2020 L'Oreal UNESCO for Women in Science Laureate for North America
 2016 American Institute of Chemical Engineers, Fellow
 2015 Arthur C. Cope Scholar Award, American Chemical Society
 2015 Society for Biomaterials, Fellow
 2015 Bonfils Stanton Foundation Science and Medicine Prize
 2014 Food, Pharmaceutical & Bioengineering Division Award, American Institute of Chemical Engineers
 2013 James E. Bailey Award, Society for Biological Engineering
 2013 Hazel Barnes Award, University of Colorado
 2013 Visiting Lecturer, National Science Council, Taiwan.
 2012 Mid-Career Research Award, Materials Research Society
 2012 Colorado Women's Hall of Fame Inductee
 2012 Distinguished Engineering Alumni Award, Purdue University
 2012 University of Colorado's Technology Transfer Office Pinnacle Award
 2012 Outstanding Chemical Engineering Alumni Award, School of Chemical Engineering, Purdue University
 2011 Distinguished Research Lecturer, University of Colorado
 2009 Professional Progress Award, American Institute of Chemical Engineers
 2009 Materials Research Society, Fellow
 2008 Named as one of the 'Brilliant 10' Scientists, *Popular Science*
 2008 Named one of the "One Hundred Chemical Engineers of the Modern Era", AIChE
 2008 Distinguished Engineering Alumni Award, Research and Teaching, University of Colorado
 2008 Clemson Award for Basic Research, Society for Biomaterials
 2006 American Association for the Advancement of Science, Fellow
 2005 Elizabeth Gee Award, University of Colorado
 2004 Alan T. Waterman Award, National Science Foundation
 2004 Research Award, College of Engineering and Applied Science
 2004 Boulder Faculty Assembly Excellence in Research, Scholarly and Creative Work Award
 2004 Kalpana Chawla Outstanding Recent Alumni Award, University of Colorado
 2003 Allan P. Colburn Award, American Institute of Chemical Engineers
 2003 Curtis W. McGraw Award, American Society for Engineering Education
 2002 Hutchinson Teaching Award, College of Engineering and Applied Science
 2001 American Institute for Medical and Biological Engineering, Fellow
 2001 Outstanding Young Investigator Award, Materials Research Society
 2000-pres Investigator, Howard Hughes Medical Institute
 2000 Camille Dreyfus Teacher-Scholar Award, Dreyfus Foundation
 2000 Outstanding Graduate Advising Award, University of Colorado Graduate School
 2000 Teaching Excellence Award, Boulder Faculty Assembly
 1999 Selected to the Technology Review 100
 1999 Dow Outstanding New Faculty Award, American Society for Engineering Education
 1998-2003 FIRST Award, National Institutes of Health
 1998-2002 CAREER Award, National Science Foundation
 1998-2001 DuPont Young Professor Grant
 1998-2000 3M Faculty Award
 1998 John and Mercedes Peebles Teaching Innovation Award, College of Engineering
 1998 Margaret Willard Award, University Women's Club
 1997-1998 Outstanding Graduate Teacher Award, Department of Chemical Engineering
 1997-2002 David and Lucile Packard Fellowship for Science and Engineering
 1997 Junior Faculty Development Award, University of Colorado
 1996-2001 Camille and Henry Dreyfus New Faculty Award
 1996 Unilever Award, Best PhD Thesis in Polymer Research, American Chemical Society
 1995-1996 NIH National Research Service Award Individual Postdoctoral Fellowship

ENDOWED/HONORARY LECTURESHIPS

2024	Fredrickson Lecture, University of Minnesota
2024	Inaugural Distinguished Lecture, University of California Irvine
2023	Plenary Lecture, Pacific Polymer Conference, Puerto Vallarta, Mexico
2023	Gaden Memorial Lecture, Columbia University
2023	Plenary Lecture, Brazilian Academy of Sciences
2023	Plenary Lecture, International Nanomedicine Conference, Sydney, Australia
2023	Plenary Lecture, AMN2022, Rotorua, New Zealand
2022	Heapsa Ely Silllman Lecture, Yale University
2022	Parr Lecture, University of Illinois Urbana-Champaign
2022	Plenary Lecture, European Society for Biomaterials, Bordeaux
2022	Katz Award Lecture at The City College of New York
2022	Distinguished Lecture, Pennsylvania State University
2022	Dean's Lecture, Georgetown University
2020	Plenary Lecture, World Biomaterials Congress, Glasgow
2020	Plenary Lecture in honor of the 100 th anniversary of Staudinger, American Chemical Society
2020	Reilly Lectureship, University of Notre Dame
2019	Hoffman Lecture, University of Washington
2019	Hougen Lectureship, University of Wisconsin-Madison
2019	Purdue Engineering Distinguished Lecture, Purdue University
2018	Coulter Seminar, University of North Carolina
2018	Hunter Distinguished Seminar, Clemson University
2018	McClintock Lecture, Cold Spring Harbor Laboratory
2017	Annabelle Lee Lectureship, Virginia Tech
2017	Ruckenstein Lecture, University at Buffalo, The State University of New York
2017	Mary Bartlett Bunge Lecture, University of Miami
2017	Etter Lecture, University of Minnesota
2016	Petit Institute Distinguished Lecture, Georgia Institute of Technology
2016	Wilhelm Lecturer, Princeton University
2016	Arthur Humphrey Distinguished Lecture, Lehigh University
2016	E. Llewelyn-Thomas Distinguished Lecture, University of Toronto
2016	Kelly Lectures, Purdue University
2016	John C. and Florence W. Holtz Lecture, Johns Hopkins University
2016	Edgar O'Rear Lecture, Rice University
2015	Tis Lahiri Lecture, Vanderbilt University
2015	Bayer Distinguished Lecture, University of Pittsburgh
2015	Two Genes Memorial Lecture, Northwestern University
2014	The Alumni Distinguished Lectures in Chemical Engineering, University of Massachusetts at Amherst
2014	Alexander M. Cruickshank Gordon Research Conference Lecturer at the Signal Transduction by Engineered Extracellular Matrices
2014	College Distinguished Lecture, College of Engineering, University of California at Davis
2014	Ralph Peck Lecture, Illinois Institute of Technology
2014	Katz Lectureship, University of Michigan
2014	Cornelius Pings Lecture, University of Southern California
2013	Weinbaum Lecture, Biomedical Engineering, Rensselaer Polytechnic Institute
2013	Distinguished Speaker, Chemical and Biomolecular Engineering, Rutgers University
2012	Kewaunee Lecture, Duke University
2011	Basore Distinguished Lecture, Auburn University
2010	Wohl Lecture, University of Delaware
2010	Leading Edge Lecture, University of Toronto
2010	Eminent Scholar Lecture, Medical University of South Carolina
2010	Pearson Lecture, University of California at Santa Barbara

2010 Lumpkin Memorial Lecture, University of Maryland Baltimore County
 2010 Distinguished Lecture, University of Pittsburgh, McGowan Institute for Regenerative Medicine
 2008 Ashland Distinguished Lecture Series, University of Kentucky
 2008 Zane Staebler Memorial Lecture in Transplant Biology, UCLA
 2008 Chemical Engineering Distinguished Lecturer Series, University of Utah
 2008 Lindsay Lecture Series Distinguished Speaker, Texas A&M University
 2007 Britton Chance Distinguished Lecture, University of Pennsylvania
 2007 McCabe Lecture, North Carolina State University
 2005 Bayer Distinguished Lectureship, University of Southern Mississippi
 2005 Alan S. Michaels Distinguished Lecture in Medical and Biological Engineering, MIT

EDITORIAL BOARDS

2022-pres *Advanced Healthcare Materials*, Executive Advisory Board Member
 2020-pres *Advanced Materials*, International Advisory Board
 2018-pres. *ACS Nano*, Editorial Advisory Board Member
 2017-pres. *ACS Macro Letters*, Editorial Advisory Board Member
 2017-2021. *Advanced Healthcare Materials*, Editorial Advisory Board Member
 2017-pres. *APL Bioengineering*, Editorial Advisory Board Member
 2015-pres. *Bioengineering and Translational Medicine*, Editorial Advisory Board Member
 2015-pres. *Regenerative Engineering and Translational Medicine*, Editorial Board Member
 2014-2020 *PNAS*, Editorial Board
 2012-2016 *Annual Review of Chemical and Biomolecular Engineering*, Editorial Board
 2012-2014 *MRS Communications*, Editorial Advisory Board
 2011-2021 *Progress in Material Science*, Associate Editor
 2011-pres. *Acta Materialia*, Governor-at-large
 2011-pres. *Biomedical Materials*, Editorial Board
 2010-2019 *Biomacromolecules*, Associate Editor
 2010-2018 *Biotechnology & Bioengineering*, Associate Editor
 2010-2018 *Journal of Heart Valve Disease*, Editorial Board
 2007-pres. *Journal of Biomedical Materials Research — Part A*, Editorial Board
 2005-2009 *Biomacromolecules*, Editorial Advisory Board
 2005-2009 *Chemical Engineering Education*, Publications Board
 2004-2010 *Science*, Board of Reviewing Editors
 2004-pres. *Acta Biomaterialia*, Editorial Board
 2002-2009 *Biotechnology & Bioengineering*, Editorial Board

PUBLICATIONS

394. N.P. Skillin, G.E. Bauman, B.E. Kirkpatrick, J.M. McCracken, K. Park, R.A. Vaia, **K.S. Anseth** and T.J. White, Efficient Photothermal Actuation of Thick 3D-Printed Liquid Crystalline Elastomer Nanocomposites, *Advanced Materials*, in review.
393. M. W. Jaeschke, A.N. Borelli, N.P. Skillin, T.J. White and **K.S. Anseth**, “Engineering a Temporally Injectable Hydrazone and Strain-Promoted Azide-Alkyne Cycloaddition Crosslinked Hydrogel for 3D Printing and Cell Delivery,” *Advanced Healthcare Materials*, in review.
392. A. Beedle, A. Jaganathan, A. Albajar-Sigalés, F. M. Yavitt, K. Bera, I. Andreu, I. Granero-Moya, D. Zalvidea, Z. Kechagia, G. Wiche, X. Trepas, J. Ivaska, **K. Anseth**, V. Shenoy and P. Roca-Cusachs, “Fibrillar adhesion dynamics govern the timescales of nuclear mechano-response via the vimentin cytoskeleton,” *Nature Cell Biology*, in review.
391. D.L. McNally, L.J. Macdougall, B.E. Kirkpatrick, C.V. Maduka, T.E. Hoffman, B.D. Fairbanks, C.N. Bowman, S.L. Spencer and **K.S. Anseth**, “Reversible intracellular gelation of MCF10A cells enables programmable control over 3D spheroid growth,” *Advanced Healthcare Materials*, doi.org/10.1002/adhm.202302528 (2023).

390. C.A. DeForest, B.E. Kirkpatrick and **K.S. Anseth**, “Engineering Native Biological Complexity from the Inside-out and Outside-in,” *Nature Chemical Engineering*, 1, 2-5 (2024).
389. B.R. Nelson, B.E. Kirkpatrick, N.P. Skillin, N. DiCaprio, J.S. Lee, L.P. Hibbard, G.K. Hach, A. Khang, T.J. White, J.A. Burdick, C.N. Bowman and **K.S. Anseth**, “Facile physicochemical reprogramming of PEG-dithiolane microgels,” *Advanced Healthcare Materials*, doi.org/10.1002/adhm.202302925 (2023).
388. N.P. Skillin, B.E. Kirkpatrick, K.M. Herbert, B.R. Nelson, G.K. Hach, K.A. Günay, R.M. Khan, F.W. DeRio, T.J. White and **K.S. Anseth**, “Stiffness anisotropy coordinates supracellular contractility driving long-range myotube-ECM alignment,” *Science Advances*, in review. ([biorxiv.org/cgi/content/short/2023.08.08.552197v1](https://doi.org/10.1126/sciadv.2023.08.08.552197v1)).
387. Y. Hu, S. Soars, B. Kirkpatrick, M. Podgórski, N. Bongiardina, B. Fairbanks, **K. Anseth** and C. Bowman, “Adaptable Networks with Semi-orthogonal Two Stage Polymerizations Enabled by Sequential Photoinitiated Thiol-Ene and Disulfide-Ene Reactions,” *Macromolecules*, 56, 9778-86 (2023).
386. E.A. Hushka, M.R. Blatchley, L.J. Macdougall, F.M. Yavitt, B.E. Kirkpatrick, K. Bera, P.J. Dempsey and **K.S. Anseth**, “Fully synthetic hydrogels promote robust crypt formation in intestinal organoids,” *Nature Materials*, in revision.
385. S. Desai, B.J. Carberry, **K.S. Anseth** and K.M. Schultz, “Characterizing bulk network properties of thioester networks and the network microstructure during material degradation,” *Soft Matter*, 29, 7429-42 (2023).
384. M.B. Felisbine, M. Rubino, J.G. Travers, K.B. Schuetze, M.E. Lemieux, **K.S. Anseth**, B.A. Aguado and T.A. McKinsey, “Substrate stiffness modulates cardiac fibroblast activation, senescence and proinflammatory secretory phenotype,” *American Journal of Physiology — Heart and Circulatory Physiology*, 326, H61-H73 (2024).
383. R. Levato, O. Dudaryeva, C.E. Garciamendez-Mijares, B.E. Kirkpatrick, R. Rizzo, J. Schimelman, **K.S. Anseth**, S. Chen, M. Zenobi-Wong and Y.S. Zhang, “Light-based vat-polymerization bioprinting,” *Nature Reviews Methods Primers*, 3, Article number 47 (2023).
382. B.R. Nelson, B.E. Kirkpatrick, C.E. Miksch, M.D. Davidson, N.P. Skillin, G.K. Hach, A. Khang, S.N. Hummel, B.D. Fairbanks, J.A. Burdick, C.N. Bowman and **K.S. Anseth**, “Photoinduced dithiolane crosslinking for multiresponsive dynamic hydrogels,” *Advanced Materials*, 2211209 (2023).
381. M.R. Blatchley and **K.S. Anseth**, “Middle-out methods for spatiotemporal tissue engineering of organoids,” *Nature Bioengineering*, (doi.org/10.1038/s44222-023-00039-3) (2023).
380. F.M. Yavitt, B.E. Kirkpatrick, M.R. Blatchley, K.F. Speckl, E. Mohagheghian, R. Moldovan, N. Wang, P.J. Dempsey and **K.S. Anseth**, “In situ modulation of intestinal organoid epithelial curvature through photoinduced viscoelasticity directs crypt morphogenesis,” *Science Advances*, 9 (3), eadd5668 (2023).
379. E. Mohagheghian, J. Luo, F.M. Yavitt, F. Wei, P. Bhala, K. Amar, F. Rashid, Y. Wang, X. Liu, C. Ji, J. Chen, D.P. Arnold, Z. Liu, **K.S. Anseth** and N. Wang, “A mechanomicrobot quantifies tumor colony modulus and 3D tractions and embryo force oscillations,” *Science Robotics*, 8 (74), eadc9800 (2023).
378. K.A. Günay, T-L Chang, V.V. Rao, L.J. MacDougall, N. Skillin, A.A. Cutler, J.S. Silver, T. E. Brown, C. Zhang, C-C Yu, E.S. Boyden, B.B. Olwin and **K.S. Anseth**, “Photo-expansion microscopy enables super-resolution imaging of cells embedded in hydrogels,” *Nature Materials*, 22, 777-85 (2023).
377. M.E. Schroeder, D. Batan, A. Gonzalez Rodriguez, K.F. Speckl, D.K. Peters, B.E. Kirkpatrick, G.K. Hach, C.J. Walker, J.C. Grim, B.A. Aguado, R.M. Weiss, **K.S. Anseth**, “Osteopontin activity modulates sex-specific calcification in engineered valve tissue mimics,” *Bioengineering and Translational Medicine*, 8, e10358 (2023).
376. B.J. Vogt, D.K. Peters, **K.S. Anseth** and B.A. Aguado, “Inflammatory serum factors from aortic valve stenosis patients modulate sex differences in valvular myofibroblast activation and osteoblast-like differentiation,” *Biomaterial Science*, 10(22) (2022).

375. T.S. Hebner, B.E. Kirkpatrick, **K.S. Anseth**, C.N. Bowman and T.J White,” Surface-enforced alignment of reprogrammable liquid crystalline elastomers,” *Advanced Science*, <https://doi.org/10.1002/advs.202204003> (2022).
374. L.J. Macdougall, T.E. Hoffman, B.E. Kirkpatrick, B.D Fairbanks, C.N. Bowman, S.L. Spencer and **K.S. Anseth**, “Intracellular crowding by bio-orthogonal hydrogel formation induced reversible molecular stasis,” *Advanced Materials*, 34, 2202882 (2022).
373. S.M. Soars, B. Kirkpatrick, B. Fairbanks, J.T. Kamps, **K. Anseth** and C.N. Bowman, “Synthesis, selective decoration, and photocrosslinking of self-immolative poly(thioester)-PEG hydrogels,” *Polymer International*, 71, 906-11 (2022).1, 906-11 (2022).
372. C.E. Miksch, N.P. Skillin, B.E. Kirkpatrick, G.K. Hach, V.V. Rao, T.J. White and **K.S. Anseth**, “4D printing of extrudable and degradable poly(ethylene glycol) microgel scaffolds for multidimensional cell culture,” *Small*, 18, 2200951 (2022).
371. A.N. Borelli, M.W. Young, B.E. Kirkpatrick, M.W. Jaeschke, S. Mellett, S. Porter, M.R. Blatchley, B.V. Sridhar and **K.S. Anseth**, “Stress relaxation and composition of hydrazone-crosslinked hybrid biopolymer-synthetic, hydrogels determine spreading and secretory properties of MSCs,” *Advanced Healthcare Materials*, 11, 2200393 (2022).
370. T.H. Qazi, M.R. Blatchley, M.D. Davidson, F.M. Yavitt, M.E. Cooke, **K.S. Anseth** and J.A. Burdick, “Programming hydrogels to probe spatiotemporal cell biology,” *Cell Stem Cell*, 29, 678-91 (2022).
369. V.V. Rao, M.E. Wechsler, E. Cravens, S.J. Wojda, A.S. Caldwell, B.E. Kirkpatrick, S.W. Donahue, and **K.S. Anseth**, “Granular PEG hydrogels mediate osteoporotic MSC clustering via N-cadherin influencing the pro-resorptive bias of their secretory profile,” *Acta Biomaterialia*, 145, 77-87 (2022).
368. D. Batan, D.K. Peters, M.E. Schroeder, B.A. Aguado, M.W. Young, R.M. Weiss, and **K.S. Anseth**, “Hydrogel cultures reveal transient receptor potential vanilloid 4 regulation of myofibroblast activation and proliferation in valvular interstitial cells,” *FASEB*, 36, e22306 (2022).
367. F.M. Yavitt, B.E. Kirkpatrick, M.R. Blatchley and **K.S. Anseth**, “4D materials with photoadaptable properties to instruct and enhance intestinal organoid development,” *ACS Biomaterials Science and Engineering*, ab-2021-0145n (2022).
366. B.J. Carberry, J.J. Hernandez, A. Dobson, C.N. Bowman and **K.S. Anseth**, “A kinetic analysis of degradation in thioester crosslinked hydrogels as a function of thiol concentration, pKa, and presentation,” *Macromolecules*, 55, 2123-29 (2022).
365. M.R. Blatchley, K. A. Günay, F.M. Yavitt, E.M. Hawat, P.J. Dempsey and **K.S. Anseth**, “*In situ* super-resolution imaging of organoids and extracellular matrix interactions via photo-transfer by allyl sulfide exchange expansion microscopy (PhASE-ExM)” *Advanced Materials*, 2190252 (2022).
364. J.J. Hernandez, A.L. Dobson, B.J. Carberry, A.S. Kuenstler, P.K. Shah, **K.S. Anseth**, T.J. White and C.N. Bowman, “Controlled degradation of cast and 3-D printed photocurable thioester networks via thiol-thioester exchange,” *Macromolecules*, 55, 1376-85 (2022).
363. J.D. Rogers, B.A. Aguado, K.M. Watts, **K.S. Anseth***, W.J. Richardson*, “Myofibroblast network modeling predicts personalized gene expression and drug responses using valve disease patient sera,” *Proceedings of the National Academy of Science*, 119 (8), e2117323119 (2022).
362. C.J. Walker, D. Batan, C. Bishop, D. Ramirez, B.A. Aguado, M.E. Schroeder, C. Crocini, J. Schwisow, K. Moulton, L.J. Macdougall, R. Weiss, M. Allen, R. Dowell, L.A. Leinwand and **K.S. Anseth**, “Extracellular matrix stiffness controls cardiac valvular myofibroblast activation through epigenetic remodeling,” *Bioengineering & Translational Medicine*, 7, e10394 (2022).
361. D. S. Shin and **K.S. Anseth**, “Recent advances in 3D models of tumor invasion, *Current Opinion in Biomedical Engineering*, 19, 10.1016/j.cobme.2021.100310, (2021).

360. B.J. Carberry, J.E. Hergert, F.M. Yavitt, J.J. Hernandez, K.F. Speckl, C.N. Bowman, R.R. McLeod and **K.S. Anseth**, “3D printing of sacrificial thioester elastomers using digital light processing for templating 3D organoid structures in soft biomatrices,” *Biofabrication*, 13, 044104 (2021).
359. D.S. Shin, M.E. Schroeder and **K.S. Anseth**, “Impact of collagen triple helix structure on melanoma cell invadopodia formation and matrix degradation upon BRAF inhibitor treatment,” *Advanced Healthcare Materials*, e2101592, (2021).
358. C.J. Walker, M.E. Schroeder, B.A. Aguado, **K.S. Anseth** and L.A. Leinwand, “Matters of the heart: Cellular Sex Differences,” *Journal of Molecular and Cellular Cardiology*, 160, 42-55 (2021).
357. K.A. Günay, J.S. Silver, T-L. Chang, O.J. Bednarski, K.L. Bannister, C.J. Rogowski, B.B. Olwin and **K.S. Anseth**, “Myoblast mechanotransduction and myotube morphology is dependent on BAG3 regulation of YAP and TAZ,” *Biomaterials*, 277, 121097 (2021).
356. L.J. Macdougall, M.E. Wechsler, H.R. Culver, E.H. Benke, A. Broerman, C.N. Bowman and **K.S. Anseth**, “Charged poly(N-isopropylacrylamide) based nanogels for the stabilization of high isoelectric point proteins,” *ACS Biomaterial Science & Engineering*, 7, 4282-92 (2021).
355. M.E. Wechsler, V.V. Rao, A.N. Borelli and **K.S. Anseth**, “Engineering the MSC secretome: A hydrogel focused approach,” *Advanced Healthcare Materials*, 2001948 (2021).
354. B.M. Richardson, C.J. Walker, M.M. Maples, M.A. Randolph, S.J. Bryant and **K.S. Anseth**, “Mechanobiological interactions between dynamic compression and viscoelasticity on chondrocytes in hydrazone covalent adaptable networks for cartilage tissue engineering,” *Advanced Healthcare Materials*, 202002030 (2021).
353. B. Fairbanks, L. Macdougall, S. Mavila, J. Sinha, B. Kirkpatrick, **K. Anseth** and C. Bowman, “Photoclick chemistry: A bright idea,” *Chemical Reviews*, 121, 6915-90 (2021).
352. A.S. Caldwell, C.V. Rao, D. Bell, A.C. Golden, J.C. Grim and **K.S. Anseth** “Mesenchymal Stem Cell-Inspired Microgel Scaffolds to Control Macrophage Polarization” *Bioengineering & Translational Medicine*, 310217 (2021).
351. B.A. Aguado, C.J. Walker, J.C. Grim, D. Batan, B.J. Vogt, M.E. Schroder, A. Gonzales-Rodriguez, D.D. Heistad, R.M. Weiss, L.A. Leinwand and **K.S. Anseth**, “Genes that escape X-chromosome inactivation mediate sex differences in valve myofibroblast,” *Circulation*, 145, 513-30 (2022).
350. A.K. Peter, C.J. Walker, T. Ceccato, C. Trexler, C. Ozeroff, K. Lugo, A. Perry, **K.S. Anseth** and L.A. Leinwand, “Cardiac fibroblasts mediate a sexually dimorphic fibrotic response to beta-adrenergic stimulation,” *Journal of the American Heart Association*, 10(11), e018776, (2021).
349. N. Gjorevski, T.E. Brown, M. Nikolaev, F.W. DelRio, F.M Yavitt, **K.S. Anseth** and M.P. Lutolf, “Tissue geometry drives deterministic organoid patterning,” *Science*, 375 (6576), eaaw9021 (2022).
348. A. Gonzalez Rodriguez, M.E. Schroeder, J.C. Grim, C.J. Walker, K.F. Speckl, R.M. Weiss and **K.S. Anseth**, “TNF- α promotes and exacerbates calcification in heart valve myofibroblast populations,” *FASEB Journal*, 35, e21382 (2021).
347. S. Tang, B.M. Richardson and **K.S. Anseth**, “Mimicking the viscoelasticity of soft tissues with covalent adaptable networks,” *Progress in Material Science*, 120, 100738 (2021).
346. J.S. Silver, K.A. Günay, T.O. Vogler, A.A. Cutler, T.O. Vogler, T.E. Brown, B.T. Pawlikowki, O.J. Bednarski, K.L Bannister, C.J. Rogowski. A.G. Mckay, F.W. DelRio, B.B. Olwin and **K.S. Anseth**, “Injury mediated stiffening persistently activates muscle stem cells though YAP and TAZ mechanotransduction,” *Science Advances*, 7, eabe4501 (2021).
345. C.J. Walker, C. Crocini, D. Ramirez, A. R. Killaars, J.C. Grim, B.A. Aguado, K. Clark, M.Allen, R. Dowell, L.A. Leinwand and **K.S. Anseth**, “Nuclear mechanosensing drives epigenetic remodeling of persistently activate myofibroblasts,” *Nature Biomedical Engineering*, 5, 1485-99, (2021).

344. J.C. Grim, B.A. Aguado, B.L. Vogt, D. Batan, C.L. Andrichik, M.E. Schroeder, A. Gonzalez-Rodriguez, F.M. Yavitt, R.M. Weiss, and **K.S. Anseth**, “Secreted factors from pro-inflammatory macrophages promote an osteoblast-like phenotype in valvular interstitial cells,” *Arteriosclerosis, Thrombosis and Vascular Biology*, 40, Issue 11: e296–e308 (2020).
343. B.M. Richardson, C.J. Walker, L.J. Macdougall, J.W. Hoye, M.A. Randolph, S.J. Bryant and **K.S. Anseth**, “Viscoelasticity of hydrazone crosslinked poly(ethylene glycol) hydrogels directs chondrocytes morphology during mechanical deformation,” *Biomaterial Science*, 8, 3804-11 (2020).
342. M.E. Schroeder, A. Gonzalez Rodriguez, K.F. Speckl, C.J. Walker, F.S. Midekssa, J.C. Grim, R.M. Weiss and **K.S. Anseth**, “Collagen networks within 3D PEG hydrogels promote valvular interstitial cell matrix mineralization,” *Acta Biomaterialia*, 119, 197-210 (2020).
341. H. Ma, L.J. Macdougall, A. Gonzalez Rodriguez, M.E. Schroeder, D. Batan and **K.S. Anseth**, “Calcium signaling regulates valvular interstitial cell alignment and myofibroblast activation in fast-relaxing boronate hydrogels,” *Macromolecular Bioscience*, 20(12), 2000268 (2020).
340. A.R. Killaars, C.J. Walker and **K.S. Anseth**, “Nuclear mechanosensing controls MSC osteogenic potential through HDAC epigenetic remodeling,” *Proceedings of the National Academy of Engineering*, 117, 21258-21266. (2020).
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BOOK CHAPTERS

14. L. Macdougall, H. Culver, C.C. Lin, C.Bowman and **K. Anseth**, Degradable and Resorbable Polymers, W. Wagner, M. Yaszemski (Eds.), *Biomaterials Science* (pp. XXX). Elsevier Inc., Academic Press (2020).
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12. D. L. Alge and **K.S. Anseth**, "Thiol-X reactions in tissue engineering" in A.B. Lowe & C.N. Bowman (Eds.), *Thiol-X Chemistries in Polymer and Materials Science* (pp. 164-93), Royal Society of Chemistry (2014).
11. C.C. Lin and **K.S. Anseth**, The biodegradation of biodegradable polymeric biomaterials. in B. D. Ratner, A. S. Hoffman & F. J. Schoen (Eds.), *Biomaterials Science* (pp. 716-728). Elsevier Inc., Academic Press (2013).
10. D.S.W. Benoit and **K.S. Anseth**, Nanostructure Scaffolds for Tissue Engineering, in *Nanotechnology in Therapeutics: Current Technology and Applications*, Horizon Scientific Press, J.Z. Hilt, J.B. Thomas, N.A. Peppas (eds), pp. 205-38 (2007).
9. M.A. Rice, B.T. Dodson, J.A. Arthur, and **K.S. Anseth**, "Cell-based Therapies and Tissue Engineering," *Otolaryngologic Clinics of North America, Bioengineering in Otolaryngology*, 38, 199-214 (2005).
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7. S.J. Bryant and **K.S. Anseth**, "Photopolymerization of Hydrogel Scaffolds," *Scaffolding in Tissue Engineering*, CRC Press P.X. Ma and J. Elisseeff (eds.), pp. 71-90 (2005).
6. A.K. Burkoth and **K. Anseth**, "Photocrosslinked Polyanhydrides with Controlled Hydrolytic Degradation," *Polymeric Drugs and Delivery systems*, Technomic Publishing Co., Inc., R.M. Ottenbrite and S.W. Kim (eds.), 181-195 (2001).
5. S. Bryant, P. Martens, J. Elisseeff, M. Randolph, R. Langer and **K. Anseth**, "Transtissue Photopolymerization of Poly(Vinyl Alcohol) Hydrogels," *Chemical and Physical Networks Formation and Control of Properties*, The Wiley Polymer Networks Group Review Series, Volume 2, B.T. Stokke and A. Elgsaeter (eds.), 395-404 (1999).

4. D.C. Svaldi, J.S. Young, and **K.S. Anseth**, "Initiation Mechanisms for Three Dimensional Photopolymerization of Biodegradable Networks," *Chemical and Physical Networks Formation and Control of Properties*, The Wiley Polymer Networks Group Review Series, Volume 1, K. te Nijenhuis and W.J. Mijs (eds.), 161-72 (1998).
3. H.M.J. Boots, **K.S. Anseth**, D.L. Kurdikar, and N.A. Peppas, "Network Formation by Chain Polymerization of Liquid Crystalline Monomer," *Chemical and Physical Networks Formation and Control of Properties*, The Wiley Polymer Networks Group Review Series, Volume 1, K. te Nijenhuis and W.J. Mijs (eds.), 377-86 (1998).
2. **K.S. Anseth**, D.C. Svaldi, C.T. Laurencin, and R. Langer, "Photopolymerization of Novel Degradable Networks for Orthopaedic Applications," *ACS Symposium Series 673, Photopolymerization Fundamentals and Applications*, A. Scranton, C. Bowman, and R. Peiffer (eds.), 189-202 (1997).
1. **K.S. Anseth**, T. A. Walker, and C.N. Bowman, "UV-Vis Spectroscopy to Determine Free Volume Distributions During Multifunctional Monomer Polymerizations," *ACS Symposium Series 598, International Symposium on Polymer Spectroscopy*, M.W. Urban and T. Provder (Eds.), 166-82 (1995).

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21. A. Borelli, M. Young, B. Sridhar, V. Akuthota and K. Anseth, "Compositions and methods for making and using huybrid network hydrogels," US Patent Application (No.: 63/144,379), filed February 2021.
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19. A. Caldwell and K. Anseth, "Synthesis and Assembly of Clickable Microgels into Cell-Laden Porous Scaffolds," US Patent Application filed July 2017.
18. T. Brown, I. Marozas and K. Anseth, "Amplified Photodegradation of Hydrogels and Methods of Producing and Using the Same," US Patent Application filed March 2017.
17. K.S. Anseth, A.M. Kasko, M.W. Tibbitt, A.M. Kloxin and B. Sridhar, "Photodegradable Groups for Tunable Polymeric Materials," U. S. Patent No. 9,180,196, November 10, 2015. Technology licensed to Nanoly.
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15. C. Bowman, K. Anseth, B. Hacıoglu, C. Nuttelman, "Degradable Thiol-ene Polymers," U.S. Patent No. 8,859,716. October 14, 2014. Technology licensed to Mosaic Biosciences.
14. C. Bowman, K. Anseth, B. Hacıoglu, C. Nuttelman, "Degradable Thiol-ene Polymers," U.S. Patent No. 8,519,086. August 27, 2013. Technology licensed to Mosaic Biosciences.
13. K.S. Anseth, A.M. Kasko, M.W. Tibbitt, A.M. Kloxin and B. Sridhar, "Photodegradable Groups for Tunable Polymeric Materials," U. S. Patent No. 8,343,710, January 1, 2013. Technology licensed to Nanoly.
12. R. Sebra, K. Masters, C. Bowman and K. Anseth, "System and Method for Biological Assays," U.S. Patent Application 20080268551, October 30, 2008
11. M.C. Lawson and K.S. Anseth, "Polymerizable Antimicrobial Composition," U.S. Patent Application 20080107707, May 8, 2008.
10. C.Y. Cheung, K.S. Anseth, "Immunoisulative Encapsulation System," U.S. Patent Application 20090028945, January 29, 2009.
9. K.S. Anseth, A. Kasko, "Photodegradable Groups for Tunable Polymeric Materials," U.S. Patent No. 8,343,710, January 1, 2013.
8. A. Aimetti, C. DeForest, K. Anseth, "Method For Synthesizing A Cyclic Multivalent Peptide Using A Thiol-Mediated Reaction" U.S. Patent Application 20130197189, August 13, 2013
7. K.S. Anseth, C.N. Bowman, R.P. Sebra, K.S. Masters, "System and Method for Biological Assays," U.S. Patent Application 20080268551.

6. T. Haraldsson, B. Hutchison, C. Bowman, K. Anseth, "Fabrication of 3D Photopolymeric Devices," U.S. Patent Application 20060066006. Technology Licensed to Optical Associates Incorporated.
5. K. Anseth, C. Connon, J. Owens and T. Randolph, "Preparation and Use of Photopolymerized Microparticles," U.S. Pat. No. 6,403,672, June 11, 2002. Technology Licensed to RxKinetix
4. J.H. Elisseeff, K.S. Anseth, D. Sims, and R. Langer, "Semi-Interpenetrating or Interpenetrating Polymer Networks for Drug Delivery and Tissue Engineering," U.S. Pat. No. 6,224,893, May 1, 2001. Technology Licensed to Advanced Tissue Sciences, Smith and Nephew, and Cartilix.
3. K.S. Anseth, V.R. Shastri, and R. Langer, "Photocurable, Biodegradable Systems for Orthopaedic and Dental Applications," U.S. Pat. No. 5,902,599, May 11, 1999. Technology Licensed to Abbott and Bioplast.
2. C.N. Bowman, K.S. Anseth, A.R. Kannurpatti and M.D. Goodner, "Method and Material for Use With Dental Composites for Improving Conversion of Monomers to Polymers and Reducing Volume Shrinkage," U.S. Pat. No. 5,730,601, March 24, 1998.
1. K.S. Anseth and T.A. Koch, E.I. Du Pont de Nemours and Company, Wilmington, DE. "Process for the Conversion of N₂O," U.S. Pat. No. 5,314,673, May 24, 1994.

INVITED LECTURES

340. "Responsive and adaptable polymer networks for 4D cell culture," 18th Pacific Polymer Chemistry Conference, Puerto Vallarta, Mexico, December 2023.
339. "Dynamic and responsive materials to direct organoid development," American Institute for Chemical Engineers, Orlando, FL, November 2023.
339. "Photoresponsive materials for tissue regeneration," Columbia University, New York, NY, November 2023.
338. "Covalent adaptable networks and their biological applications," Photopolymer Fundamentals Conference, Boulder, CO, September 2023.
337. "Adaptable PEG hydrogels for *in vitro* growth of lung organoids and their *in vivo* delivery," Genentech, San Francisco, CA, August 2023.
336. "Photoexpansion microscopy to study the growth of intestinal organoids," Nanomedicine 2023, Sydney, Australia, June 2023.
335. "Dynamic biomaterials for medical applications," Brazilian Academy of Science, Rio de Janeiro, Brazil, May 2023.
334. "Photoadaptable hydrogels for growth and in situ shape modulation of intestinal organoids," Korean Polymer Society, Daejeon, South Korea, April 2023.
333. "Advances in photoresponsive materials to study mechanotransduction in 4D," Advanced Materials and Nanotechnology 10, Rotorua, New Zealand, February 2023.
332. "Synthetic hydrogels as extracellular matrix mimics: engineering materials for 4D cell culture," Parr Lecture, University of Illinois, Champagne, Illinois December 2022.
331. "Responsive biomaterials for directing tissue regeneration", Penn State Distinguished Lecture, State College, Pennsylvania, October 2022.
330. "Nuclear mechanosensing drives chromatin remodeling in persistently activated fibroblasts", 9th International Workshop on Cardiac Mechano-Electric Coupling and Arrhythmias (MEC2022), Freiburg, Germany, September 2022.
329. "Photoresponsive hydrogels to study cellular mechanobiology," European Society for Biomaterials, Bordeaux, France, September 2022.
328. "Photoexpansion microscopy advances using responsive polymer networks," Polymer Networks Group Meeting, Rome, Italy, June 2022.

327. "Bioengineering with light responsive hydrogels," Swiss Society for Biomaterials and Regenerative Medicine, ETH, Zurich, Switzerland, June 2022.
327. "Materials regulation of the intestinal stem cell crypt," International Webinars on Cell and Tissue Engineering," University of Aveiro, Aveiro, Portugal, May 2022.
326. "Engineering bioresponsive and adaptable materials for regenerative medicine," Department of Orthopedics, Musculoskeletal Tissue Engineering Meeting, Washington University at St. Louis, May
325. "Polymer networks at synthetic extracellular matrices: Biology in the 4th dimension," Department of Chemical Engineering, City College of New York, Katz Lecture, April 2022.
324. "Synthetic hydrogels as extracellular matrix mimics: Engineering materials for 4D cell culture," Department of Chemistry and Biochemistry, University of California at Santa Barbara, Santa Barbara, CA, March 2022.
323. "Degradable hydrogels and their applications in tissue regeneration," Department of Chemical Engineering, University of Virginia, Charlottesville, VA, December 2021.
322. "Adaptable matrices for 4D cell culture," Department of Bioengineering, University of Maryland, College Park, MD, November 2021.
321. "Responsive hydrogels and their applications in photoexpansion microscopy," Department of Chemical Engineering, University of Notre Dame, South Bend, IN, September, 2021.
320. "Transport processes in hydrogel materials for the design of tissue engineering devices," North American Membrane Society Plenary, Estes Park, CO, August 2021.
319. "Materials design for 5D biology," ACS Fall Meeting, Herman Mark Award Symposium, Atlanta, GA, August 2021.
319. "Engineering hydrogels to promote tissue regeneration," Arizona State University Biomaterials Day, April 2021.
318. "Polymer networks as synthetic extracellular matrices: Biology in the 4th dimension," ACS Plenary, Virtual meeting, April 2021
317. "Innovation in Biomaterials," GRC Connects, Webinar to Celebrate Women in Science Day, March 2021
316. "Multifunctional hydrogel matrices to control biology in 4D," Department of Chemical Engineering, Stanford University, January 2021.
315. "Precision biomaterials for regenerative medicine," World Biomaterials Congress, Virtual meeting, Glasgow, United Kingdom, December 2020.
314. "Biomaterials to control symmetry breaking in intestinal organoids," AIBN-RACI Virtual Seminar Series, Brisbane, Australia, September 2020.
313. "Advances in responsive hydrogels and their biological applications," International Academy of Medical and Biological Engineering meeting, Carnegie Mellon University, September 2020.
313. "Clinical translation of biomaterial delivery systems," Physical Medicine and Rehabilitation Department, CU Anschutz Medical Campus, February 2020.
312. "Hydrogels to study and direct differentiation of intestinal organoids," Allen Institute for Cell Science, Seattle, December 2019.
311. "Frontiers in Hydrogels and their Medical Applications," Department of Bioengineering Hoffman Lecture, University of Washington, December 2019.
310. "Deterministic Symmetry Breaking in Intestinal Organoids," Till & McCullough Stem Cell Biology Meeting, Montreal, Canada, November 2019.
309. "Engineering Biomaterials for Personalized Medical Products," Technology Innovation Forum, 3M, St. Paul, MN, November 2019.

308. "Biomaterials for regeneration of craniofacial defects," School of Dentistry, University of Michigan, September 2019.
307. "Materials design for stem cell culture and expansion," NIST, Gaithersburg, July 2019.
306. "Photoadaptable hydrogels to study and direct stem cells," IUPAC World Chemistry Congress, Paris, France, July 2019.
305. "Photoresponsive materials to control symmetry breaking in organoids," University of Minho, Porto, Portugal, June 2019.
304. "Hydrogels ECM mimics to study crypt formation in intestinal organoids," Scandinavian Society for Biomaterials, Helsinki, Finland, June 2019.
303. "Hydrogels as ECM mimics to study mechanical signaling that shapes organoid development," GRC on Metalloproteases, Tuscany Il Ciocco, Italy, May 2019.
302. "Multiscale engineering of biomaterial matrices to control tissue regeneration," Department of Chemical Engineering, University of Texas at Austin, April 2019.
301. "Dynamic hydrogel matrices: Cell biology in the fourth dimension," Department of Chemical Engineering, University of Wisconsin, March 2019.
300. "Chemical engineering at the interface with biology," Department of Chemical Engineering, University of Wisconsin, March 2019.
299. "Soft materials for hard biological problems," College of Engineering, Purdue University, January 2019.
298. "Dynamic hydrogel matrices: Cell biology in the fourth dimension," Department of Bioengineering, University of North Carolina, Chapel Hill, and North Carolina State University, Raleigh, NC, November 2018.
297. "Engineering precision biomaterials for regenerative medicine," Canadian Society for Chemical Engineering, Toronto, Canada, October 2018.
296. "Synthetic hydrogels for the growth and scale up of intestinal organoids," BioInterfaces Workshop and Symposium, Boulder, CO, September 2018.
295. "Photoadaptable hydrogels for studying crypt formation in intestinal organoids," Institute for Engineering Medicine, University of Minnesota, Minneapolis, MN, September 2018.
294. "Dynamic hydrogel matrices: Cell biology in the fourth dimension," Department of Bioengineering, Clemson University, Clemson, SC, September 2018.
293. "Adaptable hydrogels with photoswitchable properties to study mechnobiology," American Chemical Society Fall Meeting, Boston, MA, August 2018.
292. "Viscoelastic hydrogels based on boronate esters for understanding cell-matrix signaling," American Chemical Society Fall Meeting, Boston, MA, August 2018.
291. "Macromolecular assembly of adaptable hydrogels and their application in regenerative biology," International Symposium on Macrocyclic and Supramolecular Chemistry, Quebec City, Canada, July 2018.
290. "Photoadaptable hydrogels for studying and directing crypt formation in intestinal organoids," MACRO18, Cairns, Australia, July 2018.
289. "Spatiotemporal control of hydrogel viscoelastic properties to mimic ECM remodeling," Gordon Research Conference on Bioinspired Materials, Les Diableret, Switzerland, June 2018.
288. "On-demand stress relaxation for studying mesenchymal stem cells mechanosensing," Forum on Emerging Biomaterials, Chengdu, China, June 2018.
287. "Development and application of photoadaptable hydrogels for culturing intestinal organoids and directing crypt formation," Regenerative Medicine Workshop, Isle of Palms, SC, March 2018.

286. "Adaptable and programmable hydrogel matrices for organoid culture," Department of Biomedical Engineering, Boston University, Boston, MA, February 2018.
285. "3D culture models for studying lung fibrosis," Lung Fibrosis and Regeneration Program, Anschutz Medical Campus, Denver, CO, December 2017.
284. "Engineering complex tissues with photoresponsive hydrogel materials," Emerging Polymers Technology Summit, Melbourne, Australia, November 2017.
283. "Covalent-adaptable hydrogel matrices for reversible presentation of biological signals," Department of Chemistry, Virginia Tech, Blacksburg, VA, November 2017.
282. "Understanding and probing the dynamics of cell-material interactions in four dimensions" Annual Meeting of the Society of Rheology, Denver, CO, October 2017.
281. "Allyl-sulfide modified hydrogels with switchable properties as dynamic cellular niches," American Institute of Chemical Engineers Annual Meeting, Minneapolis, MN, October 2017.
280. "Advances in dynamic and adaptable biomaterials for organ engineering," 8th Annual Wyss Institute International Symposium, Harvard University, Cambridge, MA, September 2017.
279. "Dynamically tunable hydrogels through bio-click reactions and their applications in regenerative biology," American Chemical Society Fall Meeting, Washington DC, August 2017.
278. "Responsive hydrogels as synthetic ECM analogs through bio-click reactions," Advanced Polymers through Macromolecular Engineering, Ghent, Belgium, May 2017.
277. "Dynamic biomaterials system and their applications in regenerative biology," Department of Chemical and Biological Engineering, University at Buffalo, Buffalo, NY, April 2017.
276. "Hydrogels for studying mechanobiology and fibrotic disease," Department of Chemical Engineering, Arizona State University, Phoenix, AZ, March 2017.
275. "Hydrogels as cell delivery systems for regenerative medicine," School of Medicine, University of Miami, Miami, FL, March 2017.
274. "Photoclickable hydrogel systems as 4D stem cell niches," Department of Chemistry, University of Minnesota, Minneapolis, MN, February 2017.
273. "Design of novel materials to regulate stem and progenitor cell expansion and differentiation," ECI Cell Manufacturing and Scale Up Conference, San Diego, CA, January 2017.
272. "Dynamically tunable hydrogels and their biological applications," 26th Australasian Polymer Symposium, Lorne, Australia, November 2016.
271. "Hydrogels as *in vitro* models of the stem cell niche," American Society for Matrix Biology, St. Petersburg, FL, November 2016.
270. "Design of responsive biomaterial scaffold for tissue regeneration," Georgia Institute of Technology, Atlanta, GA, November 2016.
269. "Future challenges and opportunities for chemical engineers in the design of biomaterials," Princeton University, Princeton, NJ, September 2016.
268. "Tissue engineering across size scales," Princeton University, Princeton, NJ, September 2016.
267. "Responsive hydrogel matrices through photochemistry," American Chemical Society Fall Meeting, Philadelphia, PA, August 2016.
266. "Hydrogels as synthetic ECM analogs through bio-click reactions," American Chemical Society Fall Meeting, Philadelphia, PA, August 2016.
265. "Dynamic matrices to study fibrosis," Northwestern University, June 2016.
264. "Tunable hydrogel matrices through photo-click reactions," 2nd International Symposium of the Transregio

67 *Frontiers in Biomaterial Science*, Leipzig, Germany, June 2016.

263. "Synthesizing dynamic biomaterial matrices through the controlled incorporation of glycosaminoglycans," World Biomaterials Congress, Montreal, Canada, May 2016.
262. "Designing Biomaterials for Regenerative Medicine Applications," University of Toronto, Toronto, Ontario, Canada, May 2016.
261. "Advances in Regenerative Biomaterials: Cellular control through sequential bio-click reactions," Purdue University, West Lafayette, IN, April 2016.
260. "Chemical engineering at the interface of disciplines," Purdue University, West Lafayette, IN, April 2016.
259. "*In situ* regulation of cellular niches," California Institute of Technology, Pasadena, CA, April 2016.
258. "Synthesis of dynamic stem cell niches using bioorthogonal photo-click chemistries," American Chemical Society Spring Meeting, San Diego, CA, March 2016.
257. "Cellular control in a couple of clicks," Johns Hopkins University, Baltimore, MD, March 2016.
255. "Dynamic hydrogel niches to study mechanosensing of MSCs," Rice University, Houston, TX, February 2016.
256. "Responsive materials through photo-click and photo-clip reactions," Georgia Institute of Technology, Atlanta, GA, January 2016.
255. "*Hydrogels as synthetic extracellular matrices: from tissue engineering to 4-D cell biology*," American Society for Cell Biology, San Diego, CA, December 2015.
254. "In vitro tissue models through photo-click reactions," Chinese Biomaterials Congress, Haikou, Hainan, China, November 2015.
253. "Future directions in bio-click reactions for biomaterial design," Pioneers in Biomaterials session, American Institute of Chemical Engineers Annual Meeting, Salt Lake City, UT, November 2015.
252. "Photochemical reactions to synthesize soft materials with tunable biological properties," American Institute of Chemical Engineers Annual Meeting, Salt Lake City, UT, November 2015.
251. "Photo-click reactions as dynamic cell niches," Fundamentals in Photopolymers, Boulder, CO, September 2015.
250. "Engineering hydrogels to promote tissue regeneration," University of Florida, Gainesville, FL, September 2015.
249. "Reversible chemistries to control cellular microenvironments," Material Chemistry 12, York, England, July 2015.
248. "Synthesis of dynamic stem cell niches using bioorthogonal photo-click chemistries," European Polymer Congress, Dresden, Germany, June 2015.
247. "Engineering hydrogel matrices: from tissue engineering to 4-D cell biology," Texas Biomaterials Day, Rice University, Houston, TX, May 2015.
246. "Body Building: Lesson learned from the bench to the bedside and back again," Bayer Distinguished Lecture, University of Pittsburgh, Pittsburgh, PA, April 2015.
245. "Goodbye flat biology?," Bayer Distinguished Lecture, University of Pittsburgh, Pittsburgh, PA, April 2015.
244. "Emerging technologies for biomaterials at the biological interface," BIOT Division, ACS Spring Meeting, Denver, CO, March 2015.
243. "Body building: designer biomaterials to promote healing," Distinctive Voices Lecture, National Academy of Sciences, February 2015.
242. "Materials to study cell biology in the fourth dimension," Northwestern University, February 2015.

241. "Cellular control in a couple of clicks," Polymer Chemistry Zing Conference, Cancun, Mexico, December 2014.
240. "Hydrogels as dynamic niches for regenerative medicine," Food, Pharmaceutical, and Bioengineering award address, American Institute of Chemical Engineers Annual Meeting, Atlanta, GA, November 2014.
239. "Hydrogels for Tissue Engineering," Carnegie Mellon University, Pittsburgh, PA, October 2014.
238. "Hydrogel matrices to study fibrosis," Colorado State University, Fort Collins, CO, October 2014.
237. "Body building: designer materials to promote tissue regeneration," Distinguished Alumni Lecture, University of Massachusetts at Amherst, Amherst, MA, September 2014.
236. "Goodbye flat biology?" Department of Chemical Engineering, University of Massachusetts at Amherst, Amherst, MA, September 2014.
235. "Engineering materials to promote healing" Annual International Conference of the IEEE Engineering in Medicine and Biology Society, Chicago, IL, August 2014.
234. "Drug delivery to promote tissue regeneration: How simple is complex enough?," Controlled Release Society, July 2014.
233. "Advances in dynamically tunable hydrogels: Cell biology in the 4th dimension," Gordon Research Conference, Waltham, MA July 2014.
232. "Bio-click reactions for patterning cellular environments in 3D," University of Washington, Seattle, WA, May 2014.
231. "Materials to study cell biology in the fourth dimension," University of California at Davis, Davis, CA, May 2014.
230. "Dynamic bioscaffolds: Cell Biology in the fourth dimension," Illinois Institute of Technology, Chicago, IL, April 2014.
229. "Biomaterials as synthetic extracellular matrices," National Academy of Sciences Annual Meeting, Washington DC, April 2014.
228. "Synthetic extracellular matrices: How simple is complex enough?" Keystone Symposium on Engineering Cell Fate and Function," Olympic Valley, CA, April 2014.
227. "Dynamic hydrogel niches through photochemical reactions," American Chemical Society Spring Meeting, Dallas, TX, March 2014.
226. "Goodbye flat biology," Department of Chemical Engineering, University of Michigan, Ann Arbor, MI, March 2014.
225. "Body Building: Trends in Tissue Engineering Research," Gerald Ford Presidential Library Lecture, University of Michigan, Ann Arbor, MI, March 2014.
224. "Reversibly adaptable hydrogels: Cell biology in the 4th dimension," Department of Chemical Engineering, Hong Kong University of Science and Technology, Hong Kong, February 2014.
223. "Engineering tissues with hydrogel scaffolds," Institute for Advanced Study, Hong Kong University of Science and Technology, Hong Kong, February 2014.
222. "Cellular control in a couple of clicks," Department of Chemical Engineering, University of Southern California, Pasadena, CA, February 2014.
221. "Osteogenic niches for bone regeneration," School of Medicine, University of Texas Medical Branch, Galveston, TX, February 2014.
220. "Multifunctional biomaterial scaffolds for tissue regeneration," Department of Material Science and Engineering, University of Illinois, Urbana, IA, January 2014.

219. "Photoresponsive materials to regulate the stem cell niche," BioX Symposium, Stanford University, Palo Alto, CA, January 2014.
218. "Synthetic extracellular matrices to promote tissue regeneration," Advances in Tissue Regeneration, Lattrop, The Netherlands, November 2013
217. "Engineering Cell Niches in a Couple of Clicks," American Institute of Chemical Engineers Annual Meeting, San Francisco, CA, November, 2013
216. "Hydrogels as Mimics of the Extracellular Matrix: Applications in Cell Biology and Tissue Regeneration," College of Medicine, University of Iowa, Iowa City, IA, October 2013.
215. "The Evolution of Hydrogel Cell Carriers for Tissue Regeneration," American Association of Blood Banks, Denver, CO, October 2013.
214. "Dynamically Tunable Hydrogel Matrices: Cell Biology in the Fourth Dimension," Department of Chemical and Biomolecular Engineering, Tulane University, New Orleans, LA, August 2013.
213. "Dynamically Adaptable Gels for 3D Cell Culture," Australasian Polymer Symposium, Darwin, Australia, July 2013.
212. "Hydrogels as Artificial Stem Cell Niches," The 8th International Symposium of Institute Network," Kyoto, Japan, June 2013.
211. "Engineering Matrices for Tissue Regeneration," Canadian Biomaterials Society Annual Meeting, Ottawa, Canada, May 2013.
210. "Tunable Cell Scaffolds in a Couple of Clicks," Department of Chemistry, National Tsing Hua University, Hsinchu, Taiwan, May 2013.
209. "Photoresponsive Hydrogels as Three-Dimensional Cell Culture Systems," Department of Chemistry, National Sun Yat-Sen University, Kaohsiung City, Taiwan, May 2013.
208. "Hydrogels as ECM mimics," Genomics Research Center, Academia Sinica, Taipei, Taiwan, May 2013
207. "Dynamically Tunable Hydrogel Matrices: Cell Biology in the Fourth Dimension," Department of Biomedical Engineering, RPI, Troy, NY, May 2013.
206. "Biomaterials in the fourth dimensions — controlling temporal properties", Society for Biomaterials, Boston, MA, April 2013.
205. "Dynamic cell matrices through bioorthogonal photochemical reactions," Materials Science Program, University of Wisconsin, Madison, WI, April 2013.
204. "Engineering Cell Niches in a Couple of Clicks," Department of Materials Engineering, Monash University, Melbourne, Australia, March 2013.
203. "Multifunctional hydrogels that promote tissue regeneration," Department of Chemical and Biochemical Engineering, Rutgers University, New Brunswick, NJ, January 2013.
202. "Dynamic Cell Niches through Bioorthogonal Photochemical Reactions," NIPAM-80, Kauai, Hawaii, November 2012.
201. "Dynamically tunable stem cell niches," Nobel Forum on Stem Cell Biology, Stockholm, Sweden, October 2012.
200. "Multifunctional hydrogels through photochemical and orthogonal reactions," Polymer Networks Group International Conference, Jackson, WY, August 2012.
199. "Synthetic hydrogels as dynamically tunable stem cell culture niches," International Society for Stem Cell Research, Yokohama, Japan, June 2012.
198. "Goodbye flat biology: Hydrogel cell culture niches," Duke University, Durham, NC, April 2012.
197. "Dynamic cell niches through bioorthogonal photochemical reactions," Materials Research Society, San

Francisco, CA, April 2012.

196. "Hydrogels as synthetic extracellular niches," Department of Cell and Developmental Biology, Vanderbilt, Nashville, TN, January 2012.
195. "Thiol-ene click gels as *in situ* forming, cellularly-degradable biomaterials," TERMIS, Houston, TX, December 2011.
195. "Goodbye flat biology," School of Chemical Engineering, Purdue University Centennial Lecture, West Lafayette, IN, November 2011.
194. "User programmable hydrogel niches for stem cell culture," Days of Molecular Medicine, Hong Kong, November 2011.
193. "Dynamically tunable hydrogels for 3D cell culture," Cells, Development and Cancer seminar series, Anschutz Medical Campus, Denver, CO, September 2011.
192. "Dynamically tunable hydrogel niches for 3D cell culture: Multifunctional click-based networks with spatiotemporally regulated properties," 24th European Conference on Biomaterials, Dublin, Ireland, September 2011.
191. "Stem cell biology in four dimensions," Gordon Research Conference on Biomaterials and Tissue Engineering, Plymouth, NH, August 2011.
190. "Expansion and differentiation of hMSC," Gordon Conference on Bones and Teeth, Les Diableret, Switzerland, June 2011.
189. "Multifunctional click-based networks with dually-tunable properties through orthogonal photocoupling and photodegradation reactions," Hangzhou International Polymer Forum," Hangzhou, China, May 2011.
188. "Programmable hydrogel niches for MSC culture: Biology in four dimensions," Department of Biomedical Engineering, Case Western Reserve University, Cleveland, OH, May 2011.
187. "Programmable niches for stem cell expansion and differentiation," 6th Annual Wisconsin Stem Cell Symposium, Madison, WI, April 2011
186. "How do cells feel?" Materials Research Society Spring Meeting, San Francisco, CA, April 2011.
185. "Dynamically tunable materials to study and direct cell function," University of Houston, Houston, TX, April 2011.
184. "Photoresponsive hydrogels to study and manipulate cell-materials interactions," Australasian Polymer Symposium, Coffs Harbour, Australia, February 2011.
183. "Advances in photopolymer networks for biological applications," European Society for Photopolymer Science, Mulhouse, France, December 2010.
182. "Dynamically tunable materials to study and direct cell function," University of Minnesota, Minneapolis, MN, November 2010.
181. "Biology in four dimensions: Dynamic hydrogel niches for tissue regeneration," Professional Progress Award Lecture, American Institute of Chemical Engineers National Meeting, Salt Lake City, UT, November 2010.
180. "Dynamic surfaces to study and manipulate cell function," Interfacial Phenomena Plenary Lecture, American Institute of Chemical Engineers National Meeting, Salt Lake City, UT, November 2010.
179. "Engineering cell niches in a couple of clicks," University of Toronto, Toronto, Canada, November 2010.
178. "Versatile synthetic extracellular matrix mimics via thiol-ene photopolymerization," MACRO, Glasgow, Scotland, July 2010.
177. "Thiol-ene click gels as 3D models of tumors and tumor cell invasion," Koch Institute, Boston, MA, June 2010.

176. "Studying and directing hMSC differentiation with dynamically tunable materials," Society for Biological Engineering's 2nd Stem Cell Conference, Boston, MA, May 2010.
175. "Engineering Tissue Regeneration," Graduate Student Symposium, Biomedical Engineering, Carnegie Mellon University, April 2010.
174. "Thiol-ene Hydrogels as Synthetic ECM Mimics," University of Michigan, Ann Arbor, MI, March 2010.
173. "Dynamic Cellular Niches and Their Application in 3D VIC Culture," California Institute of Technology, Pasadena, CA, February 2010.
172. "Chondrogenic hMSC Niches," University of Pittsburgh, McGowan Regenerative Medicine Institute, Pittsburgh, PA, January 2010.
171. "Cellular Control in a Couple of Clicks," University of Texas, Austin, TX, January 2010.
170. "Cellular Control in a Couple of Clicks," Iowa State University, Ames, IA, January 2010.
169. "Dynamic 3-D Cell Culture Platforms Based on Sequential Click Reactions," 13th Pacific Polymer Conference, Cairns, Australia, December 2009.
168. "Advances in Dynamic Hydrogel Niches to Promote Tissue Regeneration," American Institute of Chemical Engineers Annual Meeting, Nashville, TN, November 2009.
167. "Future Directions in Regenerative Medicine: Personalized Healing," American Society for Human Genetics, Honolulu, HA, October 2009.
166. "Tailoring biomaterial niches via click reactions for tissue regeneration," American Chemical Society Fall Meeting, Washington DC, August 2009.
165. "Photodegradable hydrogels: Dynamic scaffolds to manipulate cell function," American Chemical Society Fall Meeting, Washington DC, August 2009.
164. "Synthetic Matrices Based on Sequential Click Reaction for Directing Cell Function," European Polymer Federation, Graz, Austria, July 2009.
163. "Dynamic Hydrogel Niche to Manipulate Progenitor Cells," Department of Materials Science & Engineering, Stanford University, Palo Alto, CA May 2009.
162. "Dynamic Surfaces that Modulate Cell Functions," Australian Colloid and Interface Symposium, Adelaide, February 2009.
161. "Engineering Hydrogels for Tissue Regeneration," University of Utah, Salt Lake City, UT, November 2008.
160. "Biomaterial Niches that Direct MSC Differentiation for Craniofacial Applications," International Conference on Frontiers of Dental and Craniofacial Research, Beijing, China, October 2008.
159. "Engineering Hydrogel Niches to Promote Tissue Regeneration," University of Kentucky, Lexington, KY, October 2008.
158. "Engineering Osteogenic Gel Niches to Enhance Bone Regeneration," American Society for Bone and Mineral Research, 30th Annual Meeting, Montreal, Canada, September 2008.
157. "Gel Chemistries that Regulate Valvular Interstitial Cells and their Myofibroblast Properties," Signal Transduction by Engineering Extracellular Matrices, Gordon Research Conference, July 2008.
156. "Photolabile Gels for Dynamic Control of Cellular Niches," Ohio State University, Columbus, OH, May 2008.
155. "Dynamically Tunable Gels for Tissue Regeneration," University of Washington, Seattle, WA May 2008.
154. "Swell Gels: Materials Based Regulation of Cell Function," Cornell, April 2008.
153. "Gel Niches that Promote Heart Valve Regeneration," University of California at Los Angeles, February 2008.
152. "Hydrogel niches for 3D culture of valvular interstitial cells: An interdisciplinary approach to regenerate

- dynamic heart valves,” Keystone Conference on Cardiac Hypertrophy, Copper Mountain, CO, January 2008.
151. “Photografting Antibodies for Rapid Antigen Detection in Biologically Complex Fluids,” AIChE Meeting, Salt Lake City, UT, November 2007.
 150. “Biomaterial Niches that Direct Stem Cell Function,” University of Pennsylvania, Philadelphia, PA, October 2007.
 149. “Current Trends in Regenerative Medicine,” Mead-Johnson Clinical Scholars Program, Portland, OR, September 2007.
 148. “Photopolymer Gel Chemistries to Control Mesenchymal Stem Cell Function,” ACS/AIChE Regional Meeting, Denver, CO, August 2007.
 147. “Photolabile Gel Niches for Guided Mesenchymal Stem Cell Differentiation,” Georgia Institute of Technology, Atlanta, GA, August 2007.
 146. “Polymers in Biology, Bioengineering, and Medicine,” Polymer Division Workshop, National Science Foundation, Washington DC, August 2007.
 145. “Thiol-ene polymerizations for the synthesis of PEG-peptide gels: Novel Synthetic Extracellular Matrix Analogs,” Gordon Research Conference, Mount Holyoke, MA, July 2007.
 144. “Hydrogels as Synthetic Extracellular Niches for 3D Cell Culture,” National Institute of Standards and Technology, Gaithersburg, MD, May 2007.
 143. “Tissue Engineering of a TMJ Disc,” Research Summit of the American Association of Oral and Maxillofacial Surgeons, International Association of Oral and Maxillofacial Surgeons, and the Oral and Maxillofacial Surgery Foundation, Chicago, IL, May 2007.
 142. “Hydrogel Niches Designed to Promote Tissue Regeneration,” North Carolina State University, Raleigh, NC, April 2007.
 141. “Photoinitiated Polymerizations for the Synthesis of Hydrogel Niches for Cell Encapsulation and Tissue Engineering,” Materials Research Society, San Francisco, CA, April 2007.
 140. “Goodbye Flat Biology: Hydrogel Niches for 3D Cell Culture,” Rocky Mountain Bioengineering Symposium, Denver, CO, April 2007.
 139. “Designer Materials for 3D Cell Culture and Tissue Engineering,” Materials Research Society Meeting, Boston, MA, November 2006.
 138. “Passive versus Promoting Stem Cell Niches,” BioX Symposium, Stanford University, Palo Alto, CA, November 2006.
 137. “Engineering Hydrogel Niches as Cell Carriers,” BioX Symposium, Stanford University, Palo Alto, CA, November, 2006.
 136. “Biomaterial Niches that Promote Tissue Regeneration,” Ratcliffe Institute, Harvard University, Cambridge, MA, October 2006.
 135. “Gel Niches Synthesized from Multifunctional Macromolecular Monomers,” Department of Chemical Engineering, University of Texas at Austin, TX, September 2006.
 134. “Engineering gel niches to promote cell survival and tissue regeneration,” International Society for Oxygen Transport to Tissues, Louisville, KY, August 2006.
 133. “Cartilage Regeneration: Fact and Fiction,” Musculoskeletal Biology & Bioengineering Gordon Research Conference, Andover, NH, July 2006.
 132. “Gel Niches for the Regeneration of Dental Tissues,” International Association for Dental Research, Brisbane, Australia, June 2006.

131. "Biomaterial Carriers that Promote Mesenchymal Stem Cell Function for Craniofacial Tissue Regeneration," TMJ Annual Meeting, Broomfield, CO, May 2006.
130. "Polymer Chemistry Approaches to Manipulate Tissue Regeneration," Department of Polymer Science, University of Akron, February 2006.
129. "Hydrogel Niches Designed to Promote Tissue Regeneration," Australasian Biomaterials and Polymer Society Joint Meeting, Rotorua, New Zealand, February 2006.
128. "Bioactive Matrices for 3D Islet Culture," National Jewish Medical and Research Center, Denver, January 2006.
127. "Nanotechnology in Tissue Engineering," American Institute of Chemical Engineers National Meeting, Cincinnati, November 2005.
126. "Hydrogel Niches for 3D Cell Culture and Tissue Regeneration," Department of Chemical Engineering, Stanford University, September 2005.
125. "Hydrogel Niches Designed to Permit or Promote Cell Function," Gordon Research Conference, Biomaterials and Tissue Engineering, Plymouth, NH, August 2005.
124. "Engaging Engineers in Developmental Biology Research," Society for Developmental Biology, San Francisco, CA, July 2005.
123. "Synthetic Hydrogels as Extracellular Matrix Analogs for Tissue Engineering," Engineering Conferences International, Frontiers and Advances in Biotechnology, Biological, and Biomolecular Engineering, Harrison Hot Springs, British Columbia, July 2005.
122. "The Next Generation of Photopolymers for Cell Delivery and Tissue Regeneration," Third International Photopolymerization Fundamentals Conference, Breckenridge, CO, June 2005.
121. "Engineering Principles in the Design of Scaffolds for Cartilage Regeneration," Cleveland Clinic Cartilage Summit, Cleveland, OH, May 2005.
120. "Challenges in Biomaterial Design for Tissue Engineering," NIH Tissue Engineering Conference, Cambridge, MA, May 2005.
119. "Tissue Engineering: Designing Polymers to Regenerate Tissues," Alan S. Michaels Distinguished Lectureship, MIT, April 2005.
118. "Synthetic Polymer Niches that Promote Tissue Regeneration," Harvard University, April 2005.
117. "Synthesis and Design of Osteogenic Hydrogels for the Controlled Differentiation of Mesenchymal Stem Cells," Materials Research Society, San Francisco, CA, March 2005.
116. "Promise and Progress of Tissue Engineering Research," Givens Institute Lecture, Aspen, CO, March 2005.
115. "Tissue Engineering Principles Applied to Development Biology," Department of Biology, University of Colorado at Denver, February 2005.
114. "Osteogenic Scaffolds for the 3D Culture of hMSCs," Department of Chemical and Biochemical Engineering, Colorado State University, February 2005.
113. "Permissive and Promoting Biomaterials for Stem Cell Culture," Department of Biomedical Engineering, University of Virginia, February 2005.
112. "Engineered Biomaterials in Regenerative Medicine," HHMI Cloister Program, February 2005.
111. "Chemical Engineering in 2020: Return of the J.E.D.I.," Department of Chemical and Biological Engineering, University of Colorado, Centennial Celebration, February 2005.
110. "Engineering Aspects of Regenerative Medicine," Gambro, February 2005.
109. "Permissive and Promoting Hydrogel Niches for 3D Cell Culture and Tissue Regeneration," Department of Chemical Engineering, Texas Tech University, January 2005.

108. "Permissive and Promoting Hydrogel Niches for Cartilage Regeneration," Department of Chemical and Biomolecular Engineering, Notre Dame, January 2005.
107. "Biomaterials in Regenerative Medicine: Future Thrusts," American Institute of Chemical Engineers National Meeting, Austin, TX, November 2004.
106. "Delivering DNA with Photopolymers for Applications in Tissue Engineering," The 7th New Jersey Biomaterials Symposium, New Brunswick, NJ, October 2004.
105. "Synthetic Hydrogel Niches for Cell Encapsulation and Tissue Regeneration," National Academy of Engineering Annual Meeting, Bioengineering Section, Washington DC, September 2004.
104. "Micro and Nanopatterning of Hydrogels for Biomaterials Applications," International Bioengineering and Nanotechnology Conference, Biopolis, Singapore, September 2004.
103. "Hydrogels Formed from Multifunctional Macromolecular Monomers and Their Application as Cells Scaffolds," Polymer Networks IUPAC Meeting, Washington DC, August 2004.
102. "Biomaterials for Cartilage Tissue Engineering," Gordon Research Conference on Musculoskeletal Biology & Bioengineering, Andover, NH, July 2004.
101. "Synthesis and Design of Osteogenic Hydrogels for the Controlled Differentiation of Mesenchymal Stem Cells," 3rd German-American Frontiers of Chemistry, Kloster Seeon, Germany, July 2004.
100. "Hydrogels as Chondrocytes Carriers: How Gel Chemistry Influences Tissue Evolution," Regenerate International Conference and Exposition, Seattle, WA, June 2004.
99. "Photopolymerizable Networks with Tailored Degradation and Release Profiles," American Association of Pharmaceutical Scientists Pharmaceutics and Drug Delivery Conference, Philadelphia, PA, June 2004.
98. "What the Biomaterials Lab of the Future Will Look Like," Young Scientists Forum: Biomaterials in the 21st Century, 7th World Biomaterials Congress, Sydney, Australia, May 2004.
97. "Synthetic Polymer Niches for the 3D Culture of Chondrocytes and Regeneration of Cartilage," Department of Chemical and Biological Engineering, Rensselaer Polytechnic Institute, March 2004.
96. "Photopolymer Cell Scaffolds: Tissue Engineering Applied to Dentistry," 20th Annual Scientific Meeting of the Colorado Section, American Association for Dental Research, Denver, CO, February 2004.
95. "Designer Cell Scaffolds for Tissue Regeneration," Department of Chemistry and Biochemistry, University of Delaware, Newark, February, 2004.
94. "If I Only Had a New...Progress and Promise in Tissue Engineering Research," 2004 Annual Meeting of the American Association for the Advancement of Science, Seattle, WA, February 2004.
93. "Biofunctional Gels that Control Stem Cell Differentiation," National Institute of Standards and Technology, Boulder, CO, January 2004.
92. "Designer Biomaterials in Regenerative Medicine," Medical Scientist Training Program, Case Western Reserve University, Cleveland, OH, January 2004.
91. "Engineering 3-D Synthetic Polymer Niches for Tissue Regeneration," Department of Chemistry & Biochemistry, University of Colorado, November 2003.
90. "Hydrogels for Cartilage Tissue Engineering: How Gel Chemistry Influences Chondrocyte Function and Tissue Formation," Department of Chemical Engineering, University of Oklahoma, October 2003.
89. "How Polymer Chemistry Influences Cell Function and Tissue Development," Department of Chemistry, Denver University, October 2003.
88. "Designer Matrices for 3D Cell Culture," Department of Molecular, Cellular, and Developmental Biology, University of Colorado, September 2003.

87. "Multifunctional Hyaluronic Acid Macromers for Photoencapsulated Valvular Interstitial Cells: Designing Gels with Tunable Properties," World Congress on Medical Physics and Biomedical Engineering 2003 Congress, Sydney, Australia, August 2003.
86. "Manipulations in Hydrogel Chemistry Control Photoencapsulated Chondrocyte Behavior and their Extracellular Matrix Production," 26th Australasian Polymer Symposium, Noosa, Australia, July 2003.
85. "Designer Biomaterials in Regenerative Medicine," 18th Annual National M.D./Ph.D. Student Conference, Snowmass, Colorado, July 2003.
84. "*In Situ* Forming Polymers for Tissue Regeneration," Materials Chemistry Forum, Royal Society of Chemistry, London, England, May 2003.
83. "Photocrosslinked Gels for Cartilage Tissue Engineering: Tuning Gel Degradation Behavior and Its Influence on Chondrocyte Function," Department of Chemical Engineering, Princeton University, Princeton, NJ, May 2003.
82. "Designing Tissue Engineering Scaffolds From Multifunctional Macromers," Department of Chemical Engineering, University of Massachusetts, Amherst, April 2003.
81. "*In Situ* Forming Gel Constructs and Monitoring Degradation Behavior to Control Extracellular Matrix Evolution," Spring 2003 Conference of the American Chemical Society, New Orleans, LA, March 2003.
80. "Tissue Engineering with Cells in Gels," Department of Chemical and Biomolecular Engineering, University of Illinois at Urbana-Champaign, March, 2003.
79. "Tissue Engineering with Cells and Gels," Department of Chemical Engineering, Clemson University, Clemson, SC, February, 2003.
78. "Multifunctional Macromolecular Monomers: New Directions in *In Situ* Forming Orthopaedic Biomaterials," University of Colorado Health Sciences Center, Denver, February 2003.
77. "Multifunctional Monomer Photopolymerizations: Experimental Characterization and Simulation of Molecular Microgels," Loctite Corporation, Rocky Hill, CT, February 2003.
76. "Engineering Hydrogels to Control Cell Function," Department of Biomedical Engineering, Yale University, New Haven, CT, February 2003.
75. "Tailoring the Architecture of Degradable Gels for Cartilage Tissue Engineering," Department of Biomedical Engineering, University of Texas at Austin, January 2003.
74. "Cells, Gels, and Tissue Engineering," Department of Chemical Engineering, Pennsylvania State University, State College, PA, December 2002.
73. "Multifunctional Macromolecular Monomers: New Directions in *In Situ* Forming Orthopaedic Biomaterials," Polymers in Medicine and Biology: 2002 Conference, Sonoma Valley, CA, November 2002.
72. "Photopatterning Gels to Design Cell Scaffolds," Department of Chemical Engineering, Massachusetts Institute of Technology, Cambridge, MA, October, 2002.
71. "Designing Photopolymers to Encapsulate Cells for Tissue Engineering," 3M, Minneapolis, MN, October 2002.
70. "Engineering Polymers to Control Cell Function," Gene Regulation in Differentiation and Development Science Meeting, Howard Hughes Medical Institute, Chevy Chase, MD, October 2002.
69. "Modeling Release from Degradable PEG Hydrogels and Their Application in the Delivery of Osteoconductive Growth Factors," Second Joint Meeting of the IEEE Engineering in Medicine and Biology Society and the Biomedical Engineering Society, Houston, TX, October 2002.
68. "Engineering Gels to Control Cell Function and Tissue Evolution," American Chemical Society ProSpectives Conference Series, Boston, MA, October 2002.

67. "Cells, Gels, and Tissue Engineering," Department of Chemical Engineering, University of California, Berkeley, October 2002.
66. "Engineering Gels to Control Cell Function and Tissue Development," Department of Chemical Engineering, California Institute of Technology, Pasadena, CA, October 2002.
65. "Multifunctional Macromolecular Monomers: New Directions in *In Situ* Forming Orthopaedic Biomaterials," Department of Material Science and Engineering, University of Michigan, Ann Arbor, MI, September 2002.
64. "Photopolymerization in the Presence of Cells? New Directions in Tissue Engineering," Second International Photopolymerization Fundamentals Conference, Breckenridge, CO, June 2002.
63. "Polymers for DNA Delivery," Educational Symposium, Society for Gene Therapy, Boston, June 2002.
62. "Biomimetic Gels for Orthopaedic Tissue Engineering," Biomaterials for Engineered ECM, Gordon Research Conference, New London, CT, June 2002.
61. "Photopolymers: The Next Generation of Cell Scaffolds," DuPont Discovery Chemistry Seminar Series, DuPont Experimental Station, May 2002.
60. "Photocrosslinkable and Degradable Polymer Networks," Department of Biomedical Engineering, Johns Hopkins University, April 2002.
59. "Rationally Designed Biomaterials for Bone Tissue Engineering," Program of Biomedical Sciences, University of Pittsburgh, April 2002.
58. "Degradation Networks: Controlling and Predicting Erosion Profiles," Department of Chemistry, University of Virginia, March 2002.
57. "Degradation Behavior of Photocrosslinked Hydrogels and Their Application in Cartilage Tissue Engineering," Division of Biomedical Sciences, Harvard University, March 2002.
56. "Photopolymerized Biomaterials: *In Situ* Formation and Micropatterning," Department of Bioengineering, Arizona State University, March 2002.
55. "Degradation Behavior of Photocrosslinked Hydrogels and their Application in Cartilage Tissue Engineering," School of Chemical Engineering, Cornell University, February 2002.
54. "Photopolymerized Orthopaedic Biomaterials with Osteoconductive Properties," Department of Chemical Engineering, University of Louisville, January 2002.
53. "Photopolymerization of Degradable Polymer Networks and Their Application in Medicine," Department of Chemical Engineering, University of Wisconsin, December 2001.
52. "Degradation Kinetics Influence ECM Production of Photoencapsulated Chondrocytes in PEG-Based Hydrogels," American Chemical Society Fall Meeting, Chicago, IL, August 2001.
51. "Molecular and Cellular Characterization of Valvular Interstitial Cells on Polymeric Tissue Engineering Scaffolds," American Chemical Society Fall Meeting, Chicago, IL, August 2001.
50. "Photopolymerization of Degradable Polymer Networks and Their Application in Medicine," DSM Desotech, Elgin, IL, July 2001.
49. "Release Behavior of Macromolecules from Degrading Polymer Networks," Macromolecular Drug Delivery and Pharmaceutical Biotechnology Symposium, Breckenridge, CO, July 2001.
48. "Photopolymerizable Biomaterials in Cartilage Tissue Engineering," Polymers Gordon Research Conference, New London, NH, July 2001.
47. "Designer Materials for Medical Applications," Medical Student Fellows Meeting, Howard Hughes Medical Institute, May 2001.
46. "New Directions in Photopolymerizable Biomaterials," Materials Research Society, San Francisco, CA, April 2001.

45. "The Body Shop: New Directions in Polymeric Biomaterials," American Chemical Society Rocky Mountain Sectional Meeting, Denver, CO, January 2001
44. "The Convergence of Nanotechnology, Biomaterials, and Medicine," American Institute of Chemical Engineers 2000 Fall Meeting, Los Angeles, CA, November 2000.
43. "Degradation Behavior of Hydrogels and their Application in Cartilage Tissue Engineering," Department of Chemical Engineering, Johns Hopkins University, November 2000.
42. "*In Situ* Forming Degradable Networks and Their Application in Tissue Engineering and Drug Delivery," 10th International Symposium on Recent Advances in Drug Delivery Systems, Salt Lake City, UT, February 2001.
41. "Photopolymerization of Degradable Polymer Networks and Their Biological Applications," Department of Chemical Engineering, University of Delaware, November 2000.
40. "Photopolymerization of Degradable Polymer Networks and Their Biological Applications," Department of Chemical Engineering, Rutgers University, November 2000.
39. "*In Situ* Forming Polymeric Biomaterials and Their Use in Drug Delivery," 5th New Jersey Symposium on Biomaterials Science, Piscataway, NJ, November 2000.
38. "New Directions in Photopolymerizable Biomaterials," DuPont Horizons in Biotechnology Seminar, Experimental Station, Wilmington, DE, October 2000.
37. "Degradation Behavior of Hydrogels and their Application in Cartilage Tissue Engineering," Department of Bioengineering, Rice University, October 2000.
36. "Current Trends and Future Directions in Tissue Engineering," Pediatric Short Course, Aspen, CO, August 2000.
35. "Photopolymerization of Degradable Networks and Their Biological Applications," US/Germany Polymer Symposium, Northwestern University, August 2000.
34. "Novel Materials for Tissue Repair and Engineering," The First Annual Scientific Meeting of The TMJ Association, Bethesda, MD, May 2000.
33. "Photopolymerizable Biomaterials for Orthopaedic Applications," Department of Chemical Engineering, Colorado State University, February 2000.
32. "Photocrosslinkable, Degradable Networks," Department of Chemistry, Bowling Green University, January 2000.
31. "Photopolymerizations in Bioengineering," 50 Years of Photopolymerization Technology, DuPont Experimental Station, June 2000.
30. "Photopolymerization of Degradable Polymer Networks and Their Medical Applications," University of Minnesota, March 2000.
29. "*In Situ* Formation of Polymeric Biomaterials," American Chemical Society 2000 Spring Meeting, San Francisco, CA, March 2000.
28. "*In Situ* Forming Biomaterials," Department of Chemical Engineering, Texas A&M University, October 1999.
27. "Biodegradable Polymers for Tissue Engineering," Gordon Conference on Reactive Polymers, Ion Exchangers and Adsorbents, New England College, NH, July 1999.
26. "*In Situ* Forming Biomaterials," Department of Chemical Engineering, University of Illinois, May 1999.
25. "New Directions in Photopolymerizable Biomaterials," Department of Chemical Engineering, University of Michigan, April 1999.
24. "Orthopaedic Biomaterials Based on Photocrosslinkable and Degradable Multifunctional Monomers," American Chemical Society 1999 Spring Meeting, Anaheim, CA, March 1999.

23. "New Directions in Photopolymerizable Biomaterials," Department of Chemical Engineering, University of California Santa Barbara, March 1999.
22. "New Directions in Photopolymerizable Biomaterials," Department of Chemical Engineering, Northwestern University, January 1999.
21. "Novel Applications of Photopolymerization in Medicine," Department of Chemical Engineering, University of South Carolina, January 1999.
20. "Novel Orthopaedic Biomaterials Based on Crosslinkable Polyanhydrides," School of Chemical Engineering, Purdue University, February 1999.
19. "Structural Evolution in Highly Crosslinked Materials Formed by Photopolymerizations," NAPP Systems Inc., San Marcos, CA, November 1998.
18. "Novel Applications of Photopolymerization in Bioengineering," JASON Fall Meeting, November 1998.
17. "Photopolymerizations in Bioengineering," Department of Chemical Engineering, University of Iowa, October 1998.
16. "Transdermal Photopolymerization for Cartilage Tissue Engineering," Biomedical Engineering Society 1998 Annual Fall Meeting, Cleveland, OH, October 1998.
15. "Characterization of Highly Crosslinked Polymer Films by Photopolymerization," 5th Biannual North American Research Conference on The Science and Technology of Organic Coatings, Hilton Head Island, SC, November 1998.
14. "Photopolymerization in Bioengineering," Packard Fellowship Meeting, Santa Fe, NM, September 1998.
13. "Photopolymerization of Surface Eroding Networks and Their Application in Medicine," World Polymer Congress – MACRO'98, Gold Coast, Australia, July 1998.
12. "Photocurable Monomers That Surface Erode," DuPont, Experimental Station, Wilmington, DE, May 1998.
11. "New Directions for Photopolymerizations Applied to Medicine," Hanyang University, Seoul, Korea, May 1998.
10. "Surface Eroding Polyanhydride Networks," Korean Science and Engineering Foundation, Seoul, Korea, May 1998.
9. "Hydrogels With Controlled Microstructure for Drug Delivery," School of Pharmacy, University of Colorado Health Science Center, Denver, CO, May 1998.
8. "Non-idealities of the Structural Evolution of Highly Crosslinked Networks," Photopolymerization Conference, Macromolecular Photochemistry Center at the University of Southern Mississippi, March 1998.
7. "Photopolymerizations in Biomedical Applications," Abbott Laboratories, Abbott Park, IL, January 1998.
6. "Kinetics and Structural Evolution of Nonideal Networks," CibaVision, Duluth, GA, January 1998.
5. "Novel Polymers for the Repair of Cartilage," Plastic Surgery Grand Rounds, Massachusetts General Hospital, Boston, MA, October 1997.
4. "A New Class of Photopolymerizable, Surface Eroding Polymers for Medical Applications," Surfaces in Biomaterials, Minneapolis, MN, September 1997.
3. "Teaching Graduate Students to Teach," American Society for Engineering Education Chemical Engineering Summer School, Snowbird, UT, August 1997.
2. "Photopolymerizations in Biomedical Engineering," Department of Chemical Engineering, Colorado School of Mines, April 1997.
1. "Biodegradable Polyanhydride Glasses: High-Strength, Surface-Eroding Polymers," Bio'96 International Biotechnology Meeting and Exhibition, Philadelphia, PA, June 1996.

PRESENTATIONS AT NATIONAL AND INTERNATIONAL MEETINGS

451. “Granular Hydrogel Scaffolds Modulate MSC Microenvironment and Extracellular Vesicle Secretion for Calvarial Defect Bone Regeneration,” American Institute of Chemical Engineers Annual Conferences, Orlando, FL, November 2023.
450. “Reversible Intracellular Gelation Reduces MCF10A Spheroid Growth,” American Institute of Chemical Engineers Annual Conferences, Orlando, FL, November 2023.
449. “Photo-Responsive Hydrogel System to Study Mechano-Transduction during Intestinal Tissue Homeostasis,” American Institute of Chemical Engineers Annual Conferences, Orlando, FL, November 2023.
448. “Characterization of Rheological Properties and Microstructure of Thioester Networks during Degradation,” American Institute of Chemical Engineers Annual Conferences, Orlando, FL, November 2023.
447. “Spatiotemporally controlled matrix softening facilitates deterministic crypt formation in iPSC-derived intestinal organoids,” Biomedical Engineering Society, Seattle, WA, October 2023.
446. “A quantitative approach to classify aortic valve interstitial cell phenotypes in vitro,” Biomedical Engineering Society, Seattle, WA, October 2023.
445. “Bottlebrush Polymer Hydrogels Exhibit Nonlinear Elasticity and Dictate hMSC and Multicellular Construct Morphology and Mechano-transduction,” American Chemical Society, San Francisco, CA, August 2023.
444. “Reciprocal Cell-ECM Dynamics Drive Nematic Ordering of C2C12 Myotubes on Anisotropic Liquid Crystalline Polymer Networks,” Society for Biomaterials Annual Conference, San Diego, CA, April 2023.
443. “Formation of Complex Multi-Cellular Structures of MSCs Embedded in Stress Relaxing PEG-HA Hybrid Hydrogels,” Society for Biomaterials Annual Conference, San Diego, CA, April 2023.
442. “Photo-responsive Synthetic Hydrogels for the Culture of Murine Intestinal Stem Cell Derived Monolayers,” Society for Biomaterials Annual Conference, San Diego, CA, April 2023.
441. “Sex-specific Valvular Myofibroblast Activation in Response to Nano-scale Stiffness Cues,” Society for Biomaterials Annual Conference, San Diego, CA, April 2023.
440. “Induced Epithelial Curvature in Photopatterned Intestinal Organoids Regulates Symmetry Breaking via Pre-Transcriptional Changes in Membrane Tension and Resting Potential,” Society for Biomaterials Annual Conference, San Diego, CA, April 2023.
439. “Dithiolane-Based Dynamic Hydrogels for Photoinduced Crosslinking, Exchange, and Depolymerization,” Society for Biomaterials Annual Conference, San Diego, CA, April 2023.
438. “Strain-Stiffening Bottlebrush Polymer Hydrogels Influence hMSC Morphology and Mechano-transduction,” Society for Biomaterials Annual Conference, San Diego, CA, April 2023.
437. “Strain-stiffening bottlebrush polymer hydrogels influence hMSC morphology and mechano-transduction,” ACS Polymers in Medicine and Biology, Sonoma, CA, November 2022.
436. “Photoinduced Dithiolane Crosslinking, Exchange, and Depolymerization for Dynamic Hydrogels,” American Institute of Chemical Engineers Annual Meeting, Phoenix, AZ, November 2022.
435. “Rheological characterization of covalent adaptable thioester networks for delivery of human mesenchymal stem cells (hMSCs),” The Society for Rheology, Chicago, IL, October 2022.
434. “Photopatterning facilitates deterministic crypt formation in iPSC-derived intestinal organoids.” Biomedical Engineering Society Annual Meeting, San Antonio, TX, October 2022.
433. “Mechanisms of cardiac growth in pythons after feeding,” Cardiac Mechano-Electric Coupling and Arrhythmias (MEC2022), Freiburg, Germany, September 2022.
432. “Granular PEG hydrogels mediate osteoporotic MSC clustering via N-cadherin influencing the pro-resorptive bias of their secretory profile” European Society for Biomaterials Annual Meeting, Bordeaux, France, September 2022.

431. "Photoinduced Hydrogel Network Reorganization Modulates Intestinal Organoid Epithelial Shape to Template Crypt Formation." European Society for Biomaterials Annual Meeting, Bordeaux, France, September 2022.
430. "In situ super-resolution imaging of organoids and extracellular matrix interactions via photo-expansion microscopy," GRC Signal Transduction by Engineered Extracellular Matrices, Manchester, NH, July 2022
429. "Molecular engineering of liquid crystal-poly(ethylene glycol) (LC-PEG) block copolymers for 3D printed biomaterial scaffolds," Materials Research Society, Honolulu, HI, May 2022
428. "Bioorthogonal click intracellular hydrogelation to control cell cycle behavior," Materials Research Society, Honolulu, HI, May 2022
427. "Characterization of Radical-Mediated [2+2] Photocycloaddition of Maleimide Monomers and Macromers," Materials Research Society, Honolulu, HI, May 2022
426. "Photopatterning facilitates deterministic crypt formation in iPSC-derived intestinal organoids." Biomedical Engineering Society Annual Meeting, San Antonio, TX, May 2022
425. "In situ super-resolution imaging of organoids and extracellular matrix interactions via photo-expansion microscopy." Materials Research Society, Honolulu, HI, May 2022.
424. "Organoids as tools for fundamental discovery and translation," Keystone Symposia, Keystone, CO, April 2022
423. "Engineering multi-cellular living systems," Keystone Symposia, Keystone, CO, April 2022
422. "Hydrogel cultures reveal TRPV4 regulation of myofibroblast activation and proliferation in valvular interstitial cells," Society for Biomaterials Annual Meeting, Baltimore, MD, April 2022.
421. "Photoinduced Hydrogel Network Reorganization Modulates Intestinal Organoid Shape to Direct Fate Specification." Society for Biomaterials Annual Meeting, Baltimore, MD, April 2022.
420. "Photopatterning facilitates deterministic crypt formation in iPSC-derived intestinal organoids," Society for Biomaterials Annual Meeting, Baltimore, MD, April 2022.
419. "Porous bio-click microgel scaffolds to study and control the osteoporotic mesenchymal stromal cell secretory profile," Society for Biomaterials Annual Meeting, Baltimore, MD, April 2022.
418. "Inflammatory serum factors from aortic valve stenosis patients drive sex differences in valve myofibroblasts," Society for Biomaterials Annual Meeting, Baltimore, MD, April 2022.
417. "In situ super-resolution imaging of organoids and extracellular matrix interactions via photo-expansion microscopy," Society for Biomaterials Annual Meeting, Baltimore, MD, April 2022.
416. "Reversible intracellular hydrogelation to induce macromolecular crowding and control cell cycle behavior," Society for Biomaterials Annual Meeting, Baltimore, MD, April 2022.
415. "In situ modulation of cell shape directs intestinal organoid crypt formation," Wellcome Connecting Science Symposium on Organoids: Advances and Application, September 2021.
414. "Photoinduced changes in cell shape drive crypt formation in intestinal organoids," NextGen Tissue Engineering Trainee Symposium, September 2021.
413. "Adaptable hydrogels engineered for in situ super-resolution imaging of organoids and extracellular matrix interactions via photoexpansion microscopy," Wellcome Connecting Science Organoids: Advances and Applications Conference, September 2021.
412. "Macromolecular crowding by bio-orthogonal hydrogelation and its effect on intracellular diffusion and cellular function," ACS Fall meeting, San Diego, CA August 2021.
411. "Liquid crystal polymers as biomaterial scaffolds," ACS Fall meeting, San Diego, CA August 2021.

410. "Rheological characterization of covalent adaptable thioester networks," The Society of Rheology, Bangor, ME, October 2021
409. "In situ modulation of intestinal organoid cell shape directs cell fate specification and crypt formation, poster presentation," Digestive Disease Week Virtual Meeting, May 2021
408. "Engineering porous assembled microgel scaffolds to increase rat mesenchymal stromal cell secretome for bone regeneration applications," Society for Biomaterials, April 2021
407. "Photoinduced hydrogel network reorganization facilitates in situ modulation of intestinal organoid epithelial shape", Society for Biomaterials, April 2021
406. "Synthetic hydrogels to study ECM dynamics of intestinal organoids," Society for Biomaterials, April 2021.
405. "Sex-specific valvular myofibroblast activation on engineered hydrogel substrates." World Biomaterials Congress, Virtual Conference, Glasgow, December 2020.
404. "Sex-specific valvular myofibroblast activation in response to nano-scale stiffness cues." World Biomaterials Congress, Virtual Conference, Glasgow, December 2020.
403. "Photoadaptable hydrogels enable precise spatial control over intestinal organoid epithelial curvature to direct *in vivo* crypt formation," Biomedical Engineering Society Meeting, Virtual Meeting, October 2020.
402. "Photopolymerized hydrogels for expansion microscopy of intestinal organoids," Biomedical Engineering Society Meeting, Virtual Meeting, October 2020.
401. "Modulation of hydrogel biophysical properties using photoadaptable chemistry improves formation of intestinal organoids," American Physical Society Meeting, Denver, CO, March 2020.
400. "Phototunable Viscoelasticity in Hydrogels Through Thioester Exchange," American Physical Society Meeting, Denver, CO, March 2020.
399. "Dynamic patterning of signaling proteins in hydrogels via a reversible thiol-ene bioconjugation reaction." Biomedical Engineering Society National Meeting, Philadelphia, PA, October 2019.
398. "Pro-inflammatory cues from macrophages inhibit myofibroblast activation of valvular interstitial cells," Biomedical Engineering Society National Meeting, Philadelphia, PA, October 2019.
397. "Sex-specific valvular myofibroblast activation in response to nano-scale stiffness cues." Biomedical Engineering Society Annual Meeting, Philadelphia, PA, October 2019.
396. "Transcatheter aortic valve replacements alter circulating serum factors to mediate valve and cardiac myofibroblast de-activation." Biomedical Engineering Society Annual Meeting, Philadelphia, PA, October 2019.
395. "Sex-specific valvular myofibroblast activation on engineered hydrogel substrates." Biomedical Engineering Society Annual Meeting, Philadelphia, PA, October 2019.
394. "Development of a reversible and repeatable thiol-ene reaction for controlled presentation of signaling proteins in hydrogels." American Chemical Society National Meeting, San Diego, CA, August 2019.
393. "Relaxation of Extracellular Matrix Forces Directs Crypt Formation and Architecture in Intestinal Organoids," Cell Symposium, Engineering Organoids and Organs, San Diego, CA, August 2019.
392. "Controlled hydrogel photodegradation improves colony formation of intestinal organoids," Cell Symposium, Engineering Organoids and Organs, San Diego, CA, August 2019.
391. "The Role of Mechanotransduction on Myobalsts in Muscle Injury Using Dynamically Stiffening Polymers," Nationals MD/PhD Student Conference, Copper Mountain, CO, July 2019.
390. Sex-specific valvular myofibroblast activation on engineered hydrogel culture substrates." Gordon Research Conference, Biomaterials and Tissue Engineering, Castelldefels, Spain, July 2019.

389. "In situ substrate stiffening leads to alterations in epigenetic landscape to mediate osteogenesis", Gordon Research Conference, Biomaterials and Tissue Engineering, Castelldefels, Spain, July, 2019
388. "Transcatheter aortic valve replacements alter circulating serum factors that mediate myofibroblast activation of valvular interstitial cells." European Molecular Biology Organization: Molecular Mechanisms of Tissue Injury, Repair, and Fibrosis, Spetses, Greece, May 2019.
387. "Persistent activation of valvular myofibroblasts requires global chromatin condensation" European Molecular Biology Organization: Molecular Mechanisms of Tissue Injury, Repair, and Fibrosis. Spetses, Greece, May 2019.
386. "Viscoelastic imine covalent adaptable networks (CANs) for cartilage tissue engineering" Anschutz Orthopedic Research Symposium. Denver, CO, May 2019.
385. "Secreted factors from macrophages reduce valvular interstitial cell myofibroblast activation Society for Biomaterials Annual Meeting, Seattle, WA, April 2019.
384. "Valvular myofibroblast persistent activation requires global chromatin condensation," Society for Biomaterials Annual Meeting, Seattle, WA, April 2019.
383. "Extended exposure to stiff microenvironments leads to persistent chromatin remodeling in human mesenchymal stem cells," Society for Biomaterials Annual Meeting, Seattle, WA, April 2019.
382. "Directing the Secretary Phenotype of Human Mesenchymal Stem Cells in Porous Assembled Microgel Networks," Society for Biomaterials Annual Meeting, Seattle, WA, April 2019.
381. "Fibrotic and Calcific Roles of TNF- α on Valvular Interstitial Cells Encapsulated within 3D MMP-degradable Hydrogels," Society for Biomaterials Annual Meeting, Seattle, WA, April 2019.
380. "Anthracene Based Dynamic Hydrogels to Probe Stiffness-Mediated Changes in Cardiac Fibroblasts," Society for Biomaterials Annual Meeting, Seattle, WA, April 2019.
379. "The Role of Osteopontin and Sex-Specific Differences in Valvular Interstitial Cells and Their Response to Biochemical Cues," Society for Biomaterials Annual Meeting, Seattle, WA, April 2019.
378. "The Role of Chaperone-Mediated Autophagy on Mechanotransduction in Myoblasts," Keystone Conference on Autophagy: From Model Systems to Therapeutic Opportunities, Santa Fe, NM, Feb. 2019.
377. "Serum from transcatheter aortic valve replacement patients reveals links to valvular myofibroblast activation." Biomedical Engineering Society Annual Meeting, Atlanta, GA, October 2018.
376. "Hydrazone Covalent Adaptable Networks to Modulate ECM Deposition for Cartilage Tissue Engineering," Biomedical Engineering Society Annual Meeting, Atlanta, GA, October 2018.
375. "Orthogonal dual protein patterning to probe synergistic protein effects," BioInterface Workshop & Symposium, Boulder, CO, Oct 2018
374. "Hydrazone crosslink equilibria in covalent adaptable networks influence chondrocyte proliferation and extracellular matrix deposition for cartilage tissue engineering," BioInterface Workshop & Symposium, Boulder, CO, Oct 2018
373. "On demand stiffening poly(ethylene glycol) (PEG) hydrogels via [4+4] photocycloaddition of anthracenes," American Chemical Society Fall Meeting, Boston, MA, August 2018.
372. "Dynamic patterning of signaling proteins to hydrogels through a reversible thiol-ene bioconjugation," American Chemical Society Fall Meeting, Boston, MA, August 2018.
371. "Rescuing Mesenchymal Stem Cell Regenerative Properties on Hydrogel Substrates Post Serial Expansion", Signal Transduction by Engineered Extracellular Matrices Gordon Research Conference, Andover, NH. July 2018.

370. "Serum from transcatheter aortic valve replacement patients reveals links to valvular myofibroblast activation." Gordon Research Conference: Signal Transduction in Engineered Extracellular Matrices, Andover, NH, July 2018.
369. "Photopolymerized dynamic hydrogels with tunable viscoelastic properties through thioester exchange," Society for Biomaterials Annual Meeting, Atlanta, GA, April 2018.
368. "Covalent tethering of signaling proteins to hydrogels through a reversible thiol-ene bioconjugation," Society for Biomaterials Annual Meeting, Atlanta, GA, April 2018.
367. "Boronate-based hydrogels with fast relaxation dynamics for 3D cell culture," Society for Biomaterials Annual Meeting, Atlanta, GA, April 2018.
366. "Recapitulating physical changes in the extracellular matrix with dynamic hydrogels," Society for Biomaterials Annual Meeting, Atlanta, GA, April 2018.
365. "Spatiotemporal control over intestinal organoid formation in photodegradable hydrogels," Society for Biomaterials Annual Meeting, Atlanta, GA, April 2018.
364. "The role of mechanotransduction on myoblasts in muscle injury using dynamically stiffening polymers," Society for Biomaterials Annual Meeting, Atlanta, GA, April 2018.
363. "Matrix stiffness contributes to pathological activation of cardiac fibroblasts," Biophysical Society, San Francisco, CA, February 2018.
362. "Controlling differentiation of human mesenchymal stem cells in viscoelastic synthetic microenvironments," Cellular and Molecular Bioengineering Conference, Key Largo, FL, January 2018.
361. "Developing novel viscoelastic hydrogels based on boronate esters for understanding cell-matrix interactions," Cellular and Molecular Bioengineering Conference, Key Largo, FL, January 2018.
360. "Three-dimensional PEG hydrogels to probe cytokine role in VIC myofibroblast activation and wound healing response," TERMIS Annual Meeting, Charlotte, NC, December 2017.
359. "Manipulating Fibroblast Mechanical Memory with Phototunable PEG Hydrogels," TERMIS Annual Meeting, Charlotte, NC, December 2017.
358. "Sequential Tethering of Proteins to Hydrogels through a Reversible thiol-ene Reaction," Materials Research Society Fall Meeting, Boston, MA, November 2017.
357. "Clickable Microgel Scaffolds as Platforms for 3D Cell Encapsulation," Materials Research Society Fall Meeting, Boston, MA, November 2017.
356. "Tunable 3D Hydrogel Scaffolds to Assess Fibroblast Contractility During the Wound Healing Response," Materials Research Society Fall Meeting, Boston, MA, November 2017.
355. "PEG Cell Culture Platform with *In Situ* Tunable Mechanical Properties to Study the (Ir)reversibility of the MSC Fate," Materials Research Society Fall Meeting, Boston, MA, November 2017.
354. "Using Covalent Adaptable Hydrogels for Understanding Cell-Matrix Interactions," Multiscale Mechanochemistry and Mechanobiology, Berlin, Germany, October 2017.
353. "Photoinduced viscoelasticity in hydrogels to study cellular mechanotransduction." The Society of Rheology 89th Annual Meeting, Denver, CO, October 2017.
352. "Investigating Valve Interstitial Cell Mechanics Using A Synthetic Poly(ethylene glycol) Hydrogel," Biomedical Engineering Society, Phoenix, AZ, October 2017.
351. "Photodegradable, photoadaptable hydrogels crosslinked by allyl sulfides for cell culture applications," American Chemical Society Spring Meeting, Washington DC, August 2017.
350. "Spatiotemporal tethering of proteins to hydrogels through reversible thiol-ene bioconjugation," American Chemical Society Spring Meeting, Washington DC, August 2017.

349. "Valular Interstitial cells response to subcellular matrix mechanics organization created by photo-tunable hydrogel substrates," Gordon Research Conference, Biomaterials and Tissue Engineering, Holderness, NH, July 2017.
348. "Serum from transcatheter aortic valve replacement patients mediates valvular interstitial cell activation." Gordon Research Conference, Biomaterials and Tissue Engineering, Holderness, NH, July 2017.
347. "Amplified photodegradation of cell-laden hydrogels through an addition-fragmentation reaction," American Chemical Society Spring Meeting, San Francisco, CA, April 2017.
346. "Serum from transcatheter aortic valve replacement patients reveal links to valvular interstitial cell activation," Society for Biomaterials Annual Meeting, Minneapolis, MN, April 2017.
345. "Amplified photodegradation of biomaterial networks and their applications in cell culture," Society for Biomaterials Annual Meeting, Minneapolis, MN, April 2017.
344. "Monitoring spatiotemporal proteolytic activities using fluorogenic microgels in a biomimicked tumor microenvironment," Society for Biomaterials Annual Meeting, Minneapolis, MN, April 2017.
343. "Serum from transcatheter aortic valve replacement patients reveals links to valvular interstitial cell activation." Heart Valve Society Annual Meeting – Grimaldi Forum, Monaco, March 2017.
342. "Understanding the role of stiffness in pathological cardiac fibroblast signaling," Biophysical Society Meeting, San Francisco, CA, February 2017.
341. "Addition-fragmentation chain transfer crosslinked hydrogels for rapid photoinduced degradation and stress-relaxation," Australasian Polymer Symposium, Lorne, Australia, November, 2016.
340. "Microrheological Measurements of the Degradation of Covalently Adaptable Hydrogel Scaffolds," American Institute of Chemical Engineers Annual Meeting, San Francisco, CA, November 2016.
339. "Passive microrheological characterization of the degradation of covalently adaptable hydrogel scaffolds," Society for Rheology, Baltimore, MD, October 2016.
338. "Engineering hydrogels with dynamic viscoelastic properties for 3D cell culture," ACS Fall meeting, Philadelphia, PA, August 2016.
337. "Dynamic immobilization of proteins within hydrogels through reversible thiol-ene chemistry," ACS Fall meeting, Philadelphia, PA, August 2016.
336. "Emerging Materials to Understand and Treat Cardiac Valve Pathologies," Heart Valve Disorders Conference, Cambridge, UK, July 2016.
335. "Synthesis of MMP sensor microgels for spatial and temporal monitoring of MMP activity," World Biomaterials Congress, Montreal, Canada, May 2016.
334. "Surface patterned dermal-epidermal co-culture hydrogels to mimic the hair follicle niche," World Biomaterials Congress, Montreal, Canada, May 2016.
333. "Photoregulated hydrazone based hydrogel formation for biochemically patterning 3D cellular microenvironments," World Biomaterials Congress, Montreal, Canada, May 2016.
332. "Supramolecular hyaluronic acid-based hydrogels with dynamic viscoelasticity," World Biomaterials Congress, Montreal, Canada, May 2016.
331. "High-throughput platform to investigate effects of dynamic presentation of mechanical and biochemical matrix cues on VIC phenotype," World Biomaterials Congress, Montreal, Canada, May 2016.
330. "Dynamic Immobilization of Proteins within Hydrogels using Reversible Thiol-Ene Chemistry," Materials Research Society Fall Meeting, Boston, MA, December 2015.
329. "A Strategy for Reversible Photocontrol of Hydrogel Modulus to Modulate Cell Behavior," Materials Research Society Fall Meeting, Boston, MA, December 2015.

328. "Microrheological measurement of the degradation of covalently adaptable hydrogel scaffolds," American Institute of Chemical Engineers Annual Meeting, Salt Lake City, UT, November 2015.
327. "Engineering hydrogels with a reversibly tunable modulus to probe cell behavior," American Institute of Chemical Engineers Annual Meeting, Salt Lake City, UT, November 2015.
326. "Passive microrheological characterization of the degradation of covalent adaptable hydrogel scaffolds," Society for Rheology, Baltimore, MD, October 2015.
325. "Reversibly Stiffening Hydrogels to Probe Myofibroblast Activation," Society for Biomaterials, Charlotte, NC, April 2015.
324. "Temporal control over multiple biological signals using photochemical reactions," ACS Spring Meeting, Denver, CO, March 2015.
323. "Photodegradable hydrogels for studying axon guidance and the user-directed formation of neural circuits," ACS Spring Meeting, Denver, CO, March 2015.
322. "Multifunctional hydrogel assays for 3D culture of melanoma cells reveal increased matrix metalloproteinase activity and migration in response to BRAF/MEK inhibitors," ACS Spring Meeting, Denver, CO, March 2015.
321. "Light-responsive strategy for reversible control of elastic modulus in PEG-based hydrogels," ACS Spring Meeting, Denver, CO, March 2015.
320. "Functionalization of hydrogels with matrix metalloproteinase-sensitive fluorogenic biosensors to measure cancer cell response to drug treatment," ACS Spring Meeting, Denver, CO, March 2015.
319. "Dynamic stiffening of poly(ethylene glycol)-based hydrogels to direct valvular interstitial cell phenotype in a 3D environment," ACS Spring Meeting, Denver, CO, March 2015.
318. "Dynamic hydrazone-crosslinked hydrogels provide an adaptable matrix for 3D cell culture," ACS Spring Meeting, Denver, CO, March 2015.
317. "Development of a cellularly degradable PEG hydrogel to promote articular cartilage extracellular matrix deposition," ACS Spring Meeting, Denver, CO, March 2015.
316. "Cell-material interactions in synthetic hydrogel scaffolds," ACS Spring Meeting, Denver, CO, March 2015.
315. "Thiol-ene photoclick chemistry as an approach for user directed covalent tethering of bioactive proteins to synthetic hydrogel scaffolds," ACS Spring Meeting, Denver, CO, March 2015.
314. "Dynamic Stiffening of Poly(ethylene glycol)-Based Hydrogels to Direct Valvular Interstitial Cell Phenotype in a Three-Dimensional Environment," American Institute for Chemical Engineers Annual Meeting, Atlanta, GA, November 2014.
313. "Dynamic cell-material interactions measured by passive microrheology," American Institute for Chemical Engineers Annual Meeting, Atlanta, GA, November 2014.
312. "A Hydrogel-Based Cell Culture Platform with Reversible Stiffening via an Azobenzene-Containing Crosslinker." American Institute for Chemical Engineers Annual Meeting, Atlanta, GA, November 2014.
311. "Measuring protease activity in 3D microenvironments," American Society for Matrix Biology, Cleveland, OH, October 2014.
310. "Dynamic cell-material interactions measured by passive microrheology," Society of Rheology, Philadelphia, PA, October 2014.
309. "Degradation of covalently adaptable hydrogels manipulating their chemical equilibrium," Society of Rheology, Philadelphia, PA, October 2014.
308. "Reversibly Stiffening Hydrogels to Probe Myofibroblast Activation." Signal Transduction in Engineered Extracellular Matrices Gordon Research Conference, Waltham, MA, July 2014.

307. "Reversible and irreversible effects of mechanical dosing on stem cell fate," Signal Transduction in Engineered Extracellular Matrices Gordon Research Conference, Waltham, MA, July 2014.
306. "Microrheological characterization of cell-mediated degradation in the pericellular region during human mesenchymal stem cell migration," ACS Colloid & Surface Science Symposium, Philadelphia, PA, June 2014.
305. "Fabrication of multi-layer hydrogel microenvironments to control the spatial presentation of biochemical cues," Society for Biomaterials, Denver, CO, April 2014.
304. "In vitro model alveoli from photodegradable templates and primary lung epithelial cells," Society for Biomaterials, Denver, CO, April 2014.
303. "Synthesis and characterization of oxime-crosslinked photodegradable microspheres for on-demand delivery of biomolecules," Society for Biomaterials, Denver, CO, April 2014.
302. "Light wavelengths to regulate the release of multiple growth factors," Society for Biomaterials, Denver, CO, April 2014.
301. "Photodegradable hydrogels for selective capture and release of rare mammalian cells," Society for Biomaterials, Denver, CO, April 2014.
300. "Cellularly degradable PEG hydrogels with tethered TGF- β 1 for improved cartilage engineering," Society for Biomaterials, Denver, CO, April 2014.
299. "Sequential click reactions for polymerizing and functionalizing hydrogel biomaterials," Society for Biomaterials, Denver, CO, April 2014.
298. "Reversibly stiffening hydrogels to probe myofibroblast activation," Society for Biomaterials, Denver, CO, April 2014.
297. "Directing human mesenchymal stem cell migration through gradient presentation of chemokines," Society for Biomaterials, Denver, CO, April 2014.
296. "A dynamic platform for recapitulating healthy and diseased cardiovascular microenvironments," Society for Biomaterials, Denver, CO, April 2014.
295. "Valvular interstitial cell response to elasticity in three-dimensional microenvironments," Society for Biomaterials, Denver, CO, April 2014.
294. "Matrix elasticity regulates melanoma cell survival," Society for Biomaterials, Denver, CO, April 2014.
293. "Cytocompatible covalently adaptable networks to probe biophysical behavior of encapsulated cells," Society for Biomaterials, Denver, CO, April 2014.
292. "Functionalization of hydrogels with a matrix metalloproteinase-sensitive fluorogenic substrate to measure cellular response to drug treatment," Society for Biomaterials, Denver, CO, April 2014.
291. "Reversible and irreversible activation of YAP/TAZ in hMSCs on phototunable hydrogels," Society for Biomaterials, Denver, CO, April 2014.
290. "Hydrogels preserve phenotypes of valvular fibroblasts through an elasticity-regulated PI3K/AKT pathway," Society for Biomaterials, Denver, CO, April 2014.
289. "Engineering pseudo-islets of defined sizes from primary murine islets," Society for Biomaterials, Denver, CO, April 2014.
288. "Enzymatic and Cell-Mediated Degradation of Synthetic Hydrogel Scaffolds Measured Using Passive Microrheology," Gordon Research Conference on Colloidal, Macromolecular, and Polyelectrolyte Solutions, Ventura, CA, February 2014.
287. "Reversible and irreversible effects of mechanical dosing on stem cell fate," Cellular and Molecular Bioengineering, La Jolla, CA, January 2014.

286. "Enzymatic and cell-mediated degradation of synthetic hydrogel scaffolds measured using passive microrheology," American Institute of Chemical Engineers Annual Meeting, San Francisco, CA, November 2013.
285. "Microengineered, photodegradable hydrogels for the selective capture and release of mammalian cells," American Institute of Chemical Engineers Annual Meeting, San Francisco, CA, November 2013.
284. "Covalently adaptable networks as biophysical-ECM mimics for cell culture," American Institute of Chemical Engineers Annual Meeting, San Francisco, CA, November 2013.
283. "Controlled guidance of spinal motor axons through synthetic click hydrogels," Society for Biomaterials, Boston, MA, April 2013.
282. "Covalently tethered transforming growth factors beta-1 in PEG hydrogels expedites cartilage ECM production of encapsulated primary chondrocytes," Society for Biomaterials, Boston, MA, April 2013.
281. "Functional roles of microRNA 489 and 148b in hMSCs osteogenesis depend on microenvironment elasticity," Society for Biomaterials, Boston, MA, April 2013.
280. "Isotropic and directed hMSC migration within three-dimensional, peptide-functionalized PEG hydrogels," Society for Biomaterials, Boston, MA, April 2013.
279. "Clickable, photodegradable cell culture scaffolds to modulate valvular interstitial cell phenotype *in situ*," Society for Biomaterials, Boston, MA, April 2013.
278. "Elucidating the role of microenvironmental cues on melanoma drug resistance," Society for Biomaterials, Boston, MA, April 2013.
277. "Photodegradable microspheres as templates for model alveoli formation," Society for Biomaterials, Boston, MA, April 2013.
276. "Photodegradable microspheres for spatiotemporal control of protein delivery", Society for Biomaterials Annual Meeting, New Orleans, LA, October 2012.
275. "Characterization of enzymatic degradation of hydrogel using multiple particle tracking microrheology," The American Institute of Chemical Engineering 2012 Annual Meeting, Pittsburgh, PA, October 2012.
274. "Microrheological characterization techniques for biological applications and soft material design," The American Institute of Chemical Engineering, Pittsburgh, PA, October 2012.
273. "Synthetic Platform for 3D Culture of ES-Derived Motor Neurons," NIH Pharmaceutical Biotechnology Training Program, Breckenridge, CO, September 2012.
272. "Measuring hydrogel degradation near the transition using multiple particle tracking microrheology," The 16th International Conference of Rheology Meeting, Lisbon, Portugal, August 2012.
271. "Manipulating the microenvironment of valvular interstitial cells to control phenotype," Polymer Networks 2012, Jackson Hole, WY, August 2012.
270. "Formation of Model Alveoli In a Tunable Synthetic Scaffold," Polymer Networks 2012, Jackson Hole, WY, August 2012.
269. "Characterizing MMP Expression Using Modular Fluorescent Peptide Biosensors," Polymer Networks 2012, Jackson Hole, WY, August 2012.
268. "Acrylate vs Thiol-Ene PEG Hydrogels for beta-cell encapsulation," Polymer Networks 2012, Jackson Hole, WY, August 2012.
267. "Engineering photo-responsive hydrogels for user-controlled manipulation of cellular microenvironments," Polymer Networks 2012, Jackson Hole, WY, August 2012.
266. "Understanding the Role of the Microenvironment in Melanoma Responses to MEK Inhibition." Polymer Networks 2012, Jackson Hole, WY, August 2012.

265. "Lowering Substrate Stiffness *in situ* through Photodegradable Hydrogels Promotes Quiescence of Cardiac Valvular Fibroblasts," 9th World Biomaterials Congress, Chengdu, China, June 2012. Biomaterials Congress, June 2012, Chengdu, China
264. "Real Time Control of Cell Substrate Topographies Using Photolabile Hydrogels," 9th World Biomaterials Congress, Chengdu, China, June 2012.
263. "Peptide Functionalized Poly(ethylene glycol) Hydrogels as Culture Substrate for Valvular Interstitial Cells," 9th World Biomaterials Congress, Chengdu, China, June 2012.
262. "Dynamically Tunable Cell Substrate Microtopographies Induce Osteogenesis," Keystone Tissue Engineering & Regenerative Medicine Symposium, Breckenridge, CO, April 2012.
261. "Dynamically Tunable Hydrogel Materials for Modeling Axon Guidance," Keystone Tissue Engineering & Regenerative Medicine Symposium," Breckenridge, CO, April 2012.
260. "Deconstructing Biophysical and Biochemical Influences on Tumor Cell Migration Mechanisms," Materials Research Society, San Francisco, CA, April 2012.
259. "Engineering cell-instructive microenvironments with photo-activatable "caged" peptides," Materials Research Society, San Francisco, CA, April 2012.
258. "Flipping the Switch: Engineering Cell-instructive Microenvironments with Photo-activatable "Caged" Peptides," Materials Research Society, San Francisco, CA, April 2012.
257. "Probing tumor cell migration, growth, and invasion using a synthetic 3D extracellular matrix based on thiol-ene photopolymerization to control the microenvironment," Materials Research Society, San Francisco, CA, April 2012.
256. "Photoresponsive PEG-based hydrogels: Precise and predictable tuning of the mechanical and biochemical nature of the stem cell niche", American Chemical Society Annual Meeting, March 2012, San Diego, CA
255. "Thiol-ene click gels as in situ forming, cellularly-degradable biomaterials," TERMIS, Houston, TX, December 2011.
254. "User programmable hydrogel niches for stem cell culture," Days of Molecular Medicine, Hong Kong, November 2011.
253. "Tissue engineering implications of inflammatory cytokine induced MMP upregulation by hMSCs", 2012 Biomedical Engineering Society Annual Fall Meeting, Atlanta, GA, October 2011.
252. "Lighting the way: photochemical approaches to creating dynamic cell-instructive hydrogels", 2012 Biomedical Engineering Society Annual Fall Meeting, Atlanta, GA, October 2011.
251. "Dynamically tunable hydrogel niches for 3D cell culture: Multifunctional click-based networks with spatiotemporally regulated properties," 24th European Conference on Biomaterials, Dublin, Ireland, September 2011.
250. "Stem cell biology in four dimensions," Gordon Research Conference on Biomaterials and Tissue Engineering, Plymouth, NH, August 2011.
249. "Expansion and differentiation of hMSC," Gordon Conference on Bones and Teeth, Les Diableret, Switzerland, June 2011.
248. "Characterization of hydrogel degradation using multiple particle tracking microrheology," Keystone Symposium on Regenerative Engineering and Transplantation," Breckenridge, CO, March 2012.
247. "Multifunctional click-based networks with dually-tunable properties through orthogonal photocoupling and photodegradation reactions," Hangzhou International Polymer Forum," Hangzhou, China, May 2011.
246. "Flipping the Switch: Engineering Cell-instructive Microenvironments with Photo-activatable "Caged" Peptides," Materials Research Society, San Francisco, CA, April 2012.

245. "Probing tumor cell migration, growth, and invasion using a synthetic 3D extracellular matrix based on thiol-ene photopolymerization to control the microenvironment," Materials Research Society, San Francisco, CA, April 2012.
244. "Cell-cell communication mimicry with PEG hydrogels for enhancing beta-cell function," Society for Biomaterials, Orlando, FL, April 2011.
243. "Controlled reaggregation of pancreatic β -cells promotes viability and functional expression," Society for Biomaterials, Orlando, FL, April 2011.
242. "Extracellular matrix proteins mediate osteogenic differentiation of human mesenchymal stem cells on phosphate functionalized gels through integrin mediated focal adhesion kinase signaling," Society for Biomaterials, Orlando, FL, April 2011.
241. "Sequestration of endogenous TGF- β for directed differentiation of mesenchymal stem cells," Society for Biomaterials, Orlando, FL, April 2011.
240. "Photoreversible patterning of biomolecules within 3D click gels," Society for Biomaterials, Orlando, FL, April 2011.
239. "Photodegradable microparticles for spatiotemporal control of growth factor delivery," Society for Biomaterials, Orlando, FL, April 2011.
238. "In situ property control of step- and chain-growth PEG hydrogels via photolytic degradation," Australasian Polymer Symposium, Coffs Harbour, Australia, February 2011.
237. "Photoclick: Spatial and temporal control of the alkyne-azide reaction," Australasian Polymer Symposium, Coffs Harbour, Australia, February 2011.
236. "Cytocompatible click-based hydrogels with dually tunable properties through orthogonal photocoupling and photodegradation reactions," Australasian Polymer Symposium, Coffs Harbour, Australia, February 2011.
235. "Two-photon irradiation of photoresponsive hydrogels to control cell-material interactions," Australasian Polymer Symposium, Coffs Harbour, Australia, February 2011.
234. "Biomimetic strategy to enhance cell communication and survival in PEG hydrogels," TERMIS-NA, Orlando, FL, December 2010.
233. "In situ manipulation of microenvironment modulus to examine its influence on cell fate," American Institute of Chemical Engineers Annual Meeting, Salt Lake City, UT, November 2010.
232. "Control of synthetic ECM context to direct cell morphology and cell adhesion in 2D and 3D," American Institute of Chemical Engineers Annual Meeting, Salt Lake City, UT, November 2010.
231. "Photodegradable, photoadaptable hydrogels via radical-mediated disulfide scission and thiol-ene click reactions," American Institute of Chemical Engineers Annual Meeting, Salt Lake City, UT, November 2010.
230. "miRNA-based tissue engineering: using miRNA mimics and inhibitors to induce osteogenesis," 4th RNA Stability Meeting, Montreal, Canada, October 2010.
229. "Spatiotemporal control of cell-ECM interactions with photoactive PEG hydrogels," GRC on Signal Transduction By Engineered Extracellular Matrices, Biddenfor, ME, June 2010.
228. "Tethering TGF- β 1 to the surface of hydrogels to reduce local dendritic cell activation," GRC on Signal Transduction By Engineered Extracellular Matrices, Biddenfor, ME, June 2010.
227. "Prediction of collagen and glycosaminoglycan content by acoustic microscopy," Society for Biomaterials, Seattle, WA, April 2010.
226. "Growth and differentiation of human mesenchymal stem cells in polymer-peptide hydrogels that undergo cell-mediated degradation," Society for Biomaterials, Seattle, WA, April 2010.
225. "Controlled release of bioactive transforming growth factor beta 1 form affinity peptide hydrogels," Society for Biomaterials, Seattle, WA, April 2010.

224. "Surface-initiated photopolymerization to fabricate functionalized coatings which provide local t cell immunosuppression," Society for Biomaterials, Seattle, WA, April 2010.
223. "Controlled Reaggregation of Pancreatic β -Cells in PEG-based Microwells," Society for Biomaterials, Seattle, WA, April 2010.
223. "Phototunable Click-based Hydrogels for 3D Cell Encapsulation and Manipulation," Society for Biomaterials, Seattle, WA, April 2010.
222. "Regulating Local Inflammation in Poly(ethylene glycol) Hydrogels for Encapsulation of Vascular Endothelial Cells," Society for Biomaterials, Seattle, WA, April 2010.
221. "Extracellular Matrix Expression by Valvular Interstitial Cells on Peptide Functionalized PEG Hydrogels," Society for Heart Valve Disease, Hilton Head, SC, March 2010.
220. "Global effects of TGF-beta1 on porcine valvular interstitial cells," Society for Heart Valve Disease, Hilton Head, SC, March 2010.
219. "Phototunable hydrogels for external manipulation of cell microenvironments," 11th Pacific Polymer Conference, Cairns, Australia, December 2009.
218. "Photodegradable Hydrogels to Investigate the Effect of the Network Structure on Encapsulated Cell Function," Materials Research Society, Boston, MA, December 2009.
217. "Bioorthogonal Click Chemistries for Synthesizing and Patterning the 3D Cell Niche," Materials Research Society, Boston, MA, December 2009.
216. "A Synthetic Strategy for Mimicking the Extracellular Matrix Provides a New Tool for Studying Cancer Biology," Materials Research Society, Boston, MA, December 2009.
215. "In Situ Control of Hydrogel Modulus with Light to Direct Cell Phenotype," American Institute of Chemical Engineers Annual Meeting, Nashville, TN, November 2009.
214. "Controlling the Availability of Cytokine/Chemokine with Peptide-Functionalized Affinity Hydrogels to Regulate Local Inflammation," American Institute of Chemical Engineers Annual Meeting, Nashville, TN, November 2009.
213. "Valvular Interstitial Cell Myofibroblastic Differentiation is Directed by Substrate Elasticity," 6th Biennial Meeting of the Society for Heart Valve Disease, Berlin, Germany, June 2009.
212. "Ob-cadherin, A Novel Cell Surface Marker for Valvular Myofibroblasts," 6th Biennial Meeting of the Society for Heart Valve Disease, Berlin, Germany, June 2009.
211. "Pravastatin Inhibition of Valvular Interstitial Cell Calcific Nodule Formation is Mediated through Prevention of Myofibroblast Differentiation," 6th Biennial Meeting of the Society for Heart Valve Disease, Berlin, Germany, June 2009.
210. "An Instrumented Bioreactor for Cartilage Tissue Engineering," Society for Biomaterials, San Antonio, TX, April 2009.
209. "Antibody-functionalized Polymer Surfaces for Local T Cell Immunosuppression," Society for Biomaterials, San Antonio, TX, April 2009.
208. "Enzyme-Responsive, Thiol-ene Hydrogels for Local Therapeutic Delivery at Sites of Inflammation," Society for Biomaterials, San Antonio, TX, April 2009.
207. "Effect of acid and sulfate functional groups on chondrogenic differentiation of mesenchymal stem cells," Society for Biomaterials, San Antonio, TX, April 2009.
206. "Spatial Patterning of Structural Properties in a Photodegradable PEG-Based Hydrogel for Cell Culture," Society for Biomaterials, San Antonio, TX, April 2009.
205. "Controlling Affinity Binding in Poly(ethylene glycol) Hydrogels for Sustained Growth Factor Delivery," Society for Biomaterials, San Antonio, TX, April 2009.

204. “*In Vivo* Evaluation of Enzymatically Degradable Thiol-ene Hydrogels Formed *in situ* Designed to Promote and Accelerate the Natural Wound Healing Response,” Society for Biomaterials, San Antonio, TX, April 2009.
203. “Sequential Click Reactions for Synthesizing and Patterning 3D Cell Microenvironments,” Society for Biomaterials, San Antonio, TX, April 2009.
202. “Glucagon-like Peptide-1 Immobilized Bioactive PEG Hydrogels to Promote Cell Function,” Tissue Engineering Regenerative Medicine International Society Meeting, San Diego, CA, December 2008.
201. “Cell and Matrix Elasticity Effects on Cell Adhesion, Orientation, Self-Assembly and Differentiation,” 8th World Biomaterials Conference, Amsterdam, The Netherlands, May 2008.
200. “Controlled Photolytic Degradation of PEG-based Hydrogel Surfaces to Examine the Effect of Stiffness on Valvular Interstitial Cells,” 8th World Biomaterials Conference, Amsterdam, The Netherlands, May 2008.
199. “Participation of Cysteine in Radical Mediated Thiol-ene Photopolymerization for the Synthesis of Poly(ethylene glycol) Hydrogels,” 8th World Biomaterials Conference, Amsterdam, The Netherlands, May 2008.
198. “Engineering Microporous Gelatin-Based Hydrogels for Three-Dimensional Cell Culture,” 8th World Biomaterials Conference, Amsterdam, The Netherlands, May 2008.
197. “Designing a Synthetic Material with Extracellular Matrix Properties for the Delivery of Cells to Skin Wounds,” 8th World Biomaterials Conference, Amsterdam, The Netherlands, May 2008.
196. “Three Dimensional Biochemical Patterning of Click-based PEGtide Hydrogels via Thiol-ene Photopolymerization,” 3M, St. Paul, MN, April 2008.
195. “Photoresponsive PEG-based 3D Cell Culture Platforms,” American Chemical Society, New Orleans, LA, April 2008.
194. “Photoresponsive PEG-based Hydrogels as Niches to Tailor Biochemical Cue Presentation for Tissue Engineering Applications,” Materials Research Society, San Francisco, CA, March 2008.
193. “Controlled Enzyme Responsive Release from PEG Hydrogels for Local Therapeutic Delivery at Sites of Inflammation,” Materials Research Society, San Francisco, CA, March 2008.
192. “Limits of Mechanical Stimulation for a PEG-CAP Hydrogel Scaffold Used for Tissue Engineered Cartilage,” Biomedical Engineering Society, Los Angeles, CA, September 2007.
191. “Mechanical Properties of Degraded Bovine Knee Cartilage Characterized by High-Frequency Ultrasound,” Biomedical Engineering Society, Los Angeles, CA, September 2007.
190. “Human Mesenchymal Stem Cells for Dermal Wound Healing,” Biomedical Engineering Society, Los Angeles, CA, September 2007.
189. “Controlled photolytic degradation of PEG-based hydrogels to direct cell behavior,” Biomedical Engineering Society, Los Angeles, CA, September 2007.
188. “Mesenchymal Stem Cells in Degradable Photopolymerizable Hydrogels for Tissue Engineered Cartilage,” Biomedical Engineering Society, Los Angeles, CA, September 2007.
187. “Temporal Delivery of Adhesive Peptide Sequences to Maintain hMSC Survival and Initiate Chondrogenesis,” Biomedical Engineering Society, Los Angeles, CA, September 2007.
186. “In Vitro Modeling of Stenotic Disease Progression in Valvular Interstitial Cells,” Keystone Conference on Tissue Engineering & Developmental Biology, Snowbird, UT, March 2007.
185. “PEG-Peptide hydrogels designed to direct chondrogenic differentiation of hMSCs,” Keystone Conference on Tissue Engineering & Developmental Biology, Snowbird, UT, March 2007.
184. “Epinephrine mediated stress response impairs burn wound healing,” Keystone Conference on Tissue Engineering & Developmental Biology, Snowbird, UT, March 2007.

183. "Studying the Interactions Between Native Human Dermal Cells and Mesenchymal Stem Cells: Using Cell Biology as an Aid Towards Developing a Tissue Engineering Strategy for Improved Wound Healing," Keystone Conference on Tissue Engineering & Developmental Biology, Snowbird, UT, March 2007.
182. "Controlled Photolytic Degradation of PEG-based Hydrogels," Materials Research Society, San Francisco, CA, April 2007.
181. "Synthesis of poly(ethylene glycol)-co-peptide hydrogels by thiol-ene photoinitiated polymerization," Materials Research Society, San Francisco, CA, April 2007.
180. "Identifying chemical moieties to control hMSC differentiation using a high-throughput methodology and multifunctional hydrogels that promote osteogenic hMSC differentiation through stimulation and sequestering of BMP2," Society for Biomaterials, Chicago, IL, April 2007. (Outstanding PhD student award)
179. "Insulin Delivery from Genetically Modified Pancreatic Islets," American Institute of Chemical Engineers Annual Meeting, San Francisco, CA, November 2006.
178. "Influencing Chondrogenic Differentiation of hMSC Photoencapsulated in PEG-Peptide Thiol-Methacrylate Mixed Mode Networks," American Institute of Chemical Engineers Annual Meeting, San Francisco, CA, November 2006.
177. "Heparin-functionalized PEG hydrogels direct three-dimensional human mesenchymal stem cell osteogenic differentiation," American Institute of Chemical Engineers Annual Meeting, San Francisco, CA, November 2006.
176. "Integrin Linked Kinase Production Prevents Anoikis in Human Mesenchymal Stem Cells," 2006 American Institute of Chemical Engineers Annual Meeting, San Francisco, CA, November 2006.
175. "Islet-derived cell aggregates for encapsulation," American Institute of Chemical Engineers Annual Meeting, San Francisco, CA, November, 2006.
174. "A Multifunctional Pancreatic Islet Encapsulation Barrier Formed From Multi-layer Hydrogels," Biomedical Engineering Society Annual Meeting, Chicago, IL, October 2006.
173. "Controlled Release of Bioactive Hydrogel Components Enhances Encapsulated VIC ECM Production," Biomedical Engineering Society Annual Meeting, Chicago, IL, October 2006.
172. "Basic fibroblast growth factor: A critical signaling molecule in cardiac valve tissue engineering," Biomedical Engineering Society Annual Conference, Chicago, IL, October 2006.
171. "Vancomycin Derivative Photopolymerized to Titanium Kills *Staph. Epidermidis*," Society for Biological Engineering 2nd International Conference on Bioengineering and Nanotechnology, Santa Barbara, CA, September 2006.
170. "A Novel Antibacterial Polymer: Surface Modification of Ti-6Al-4V Orthopaedic Alloy," 16th Annual Open Scientific Meeting of the Musculoskeletal Infection Society, Lake Tahoe, CA, August 2006.
169. "A Novel Antibacterial Polymer: Surface Modification of Ti-6Al-4V Orthopaedic Alloy," 21st Annual National M.D./Ph.D. Student Conference, Keystone, CO, July 2006.
168. "Repression of Myofibroblast Differentiation in the Aortic Valvular Interstitial Cell by Basic Fibroblast Growth Factor," National MD/PhD Conference, Keystone, CO, July 2006
167. "Integrin Linked Kinase Production Prevents Anoikis in Human Mesenchymal Stem Cells," 2006 Signal Transduction by Engineered Extracellular Matrices Gordon Research Conference, New London, CT, July 2006.
166. "Genetic Modification of Encapsulated Pancreatic Islets for Insulin Delivery," Controlled Release Society Annual Meeting, Vienna, Austria, July 2006
165. "Biomaterials with Tunable Properties for Tissue Engineering," UCLA Bioengineering Symposium, Los Angeles, CA June 2006.

164. "Osteogenic Hydrogels for Controlled Differentiation of Human Mesenchymal Stem Cells," Australasian Society for Biomaterials 16th Annual Conference, Rotorua, New Zealand, February 2006.
163. "Modulating Myofibroblast Phenotype for Cardiac Valve Engineering," Australasian Society for Biomaterials 16th Annual Conference, Rotorua, New Zealand, February 2006.
162. "Synthesis and characterization of statin-releasing monomers for bone tissue engineering applications," Australasian Society for Biomaterials 16th Annual Conference, Rotorua, New Zealand, February 2006.
161. "Photopolymerized Hydrogels with Polycaprolactone Subunits for Cartilage Tissue Engineering: Enzymatic Degradation, Modeling, and Cell Encapsulation Studies," 28th Australasian Polymer Symposium & Australasian Society for Biomaterials 16th Annual Conference, Rotorua, New Zealand, February 2006.
160. "Influence of cell-matrix interactions on encapsulated islet function", Pancreatic Islets: Development to Transplantation, Keystone Symposia, Taos, NM, February 2006.
159. "Osteogenic Gels for Mesenchymal Stem Cell Delivery," International Association for Dental Research, Brisbane, Australia, June 2006.
158. "Post-gelation Functionalization of Degradable Thiol-Ene Biomaterials," Materials Research Society, Boston, MA, December 2005.
157. "Photopolymerized Multilaminate Hydrogels for Tailored Drug Delivery," Materials Research Society, Boston, MA, December 2005.
156. "Photodegradable Groups for Tunable Polymeric Materials" Pacificchem, Honolulu, HI, December 2005.
155. "Post-gelation Functionalization of Degradable Thiol-Ene Biomaterials," Materials Research Society, Boston, MA, December 2005.
154. "Heparin/PEG copolymerized hydrogels as an osteogenic niche for hMSCs," 3rd European Medical and Biological Engineering Conference, Prague, Czech Republic, November 2005.
153. "Manipulations in hydrogel degradation behavior enhance osteoblast function and mineralized tissue formation," American Institute of Chemical Engineers National Meeting, Cincinnati, OH, November 2005.
152. "Heparin functionalized hydrogels provide an osteogenic niche for hMSCs," Biomaterials/Tissue Engineering Gordon Research Conference, Plymouth, NH, August 2005.
151. "Photopolymeric Thiol-ene Biomaterials: Controlling Network Structure to Tune Degradation Behavior and Material Properties" Photopolymerization Fundamentals, Breckenridge, CO, June, 2005.
150. "Bioactive Hydrogel Barrier Membranes Provide Localized Immunosuppression for Encapsulated Pancreatic Islet Grafts", AAPS National Biotechnology Conference, San Francisco, CA, June 2005.
149. "Improving Encapsulated Beta-cell Viability Via Controlled Cell-material and Cell-cell Interactions," Society for Biomaterials, Memphis, TN, May 2005.
148. "Synthesis of Osteogenic Hydrogels for the Controlled Differentiation of hMSCs," Aegean Conferences: Tissue Engineering, Crete, Greece, May 2005.
147. "Colocalization of RGD and PHSRN epitopes on PEG surfaces influences osteoblast function," Material Research Society, San Francisco, CA, March 2005.
146. "Colocalization of RGD and PHSRN epitopes on PEG surfaces influences osteoblast function," Student Annual Research Symposium, Boulder, CO, February 2005.
145. "Fundamental Studies of Degradable Thiol-Acrylate Photopolymeric Biomaterials as Tissue Engineering and Drug Delivery Scaffolds," American Institute of Chemical Engineers National Meeting, Austin, TX, November 2004.
144. "Effect of Cell Environment on ECM Production and Gene Expression in Poly(ethylene glycol)/Chondroitin Sulfate Hydrogels," American Institute of Chemical Engineers National Meeting, Austin, TX, November 2004.

143. "A rapid antigen detection assay using photografted whole antibodies," American Institute of Chemical Engineers National Meeting, Austin, TX, November 2004.
142. "Application of Living Radical (Photo)polymerizations to Fabrication and Modification of Microfluidic Devices Formed from Crosslinked Networks," Polymer Networks IUPAC Meeting, Washington DC, August 2004.
141. "Thiol-ene and Thiol-acrylate Photopolymerizations: Unique Polymer Properties," Polymer Networks IUPAC Meeting, Washington DC, August 2004.
140. "Engineered Cartilage Development Using Pulsatile Bioreactors: Influence of Fluid Stress on Matrix Production," Polymer Networks IUPAC Meeting, Washington DC, August 2004.
139. "Thiol-acrylate Photopolymerizations: Controlled Network Evolution," Polymer Networks IUPAC Meeting, Washington DC, August 2004.
138. "Synthetic Hydrogel Niches for 3D Cell Culture and Tissue Regeneration: The Role of Gel Architecture and Degradation," MACRO 2004, Paris, France, July 2004.
137. "Synthesis of Antimers for Photografting on Polymeric Surfaces using Living Radical Photopolymerization Techniques," 7th World Biomaterials Congress, Sydney, Australia, May, 2004.
136. "Examining Distributions of Molecules in Degradable Biomaterials with Confocal Microscopy," 7th World Biomaterials Congress, Sydney, Australia, May, 2004.
135. "Direct Imaging of Neural Cells in PEG Hydrogels: Factors Influencing Cell Survival, Proliferation, and Differentiation," 7th World Biomaterials Congress, Sydney, Australia, May, 2004.
134. "Osteogenic Differentiation of Human Mesenchymal Stem Cells Photoencapsulated in PEG Hydrogels," 7th World Biomaterials Congress, Sydney, Australia, May, 2004.
133. "The Characterization of Photocured Degradable PEG and Bisphenol A Proposylate Copolymers," 20th Annual Scientific Meeting of the Colorado Section, American Association for Dental Research," Denver, CO, February, 2004.
132. "Controlled Degradable Biomaterial Networks: Investigation of pH Gradient Formation in Networks Formed from Multifunctional Monomers Via Confocal Microscopy," Material Research Society Fall Meeting, Boston, MA, December, 2003.
131. "Living Radical Photopolymerizations for Constructing Polymeric 3D Microfluidic Devices with Spatially Controlled Grafted Functionalities," American Institute of Chemical Engineers National Meeting, San Francisco, CA, November, 2003.
130. "Novel Technologies for Three-Dimensional Polymeric Microsensors," American Institute of Chemical Engineers National Meeting, San Francisco, CA, November, 2003.
129. "Laser Scanning Confocal Microscopy as a Tool for Characterizing Diffusion in Crosslinked Polymer Networks," American Institute of Chemical Engineers National Meeting, San Francisco, CA, November, 2003.
128. "Hyaluronic Acid Hydrogels as a VIC Scaffold: Applications in Heart Valve Tissue Engineering," American Institute of Chemical Engineers National Meeting, San Francisco, CA, November, 2003.
127. "Encapsulation of Islets in Poly(Ethylene Glycol) Hydrogels: The Effects of Cell Aggregation and Gel Crosslinking Density on Beta-cell Function," American Institute of Chemical Engineers National Meeting, San Francisco, CA, November, 2003.
126. "Osteoblast Function and Expression in 2D and 3D Peg Hydrogels," Biomedical Engineering Society 2003 Annual Fall Meeting, Nashville, TN, October, 2003.
125. "Degradable Poly(2-Hydroxyethyl Methacrylate) Biomaterials: The Influence of Crosslinking Density on Network Properties," 226th American Chemical Society Meeting, New York, NY, September, 2003.

124. "Multifunctional Hyaluronic Acid Macromers for Photoencapsulating Valvular Interstitial Cells: Designing Gels with Turnable Properties," World Congress on Medical Physics and Biomedical Engineering 2003 Congress, Sydney, Australia, August, 2003.
123. "Modeling and Experimental Analysis of Particle Transport in Microfluidic Channels," Gordon Research Conference on The Physics and Chemistry of Microfluidics, Big Sky, MT, August, 2003.
122. "Manipulations in Hydrogel Chemistry Control Photoencapsulated Chondrocyte Behavior and Extracellular Matrix Production," 26th Australasian Polymer Symposium, Noosa, Australia, July, 2003.
121. "Degradable Crosslinked Copolymer Biomaterials Synthesized from Multivinyl Monomers," 26th Australasian Polymer Symposium, Noosa, Australia, July, 2003.
120. "Crosslinked Network Synthesis by Radical Chain Photopolymerization: Natural and Directed Evolution of Macromolecular Structure," Gordon Research Conference, Polymers East, South Hadley, MA, June, 2003.
119. "Biofluidic Transport and Molecular Recognition in Polymeric Microdevices," DARPA Principal Investigators' Meeting, Santa Barbara, CA, February, 2003.
118. "Modeling and Experimental Analysis of Particle Transport in Microfluidic Devices," 2003 AAAS Annual Meeting, Denver, CO, February, 2003.
117. "*In Situ* Forming Cell Gel Constructs: Monitoring Gel Degradation to Control Extracellular Matrix Evolution," 225th American Chemical Society National Meeting, Division of Polymeric Materials: Science and Engineering, New Orleans, LA, March, 2003.
116. "Photocrosslinkable Anhydride Monomers with Tailored Degradation and Mechanical Properties for Orthopaedic Applications," StAR Symposium, Boulder, CO, February, 2003.
115. "Altering Gene Expression of Chondrocytes Photoencapsulated in Hydrogels by Local DNA Delivery," 2003 Annual Meeting of the Society for Biomaterials, Reno, NV (abstract submitted).
114. "Controlled DNA Release from Photocrosslinked Polyanhydrides," American Institute of Chemical Engineers Annual Meeting, Indianapolis, IN, November 2002.
113. "Controlling the Architecture of Degradable, Photocrosslinked Hydrogels for Cartilage Tissue Engineering," American Institute of Chemical Engineers Annual Meeting, Indianapolis, IN, November 2002.
112. "Experimental Investigation of Heterogeneity in Thick Networks Formed by the Photoinitiated Polymerization of Divinyl Monomers," American Institute of Chemical Engineers Annual Meeting, Indianapolis, IN, November 2002.
111. "Coupling Modeling and GPC to Understand Chain Length Effects in Multivinyl Photopolymerizations of Degradable Networks," American Institute of Chemical Engineers Annual Meeting, Indianapolis, IN, November 2002.
110. "Engineering Design Approaches to Optimize Tissue Formation and Distribution by Osteoblasts Photoencapsulated in PEG Hydrogels," American Institute of Chemical Engineers Annual Meeting, Indianapolis, IN, November, 2002
109. "Photocrosslinkable Anhydride Monomers with Tailored Degradation and Mechanical Properties for Orthopaedic Applications," Second Joint Meeting of the IEEE Engineering in Medicine and Biology Society and the Biomedical Engineering Society, Houston, TX, October, 2002
108. "Controlling Mineralized Tissue Formation and Distribution by Osteoblasts Photoencapsulated in PEG Hydrogels," Second Joint Meeting of the IEEE Engineering in Medicine and Biology Society and the Biomedical Engineering Society, Houston, TX, October, 2002
107. "Modeling Release from Degradable PEG Hydrogels and Their Application in the Delivery of Osteoconductive Growth Factors," Second Joint Meeting of the IEEE Engineering in Medicine and Biology Society and the Biomedical Engineering Society, Houston, TX, October 2002.

106. "Designing Scaffolds for Valvular Interstitial Cells," Second Joint Meeting of the IEEE Engineering in Medicine and Biology Society and the Biomedical Engineering Society, Houston, TX, October 2002.
105. "Crosslinking Density Influences Chondrocyte Morphology and Metabolism in Mechanically Loaded PEG Hydrogels," World Congress on Biomechanics, Calgary, Canada, August 2002.
104. "Synthesis and Application of Multifunctional Lactide and Caprolactone Based Oligomers for Orthopaedic Tissue Engineering," American Chemical Society Fall Meeting, Boston, MA, August 2002.
103. "Poly([2-L-histidyl]ethyl Methacrylate): A Potential DNA Transfection Agent," American Chemical Society Fall Meeting, Boston, MA, August 2002.
102. "Photopolymerization of Poly(Vinyl Alcohol) and Poly (Ethylene Glycol) Based Macromers to Produce Crosslinked, Degradable Hydrogels with Controlled Transport Properties," American Chemical Society Fall Meeting, Boston, MA, August 2002.
101. "Modifying Photo-Crosslinked Networks with Living Free Radical Initiators," American Chemical Society Fall Meeting, Boston, MA, August 2002.
100. "3D-Microfluidic Devices Using Liquid Polymer Precursors," American Chemical Society Fall Meeting, Boston, MA, August 2002.
99. "Coupling GPC and Modeling to Investigate Kinetic Chain Lengths in Multivinyl Photopolymerized Degradable Networks," American Chemical Society Fall Meeting, Boston, MA, August, 2002.
98. "Photoencapsulation of DNA in Crosslinked PEG Hydrogels," 29th Annual Meeting of the Controlled Release Society, Seoul, Korea, July 2002.
97. "Crosslinked Degradable Polymer Microparticles for Drug Delivery Applications," 29th Annual Meeting of the Controlled Release Society, Seoul, Korea, July 2002.
96. "Controlled Delivery of Osteoconductive Growth Factors from Injectable and Degradable PEG Hydrogels," Controlled Release Society Annual Meeting, Seoul, Korea, July, 2002.
95. "Photopolymerizable Poly(Vinyl Alcohol) Gels," Industry/University Cooperative Research Center on Fundamentals and Applications of Photopolymerization Conference, Breckenridge, CO, June 2002.
94. "Multifunctional Degradable Hydrogels: Poly (Vinyl Alcohol) Based Macromers," Photopolymerization Fundamentals Conference, Breckenridge, CO, June 2002.
93. "Photocurable Lactic Acid Based 3-D Scaffolds: Evaluation in a Critical-Sized Calvarial Defect in Rats," Society for Biomaterials Annual Meeting, Tampa, FL, April, 2002
92. "Developing Cell Scaffolds for Tissue Engineering Cartilage using Degradable Photocrosslinked PEG Hydrogels," Society for Biomaterials Annual Meeting, Tampa, FL, April 2002.
91. "*In Vivo* Photopolymerization of Degradable Polyanhydride Networks in a Tibia Defect," Orthopaedic Research Society Annual Meeting, Dallas, TX, February, 2002.
90. "Modeling and Experimental Characterization of Degradable Poly(Vinyl Alcohol) Tissue Scaffolds," Materials Research Society Fall Meeting, Boston, MA, November 2001.
89. "Development of *In Situ* Forming 3-D Lactic Acid Based Polymer Scaffolds for Bone Tissue Engineering," Materials Research Society Fall Meeting, Boston, MA, November 2001.
88. "An *In Vivo* Investigation of Chondrocyte ECM Production in Photocrosslinked, Degradable PEG Hydrogels," Annual Fall Meeting of the Biomedical Engineering Society, Durham, NC, October 2001.
87. "Synthesis and Application of Multifunctional Lactide and Caprolactone Based Oligomers for Orthopaedic Tissue Engineering," American Chemical Society National Meeting, Chicago, IL, August, 2001.
86. "Mechanisms to Protect DNA from Radical Damage During Photoencapsulation," Annual Fall Meeting of the Biomedical Engineering Society, Durham, NC, October 2001.

85. "Guided ECM Evolution and integration of Engineered Cartilage using Photocrosslinked PEG-Hydrogels," Annual Fall Meeting of the Biomedical Engineering Society, Durham, NC, October 2001.
84. "Photopolymerized Coatings and Surface Modifications," American Chemical Society Fall Meeting, Chicago, IL, August 2001.
83. "Characterization of Valve Cells and their Interactions with a Poly(vinyl alcohol) Scaffold," American Chemical Society Fall Meeting, Chicago, IL, August 2001.
82. "Synthesis and Characterization of Degradable Poly(vinyl alcohol) Hydrogels," American Chemical Society Fall Meeting, Chicago, IL, August 2001.
81. "Degradation Kinetics Influence ECM Production of Photoencapsulated Chondrocytes in PEG-based Hydrogels," American Chemical Society Fall Meeting, Chicago, IL, August 2001.
80. "Photopolymerized Coatings and Surface Modifications," American Chemical Society Fall Meeting, Chicago, IL, August 2001.
79. "Synthesis and Application of Multifunctional Lactide and Caprolactone Based Oligomers for Orthopaedic Tissue Engineering," American Chemical Society Fall Meeting, Chicago, IL, August 2001.
78. "A Methodological Investigation on the Preparation of Micropatterned Polymer Layers Based on Photoiniferter-Mediated Grafting Polymerization," American Chemical Society Fall Meeting, Chicago, IL, August 2001.
77. "Osteoconductivity and Biocompatibility of Lactide Based *In Situ* Forming Networks for Orthopaedic Applications," Society for Biomaterials Annual Meeting, Minneapolis, MN, April 2001.
76. "Tissue Engineering of the Aortic Heart Valve: A Cell Biology Approach," Society for Biomaterials Annual Meeting, Minneapolis, MN, April 2001.
75. "Tailoring the Architecture of Degradable Photocrosslinkable Poly(ethylene oxide) Hydrogels for Tissue Engineering Cartilage," Society for Biomaterials Annual Meeting, Minneapolis, MN, April 2001.
74. "Modeling the Degradation of Hydrogels Formed from Multi-Functional Macromers," Society for Biomaterials Annual Meeting, Minneapolis, MN, April 2001.
73. "A Novel Process for Forming Crosslinked Degradable Microparticles for use in Drug Delivery," Society for Biomaterials Annual Meeting, Minneapolis, MN, April 2001.
72. "Photopolymerizable PVA and Chondroitin Sulfate Hydrogels for Cartilage Tissue Engineering," Society for Biomaterials Annual Meeting, Minneapolis, MN, April 2001.
71. "Photopolymerization and Compressed Antisolvent Processing of Crosslinked Degradable Microparticles for Drug Delivery," American Institute of Chemical Engineers 2000 Fall Meeting, Los Angeles, November 2000.
70. "Characterization of Highly Crosslinked Network Structure: Results from Scanning Probe Microscopy and Off-Lattice Simulation," American Institute of Chemical Engineers 2000 Fall Meeting, Los Angeles, November 2000.
69. "Surface Modification of Poly(Vinyl Alcohol) Hydrogels Promotes Cell Adhesion," Biomedical Engineering Society Annual Meeting, Seattle, WA, October 2000.
68. "Multifunctional PLA Oligomers as an *In Situ* Forming Orthopaedic Biomaterial," Biomedical Engineering Society Annual Meeting, Seattle, WA, October 2000.
67. "Gel Properties Influence Extracellular Matrix Formation in Chondrocytes Photoencapsulated in Poly(ethylene oxide) and Poly(vinyl alcohol) Hydrogels," Biomedical Engineering Society Annual Meeting, Seattle, WA, October 2000.
66. "*In Situ* Forming Polymeric Biomaterials," American Chemical Society 2000 Fall Meeting, Washington, DC, August 2000.

65. "Preparation of Photopolymerizable Hydrogels for Cartilage Tissue Engineering," Colorado Biotechnology Symposium, Ft. Collins, CO, September 2000.
64. "Photocurable Polyanhydrides Engineered for Orthopaedic Applications"" American Chemical Society 2000 Fall Meeting, Washington DC, August 2000.
63. "Microgel Formation in Highly Crosslinked Polymers: Simulated and Experimental Results," American Chemical Society 2000 Fall Meeting, Washington DC, August 2000.
62. "Attachment of Proteins to Poly(vinyl alcohol) for Biomedical Applications," American Chemical Society 2000 Fall Meeting, Washington DC, August 2000.
61. "Predicting Degradation Behavior of PLA-b-PEG-b-PLA Hydrogels," American Chemical Society 2000 Fall Meeting, Washington DC, August 2000.
60. "UV-Induced Radical Grafting of Hydrophilic Monomers from Dithiocarbamated Polymer Surfaces," American Chemical Society 2000 Fall Meeting, Washington DC, August 2000.
59. "*In vitro* Formation of Neocartilage in Photocrosslinked Poly(ethylene oxide) Hydrogels," World Congress on Medical Physics and Biomedical Engineering, Chicago, IL, July 2000.
58. "*In Situ* Forming Poly(ethylene oxide) and Poly(vinyl alcohol) Hydrogels for Cartilage Tissue Engineering," World Polymer Congress, IUPAC Macro 2000, Warsaw, Poland, July 2000.
57. "Predicting Degradation Behavior of PEG-*b*-PLA hydrogels," World Polymer Congress, IUPAC Macro 2000, Warsaw, Poland, July 2000.
56. "Photografting on Crosslinked Polyanhydride Surfaces to Control Degradation and Enhance Biocompatibility for Orthopaedic Applications," Sixth World Biomaterials Congress, Kamuela, HI, May 2000.
55. "Predicting the Release Behavior of High Molecular Weight Solutes From Degradable Poly(Ethylene Glycol)-Based Networks," North American Membrane Society, Boulder, CO, May 2000.
54. "*In Situ* Forming Polymeric Biomaterials," American Chemical Society Meeting, San Francisco, CO, March 2000.
53. "Space-based Simulation of Structural Evolution in Crosslinked Polymers," American Physical Society, Minneapolis, MN, March 2000.
52. "Photografting on Crosslinked Polyanhydride Surfaces to control Degradation and Enhance Biocompatibility for Orthopaedic Applications," Society for Biomaterials World Congress, Kamuela, Hawaii, May 2000.
51. "Photocurable Collagen for Tissue Engineering Applications," American Institute of Chemical Engineers 1999 Fall Annual Meeting, Dallas, TX, November 1999 (1st Place Award).
50. "Impact of Polymerization Kinetics on Degradation Behavior of Hydrogels," American Institute of Chemical Engineers 1999 Fall Meeting, Dallas, TX, November 1999.
49. "Controlling Degradation Behavior in Photocrosslinked Polyanhydride Biomaterials," American Institute of Chemical Engineers 1999 Fall Meeting, Dallas, TX, November 1999.
48. "Compressed Antisolvent Processing and Photopolymerization of Crosslinked Polymer Microparticles," Supercritical Fluids in Materials Processing and Synthesis, Davos, Switzerland, September 1999.
47. "Photocrosslinkable Poly(ethylene oxide) and Poly(vinyl alcohol) Hydrogels for Tissue Engineering Cartilage," Annual Fall Meeting of the Biomedical Engineering Society, Atlanta, GA, October 1999.
46. "Optimization of Synthetic Hydrogel Biomaterials through Control of Microstructure," Annual Fall Meeting of the Biomedical Engineering Society, Atlanta, GA, October 1999.
45. "Modes for Controlling the Degradation and *In Vivo* Biocompatibility of a Novel Class of *In Situ* Forming Polymers," 12th Annual Colorado Biotechnology Symposium, Boulder, CO, September 1999.

44. "Controlled Release Applications of Photopolymerized Microparticles Using Compressed Antisolvents," 12th Annual Colorado Biotechnology Symposium, Boulder, CO, September 1999.
43. "Fundamental Studies of Biodegradable Hydrogels as Cartilage Replacement Materials," 36th Annual Rocky Mountain Bioengineering Symposium, Copper Mountain Resort, CO, April 1999.
42. "Fundamental Studies of Biodegradable Hydrogels as Cartilage Replacement Materials," Materials Research Society 1999 Spring Meeting, San Francisco, CA, April 1999.
41. "*In Situ* Transdermal Photopolymerization of Hydrogels," Society for Biomaterials, Providence, RI, April 1999.
40. "Nonuniform Initial Concentration Profiles in Photolaminated Devices for Controlled Release," 26th International Symposium on Controlled Release of Bioactive Molecules, Boston, MA, June 1999.
39. "Photocrosslinked Polyanhydrides as an *In Vivo* Polymerizable Biomaterial," Materials Research Society 1999 Spring Meeting, San Francisco, CA, April 1999. (Outstanding Graduate Student gold medalist award)
38. Photopolymerizable Poly(Vinyl Alcohol) Gels," Materials Research Society 1999 Spring Meeting, San Francisco, CA, April 1999.
37. "Photopolymerization of Poly(Vinyl Alcohol) Hydrogels to Tissue Engineer Cartilage," American Institute of Chemical Engineers 1998 Fall Annual Meeting, Miami Beach, FL, November 1998.
36. "Photopolymerization of Polymer Microparticles Using Compressed Antisolvents for Use in Controlled Release Applications," 26th International Symposium on Controlled Release of Bioactive Molecules, Boston, MA, June 1999.
35. "The Effects of Crosslinking Density on Cartilage Formation in Photocrosslinkable Hydrogels," 36th Annual Rocky Mountain Bioengineering Symposium, Copper Mountain Resort, CO, April 1999. (2nd place award)
34. "Tissue Engineering of Cartilage in Poly(Vinyl Alcohol) Hydrogels," American Institute of Chemical Engineers 1998 Fall Annual Meeting, Miami Beach, FL, November 1998.
33. "Photopolymerizable, Crosslinkable Polyanhydrides for Orthopedic Applications," American Institute of Chemical Engineers 1998 Fall Annual Meeting, Miami Beach, FL, November 1998 (3rd Place Award).
32. "Polyanhydrides: A New Class of Surface Eroding and High Strength Biopolymers," Colorado Biotechnology Symposium, Fort Collins, CO, September 1998.
31. "Optimization of Concentration Profiles in Polymer Matrices for Controlled Release," American Chemical Society 1998 Fall Meeting, Boston, MA, August 1998.
30. "Characterization of Multifunctional Monomers that Produce Highly Crosslinked, Degradable Networks," American Chemical Society 1998 Fall Meeting, Boston, MA, August 1998.
29. "Transdermal Photopolymerizations for Biomedical Applications," IUPAC Polymer Networks 98, Trondheim, Norway, June 1998.
28. "Novel Device for Three-Dimensional Scaffold Preparation," Society for Biomaterials, San Diego, CA, April 1998.
27. "Photopolymerized Multilayered Poly(HEMA) Hydrogels for Zero-Order Drug Release," American Institute of Chemical Engineers 1997 Fall Annual Meeting, Los Angeles, CA, November 1997.
26. "Photocrosslinkable Polyanhydride Networks for Use in Orthopedic Applications," American Institute of Chemical Engineers 1997 Fall Annual Meeting, Los Angeles, CA, November 1997.
25. "Photopolymerized, Biodegradable, and Crosslinked Polyanhydrides for Orthopedic Applications," American Institute of Chemical Engineers 1997 Fall Annual Meeting, Los Angeles, CA, November 1997.
24. "Monte Carlo Simulations of Chain Crosslinking Polymerizations," University of Colorado, Department of Physics, May 1997.

23. "Computer Simulations of Liquid-Crystalline Diacrylate Monomer Polymerizations," American
22. "Surface Eroding Polymer Networks For Biomedical Applications," IUPAC Polymer Networks 96, Doorn, The Netherlands, September 1996.
21. "Kinetics and Mechanisms of Multifunctional Monomer Photopolymerizations," American Chemical Society 1996 Fall Meeting, Orlando, FL, August 1996.
20. "Photopolymerization of Novel Degradable Networks for Orthopedic Applications," American Chemical Society 1996 Spring Meeting, New Orleans, LA, April 1996.
19. "Kinetics of UV Polymerization of Acrylic Acid," American Chemical Society 1996 Spring Meeting, New Orleans, LA, April 1996.
18. "Mucoadhesive PVA Hydrogels for Release of Wound Healing Drugs," 5th World Biomaterials Congress, Toronto, Canada, May 1996.
17. "Termination Kinetics During Crosslinking Photopolymerizations of Multifunctional Monomers," American Institute of Chemical Engineers 1995 Fall Annual Meeting, Miami Beach, FL, November 1995.
16. "Structural Evolution of Crosslinked Polymer Films," American Institute of Chemical Engineers 1995 Fall Annual Meeting, Miami Beach, FL, November 1995.
15. "Termination Mechanisms in Polymerizations of Multifunctional Monomers," Intersociety Polymer Conference, Baltimore, MD, October 1995.
14. "Photopolymerizations of Dimethacrylate Coatings: Kinetics and Volume Relaxation Effects," American Chemical Society 1995 Spring Meeting, Anaheim, CA, April 1995.
13. "Optimization of Comonomer Composition for Maximization of Monomer Conversion and Material Properties in Dental Restorative Materials," American Chemical Society 1995 Spring Meeting, Anaheim, CA, April 1995.
12. "Structural Evolution of Highly Crosslinked Polymer Networks," Materials Research Society 1994 Fall Meeting, Boston, MA, November 1994.
11. "Effects of Heterogeneity on the Polymerization of Multifunctional Monomers," American Institute of Chemical Engineers 1994 Fall Annual Meeting, San Francisco, CA, November 1994.
10. "Kinetics and Reaction Diffusion in Photopolymerizations of Multiethylene Glycol Dimethacrylates," American Institute of Chemical Engineers 1994 Fall Annual Meeting, San Francisco, CA, November 1994.
9. "Application of UV-Vis Spectroscopy to Determine Free Volume Distributions During Polymerization Reactions," American Chemical Society 1994 Fall Meeting, Washington, D.C., August 1994.
8. "Reaction Mechanisms and Network Structure in Multifunctional Monomer Polymerizations," IUPAC Polymer Networks 94, Prague, Czech Republic, July 1994.
7. "Monitoring the Microstructure of Crosslinked Networks with Photochromic Probes," American Physical Society 1994 Spring Meeting, Pittsburgh, PA, April, 1994.
6. "Reaction Behavior and Kinetics of Multifunctional (Meth)acrylate Photopolymerizations," American Chemical Society 1994 Spring Meeting, San Diego, CA, March 1994.
5. "Diffusion Effects on the Composition and Structure of Crosslinked Copolymers," American Institute of Chemical Engineers 1993 Fall Annual Meeting, St. Louis, MO. 1st place in the Materials Poster Session, Polymer Group, November 1993.
4. "Kinetics of Multifunctional Monomer Polymerizations," American Institute of Chemical Engineers 1993 Fall Annual Meeting, St. Louis, MO. 3rd place in the Student Poster Paper Session, Engineering Science and Fundamentals, November 1993.

3. "Free Volume Distributions during Photopolymerizations of Multifunctional Monomers," American Institute of Chemical Engineers 1993 Fall Annual Meeting, St. Louis, MO. 3rd place in the Student Poster Paper Session, Materials Engineering and Science, November 1993.
2. "Kinetic Gelation Model Predictions of Gel Point Conversions, Cyclization Rates, and Heterogeneity during Polymerizations of Tetrafunctional Monomers," American Chemical Society 1993 Spring Meeting, Chicago, IL, August 1993.
1. "Kinetic and Structural Aspects of Network Formation from Photopolymerized Multifunctional Acrylates and Methacrylates," American Institute of Chemical Engineers 1992 Fall Annual Meeting, Miami Beach, FL, November 1992.

GRANTS RECEIVED

Current external research funding:

NIH R01, NIDCR, "Clickable Microgel Scaffolds for MSC Expansion and Delivery," 12/05-3/24, \$400,000 annual direct costs (\$300,000 KSA portion).

NIH R01, NHLBI, "Hydrogels to Study Synergistic Effects of Signaling Factors and Matrix Mechanics on Valve Disease Progression," 12/16-11/22, \$250,000 annual direct costs. (renewal pending)

NIH R01, NHLBI, "Propagation and Resolution of Injury in Calcific Aortic Valve Stenosis", 7/18-6/24, \$100,000 annual direct costs (KSA portion, no cost extension)

DARPA, "Photoswitchable Biostasis," 11/18-10/24, \$7,000,000 total funding (KSA portion, ~\$550,000/year)

NIH R01, NIDDK, 7/23-6/28, "Photoresponsive materials to study matricellular signaling dynamics during crypt formation and fission," \$450,000 annual direct costs (\$300,000 KSA portion)

NSF RECODE, "Materials-directed differentiation of intestinal organoids of uniform size and shape," 1/21-12/24, \$1,500,000 total costs (\$750,000 KSA portion).

Beckman Foundation, "Advanced Light-Sheet Microscopy and Data Science Award," \$1,200,000, 1/21-8/26.

Pending external education funding:

National Science Foundation, REU Program (co-PI with T. Whitehead and R.H. Davis, PI).

Past external educational funding:

Department of Education, "Graduate Assistance in Areas of National Needs Programs (co-PI on Biological Engineering GAANN)," (co-PI with R.H. Davis; C.N. Bowman, PI), 9/04-8/08.

Department of Education, "Graduate Assistance in Areas of National Needs Programs (co-PI on Micro and Nano-structured Materials GAANN)," (co-PI with R.H. Davis; C.N. Bowman, PI), 9/06-8/09

NSF, DGE, "IGERT: Interdisciplinary Quantitative Biology Program," 7/1/12-6/30/15, \$ 1,186,848 total budget.

Department of Education, "Graduate Assistance in Areas of National Needs Programs (co-PI on Professional Preparation of Chemical Engineers for Rebuilding the Nation's Infrastructure)," (co-PI with J.W. Medlin C.N. Bowman, and R.H Davis, PI), 10/18-9/22, \$1,215,978 total budget.

Past major external research funding:

Genentech, "Regenerative Cell Therapies for Pulmonary Fibrosis," \$344,298, 12/2021-11/2023.

NIH R01, NIDDK, "Synthetic hydrogels to study formation and maintenance of intestinal crypts," 8/19-5/24, \$400,000 annual direct costs (\$300,000 KSA portion).

CU-Boulder and CU-AMC AB Nexus program, "The role of fibroblast-macrophage crosstalk in promoting disease-like myofibroblast phenotypes," 6/2021-5/2023 (\$62,500, KSA portion).

NSF, DMR, "Dynamic and Reversible Control over Biological Signals in Hydrogel Matrices," 8/1/14-7/31/18, \$420,000 total funding.

NIH R21, NIBIB, "Protease Activity in 3D Matrices," 10/15-9/18, \$275,000 total direct costs.

NIH R21, NIAMS, "Mechanical dosing effects on MSCs," 4/15-3/18, \$275,000 total direct costs.

NSF, CBET 1236662, "Rheological Characterization of Cellularly Remodeled Hydrogel Matrices," 11/12-10/17, \$240,000 total funding

Howard Hughes Medical Institute, Investigator, 8/00-8/17, \$600,000 annual funding (plus 100% KSA salary)

DOD, Peer Reviewed Orthopaedic Research Program (PRORP), “Improving Joint Function Using Photochemical Hydrogels for Articular Surface Repair,” (co-PI with M. Gill, PI), 10/10 - 09/14, \$70,000 annual direct costs (KSA portion).

NIH R01, NIDDK, “Bioactive Gels that Promote Long-Term Islet Survival and Function,” (K.A. Haskins, co-PI), 1/08-12/13, \$250,000 annual direct costs (1 year no-cost extension).

NSF, DMR 1006711, “Spatiotemporal Regulated Click Hydrogels for 3D Cell Culture,” 9/10-8/13, \$140,000 annual funding.

NIH R21, NIAMS, “Engineering Tissue with miRNAs,” 7/10-6/12, \$112,500 annual direct costs.

NIH R01, NHLBI, “Bioactive Hydrogel Niches for 3D VIC Culture,” (L. A. Leinwand, co-PI), 3/08-2/13, \$225,000 annual direct costs.

NIH R01, NCI, “Quantitative Analysis of Tumor Cell Migration in Three Dimensional Matrices,” (co-PI with M. Zaman, PI), 9/1/08-8/31/12, \$60,000 annual direct cost (KSA portion).

NIH R01, NIAMS, “Online Monitoring and Control for Functional Cartilage Tissue Engineering with Hydrogels,” (T. Quinn, co-PI, at NIST), 12/05-7/11, \$220,000 annual direct costs.

NIH R01, NIDCR, “3D Scaffolds for Controlled hMSC Differentiation,” (J.S. Stansbury, co-PI), 5/05-4/10, \$250,000 annual direct costs.

NIH R01, “Photopolymerized Gels for Cartilage Tissue Engineering,” (C.N. Bowman, co-PI), 8/99-7/08, \$250,000 annual direct costs.

NSF, Waterman Award, “Biomaterials in Regenerative Medicine,” 8/04-7/07, \$166,666 annual direct costs.

American Heart Association Grant-in-Aid, “Tissue Engineering Heart Valves with VICs,” 7/03-6/06, \$60,000 annual direct costs.

NIH, P30, “Photopolymerization Methods to Encapsulate Islets,” (co-PI with K. Haskins, PI), 8/02-9/04, \$125,000 annual funding.

Dreyfus Foundation, “Camille Dreyfus Teacher-Scholar Award,” 7/00-6/05, \$60,000 total funding.

DARPA/AFSOR, “Biofluidic Transport and Molecular Recognition in Polymeric Microdevices,” (Co-PI with C.N. Bowman; R.S. Davis, PI), 1/02-2/05, \$395,000 annual funding.

NIH, R29 FIRST Award, “Novel Degradable Polymers for Orthopedic Application,” 5/98-4/04, \$120,000 annual direct costs.

NSF, CAREER Award, “Photocrosslinkable Polymers for Fracture Fixation,” 4/98-3/02, \$75,000 annual funding

Packard Foundation, “Packard Fellowship for Research in Science and Engineering,” 11/97-10/02, \$125,000 annual funding.

PROFESSIONAL SOCIETIES

American Academy of Arts and Sciences (AAAS)

American Association for the Advancement of Science (AAAS)

American Institute of Chemical Engineers (AIChE)

American Institute of Medical and Biological Engineering (AIMBE)

American Chemical Society (ACS)

American Society for Matrix Biology (ASMB)

Biomedical Engineering Society (BMES)

Materials Research Society (MRS)

National Academy of Engineering (NAE)

National Academy of Inventors (NAI)

National Academy of Medicine (NAM)

National Academy of Sciences (NAS)

Society for Biomaterials (SFB)

Society for Biological Engineering (SBE)

CHAIR OF MEETINGS AND SYMPOSIA, PROFESSIONAL SOCIETY SERVICE AND LEADERSHIP

1. Organized and Co-Chairperson of Session, "Young Faculty Forum," AIChE Annual Meeting, Chicago, IL, November 1996
2. Co-Chairperson of Session, "Polymer Reaction Engineering," AIChE Annual Meeting, Los Angeles, CA, November 1997
3. Organized and Chairperson of Session, "Young Faculty Forum," AIChE Annual Meeting, Los Angeles, CA, November 1997
4. Organized and Co-Chairperson of Session, "Teaching Graduate Students to Teach," ASEE Chemical Engineering Summer School, Snowbird, UT, July 1997
5. Chairperson of Session, "Polymer Reaction Engineering" AIChE Annual Meeting, Miami Beach, FL, November 1998
6. Organized and Co-Chairperson of Session, "ACS Polymer Chemistry Award Symposium for Robert Langer," ACS Meeting, Anaheim, CA, March 1999
7. Chairperson of Session, "Polymer/Light Relationships," ACS Meeting, Anaheim, CA, March 1999
8. Chairperson of Session, "Polymer Synthesis," ACS Meeting, San Francisco, CA, March 2000
9. Chairperson of Session, "Biomolecular/Membrane Interactions and Drug Delivery," NAMS Meeting, Boulder, CO, May 2000
10. Chairperson of Session, "Orthopaedic Biomaterials," BMES Meeting, Seattle, WA, October, 2000
11. Organized and Co-Chairperson of Session, "Polymeric Biomaterials in Tissue Engineering," ACS Fall Meeting, Chicago, IL, August 2001
12. Organized and Co-Chairperson of Session, "Polymer Thin Films and Interfaces," AIChE Annual Meeting, Reno, NV, November 2001
13. Organizer and Co-Chairperson for Symposium, "Polymeric Biomaterials for Tissue Engineering," 5-sessions sponsored by the Whitaker Foundation and ARO, MRS Fall Meeting, Boston, MA, November 2001
14. Organizer and Co-Chairperson for Symposium, "Biomimetics," Society for Biomaterials 28th Annual Meeting, Tampa, FL, April 2002
15. Organizer and Co-Chairperson of Session, "Bioengineering," ASEE Chemical Engineering Summer School, Boulder, CO, July 2002
16. Co-Chairperson of Session, "Heart Valve Tissue Engineering," EMBS-BMES Meeting, Houston, TX, October 2002
17. Member of the Chemical Engineering Technology Operating Council, American Institute of Chemical Engineers, Nov. 2002 — Nov. 2005
18. Chairperson of Session, "Functionalized Surfaces and Nanocomposites," Gordon Research Conference—Polymers East, South Hadley, MA, June, 2003.
19. Board of Directors, Materials Research Society, October 2003 — December 2006.
20. Societal Alliance Committee and Awards Committee, Society for Biomaterials, May 2004 — May 2006.
21. Chair of the Board of Director's Planning Committee, Materials Research Society, January 2005- January 2007
22. Chairperson of Session, "Designer materials," National Academy of Engineering, Frontiers of Engineering, Irvine, CA, September 2004.
23. Organizer and Co-Chairperson for Topical Symposium, "Advances in Biomaterials, Bionanotechnology, Biomimetic Systems and Tissue Engineering," AIChE Annual Meeting, Austin, TX, November 2004.
24. Organizer and co-Chairperson for Symposium, "Biomaterials and Nanotechnology," Society for Biomaterials Annual Meeting, Nashville, TN, April 2005.
25. Co-Chairperson of Session, "Biomaterials in Nanotechnology," AIChE Annual Meeting, Cincinnati, OH, November 2005.
26. Liaison Committee, Society for Biomaterials, October 2006 — December 2007.
27. North American Council Member, Tissue Engineering and Regenerative Medicine International Society, November 2005 — December 2012.
28. Fall 2009 Meeting Chair, Materials Research Society, Boston, MA, November 2009.
29. Chairperson of Session, "Polymer Delivery System for Tissue Regeneration," 13th Pacific Polymer Conference, Cairns, Australia, December 2009.
30. Awards Committee Member (2010-2011), Vice-Chair (2011-2013), Chair (2014-2016), American Institute of Chemical Engineers, January 2010 — December 2016

31. Programming Committee, Annual Meeting, Society for Biomaterials, August 2013 — May 2014
32. President-elect, President, Past-President, Materials Research Society, January 2015 — December 2017.
33. Board of Directors, American Institute of Chemical Engineers, January 2018 — December 2020.

MEMBER OF FEDERAL REVIEW PANELS, INVITED PRESENTATIONS TO PANELS, AND LEADERSHIP

1. National Science Foundation
Proposal review panel, “Biomedical Engineering and Research to Aid the Disabled,” Division of Bioengineering and Environmental Systems, June 1997
2. National Science Foundation
Proposal review panel, “Biomedical Engineering and Research to Aid the Disabled,” Division of Bioengineering and Environmental Systems, February 1998
3. National Science Foundation
Invited speaker and participant, United States-Korea Biomedical Engineering Workshop and Symposium, Seoul, Korea, May 1998
4. National Academy of Engineering
Invited participant, “Fourth Annual Symposium on Frontiers in Engineering,” September 1998
5. JASON
Invited speaker and participant, “Photopolymerizations in Bioengineering,” Fall Annual Meeting, November 1998
6. National Institutes of Health
Proposal review panel, “Biomimetics and Tissue Engineering in the Restoration of Craniofacial Tissues,” June 1999
7. National Institutes of Health
Proposal review panel, “Orthopaedics SBIR/STTR,” July 1999
8. National Institutes of Health
Proposal review panel, “Bioengineering Research Partnerships,” November 1999
9. National Institutes of Health
Proposal review panel, “Orthopaedics SBIR/STTR,” December 1999
10. National Science Foundation
Invited speaker and participant, United State-Germany Polymer Symposium, Chicago, IL, August 2000
11. TMJ Association
Invited speaker and participant, 1st Meeting of the TMJ Association, Washington DC, May 2000
12. Food and Drug Administration, Center for Devices and Radiological Health
Member of the Dental Products Panel of the Medical Devices Advisory Committee, October 2000 to present
13. National Institutes of Health
Proposal review panel, NIAMS Special Emphasis Panel, November 2000
14. NASA
Proposal review panel, “Cellular Biotechnology and Tissue Engineering,” February 2001
15. National Institutes of Health
Proposal review panel, “Orthopaedics SBIR/STTR,” March 2001
16. National Institutes of Health,
Proposal review panel, “Vaccines,” July 2001
17. Ohio BRTT Review
Proposal review panel, “Tobacco-related Research Program,” April 2002
18. National Institutes of Health
Proposal review panel, “Nephrology/Urology,” November 2002
19. National Institutes of Health
Proposal review panel, “NIAMS Special Emphasis Panel,” April, 2003
20. National Institutes of Health
Proposal review panel, “NIDCR Tissue Engineering Panel,” April, 2003
21. National Institutes of Health

- Proposal review panel, “NIAMS Special Emphasis Panel,” May, 2003
22. National Institutes of Health
Proposal review panel, “Neurogenesis and Cell Fate Study Section,” May 2004.
 23. National Institutes of Health, NIBIB, January 2004 — June 2008.
Member of the Musculoskeletal Tissue Engineering Study Section
 24. National Science Foundation
Proposal review panel, “Interfacial, Transport, and Thermodynamic,” April 2005.
 25. National Institutes of Health
Proposal review panel, “Nanomedicine Development Centers,” August 2005.
 26. National Research Council
National Science Foundation MRSEC Program Review Committee Member, August 2005 to January 2007.
 27. National Institutes of Health, Molecular, Cellular and Developmental Neuroscience
Proposal review panel, “Neurogenesis and Cell Fate Study Section,” October 2005.
 28. National Institutes of Health, NHLBI
Nanobiotechnology Impact on Hematology and Cellular Therapeutics Meeting, September 2006.
 29. National Institutes of Health, NIBIB
Chair of proposal review panel, “Bioengineering Research Grants,” March 2007.
 30. National Institutes of Health, Molecular, Cellular and Developmental Neuroscience
Proposal review panel, “Neurogenesis and Cell Fate Study Section,” June 2007.
 31. National Institutes of Health, NIAMS
Proposal review panel, “Arthritis and Musculoskeletal and Skin Diseases Special Grants Review” June 2007.
 32. National Institutes of Health, NIBIB
Proposal review panel, “Enabling Technologies for Tissue Engineering and Regenerative Medicine,”
November 2008.
 33. Air Forces Institute for Regenerative Medicine (AFIRM)
External advisory committee, January 2009 — December 2012.
 34. National Institutes of Health, NIBIB
Chair of Study Section, Musculoskeletal Tissue Engineering, October 2009 — October 2011.
 35. National Science Foundation, Division of Materials Research
Proposal review panel, “Biomaterials CAREER Panel,” October 2010
 36. National Science Foundation
Alan T. Waterman Award Committee, June 2010 — May 2013
 37. National Institutes of Health, NIDCR, May 2010 — April 2011
Director Search
 38. National Institute of Health, NIBIB/NIAMS
Program Review Committee, “Tissue Engineering Cartilage Repair”, May 2011
 39. National Research Council
Committee member, “Roundtable on the Public Interface of the Life Sciences,” April 2013 — April 2014.
 40. National Research Council
Committee member, “Enabling Architecture for the Next Generation of Life Sciences Research,” June 2013
— December 2015.
 41. National Institutes of Health
Advisory Council of NIBIB, August 2013 — January 2018.
 42. National Research Council
Biomedical Engineering Materials and Applications Roundtable Committee, January 2014 — present
 43. Academic Affairs Budget Advisory Committee
Provost’s Office, University of Colorado, July 2020 — June 2023.
 44. National Institute of Health, NIGMS
Study Section Member, Intercellular Interactions, January 2022 — December 2022.

**MAJOR EXTERNAL SERVICE AND LEADERSHIP FOR THE NATIONAL ACADEMIES,
ACADEMIC INSTITUTIONS, AND FOUNDATIONS**

1. Academic Advisory Board Member, School of Chemical Engineering
Purdue University, January 2008 — December 2014
2. Advisory Board Member, Department of Chemical Engineering
Tufts University, January 2007 — December 2009
3. Fritz J. and Dolores H. Russ Prize selection committee
National Academy of Engineering, January 2010 — December 2013
4. Board of Governors
Acta, Inc. journal series, May 2011 — present.
5. Search Committee for the Chief Scientific Editor for *Science Translational Medicine*
AAAS, January 2011 — December 2011
6. *Ad hoc* committee for Engineering Education Program and the Center for the Advancement of Scholarship on
Engineering Education, National Academy of Engineering, May 2011-December 2011.
7. Planning Committee for Education of the Health Care & Science Workforce
Institute of Medicine/National Academy of Medicine, February 2012-December 2012.
8. External Advisory Board for the Department of Biomedical Engineering
University of Texas at Austin, Fall 2010 – Spring 2014
9. External Advisory Board for the Department of Chemical Engineering, Presidential appointment
MIT, January 2013 — present
10. Search Committee Member, Section 2 Bioengineering
National Academy of Engineering, April 2013 — December 2015.
11. Hoover Medal Board, Member and Vice Chair
Representative for AIChE, April 2013 — 2021. Vice Chair, April 2021 — present.
12. Elected Member at Large, Executive Committee
National Academy of Engineering, Section 2, May 2013 — April 2016
13. Straw Ballot Assessment Group, Engineering Sciences Section
National Academy of Sciences, July 2014 — June 2018.
14. Blavatnik Awards National Jury Member
The New York Academy of Sciences, January 2014 — December 2016.
15. Peer Committee Member, Vice Chair, Chair for Section 2, Bioengineering
National Academy of Engineering, January 2016 — January 2019
16. Fellows in Science and Engineering Selection Committee
Packard Foundation, January 2015 — present
17. External Advisory Council, College of Engineering
Purdue University, January 2015 — December 2021
18. Dean's Search Committee, External Member
Purdue University, College of Engineering, November 2016 — May 2017.
19. Elected Member (November 2017—November 2021) and Chair (November 2021 — present)
Board of Trustees, Gordon Research Conferences
20. Advisory Committee Member
Allen Institute for Cell Science, July 2018 — July 2023
21. Temporary Nominating Committee, Section 2 Bioengineering
National Academy of Engineering, August 2018 – August 2020
22. President's Advisory Committee on Emerging Science, Technology, and Innovation
National Academy of Medicine, September 2018 — August 2021
23. Advisory Board Member, Phil and Penny Knight Campus
University of Oregon, September 2018 — present
24. Vice Chair, Chair and Past Chair, Section 2, Bioengineering
National Academy of Engineering, July 2019 — July 2025
25. Selection Committee Member for Award in Chemical Sciences
National Academy of Sciences, June 2020 — May 2023
26. Chair and founding member, the Langer Prize for Innovation and Entrepreneurial Excellence, American
Institute of Chemical Engineers, September 2019 – present.
27. Director's Pioneer Award Selection Committee

- National Institutes of Health, October 2020 — December 2022.
28. Study Section Member, ICI
National Institutes of Health, November 2021—October 2022.
29. Jury Member, Merkin Prize in Biomedical Technology, the Broad Institute, August 2021— present.
30. Jury Member, International Laureate Awards, L’Oreal-UNESCO for Women in Science, July 2023 — present.

REVIEWER OF JOURNALS

ACS Nano
Acta Biomaterialia
Advanced Biomaterials
Advanced Functional Materials
Advanced Healthcare Materials
Advanced Materials
Angewandte Chemie
AIChE Journal
ATVB
Biomacromolecules
Biomaterials
Biomaterial Science
Biotechnology & Bioengineering
Circulation Research
FASEB Journal
Integrative Biology
Journal of the American Chemical Society
Journal of Applied Polymer Science
Journal of Biomaterials Science-Polymer Edition
Journal of Biomedical Materials Research
Journal of Controlled Release
Journal of Heart Valve Disease
Journal of Pharmaceutical Sciences
Journal of Polymer Science-Polymer Chemistry
Journal of Polymer Science-Polymer Physics
Journal of Tissue Engineering and Regenerative Medicine
Langmuir
Liquid Crystals
Macromolecular Chemistry and Physics
Macromolecules
Nature
Nature Biomedical Engineering
Nature Biotechnology
Nature Chemistry
Nature Communications
Nature Materials
Nature Methods
Nature Protocols
Nanomedicine
PNAS
Polymer
Science
Science Translational Medicine
Small
Soft Materials

COURSES TAUGHT

- Spring 2023: CHEN 5160, *Systems Analysis of Cells and Tissues*, 22 graduate students.
- Spring 2022: CHEN 5838, *Tissue Engineering Lab Modules*, 20 graduate students.
- Spring 2021: CHEN 5838, *Systems Analysis of Cells and Tissues*, 25 graduate students
- Spring 2018: CHEN 4805, *Biomaterials*, 78 undergraduate students (Instructor Rating: 5.5/6.0, Department Rating: 4.9/6.0)
- Spring 2012: CHEN 4805, *Biomaterials*, 105 undergraduate students (Instructor Rating: 5.5/6.0, Department Rating: 4.9/6.0)
- Spring 2011: CHEN 5838, *Polymer Physics*, 20 graduate students (Instructor Rating: 5.3/6.0, Department Rating: 5.0/6.0)
- Fall 2009: GEEN 1400, *Engineering Projects*, 30 undergraduate students, interdisciplinary laboratory and lecture course (Instructor Rating: 5.4/6.0, Department Rating: 4.8/6.0).
- Spring 2009: CHEN 5838, *Tissue Engineering*. 12 graduate students and 6 undergraduate students (Instructor Rating: 5.9/6.0, Department Average: 5.0/6.0).
- Spring 2008: CHEN 4450/5550, *Polymer Chemistry*. 14 graduate students and 6 undergraduate students (Instructor Rating: 5.7/6.0, Department Average: 4.6/6.0).
- Fall 2004: CHEN 1211, *General Chemistry for Engineers*. ~400 undergraduate students (Instructor Rating: 2.66/4.00, Department Average: 2.91/3.00).
- Spring 2004: CHEN 5838, *Tissue Engineering*. 10 graduate students and 8 undergraduate students (Instructor Rating: 3.80/4.00, Department Average: 2.95/4.00).
- Fall 2001: CHEN 5838, *Polymeric Biomaterials in Tissue Engineering*. 20 graduate students (Instructor Rating: 3.58/4.00, Department Average: 3.10/4.00).
- Fall 2000: CHEN 4460/5460, *Polymer Engineering*. ~55 undergraduate students and ~15 graduate students (Instructor Rating: 3.59/4.00, Department Average: 3.16/4.00).
- Spring 2000: CHEN 3200, *Chemical Engineering Fluid Mechanics*, ~50 undergraduate students (Instructor Rating: 3.73/4.00, Department Average: 3.24/4.00)
- Spring 1999: CHEN 3200, *Chemical Engineering Principles I: Fluid Mechanics*, ~55 undergraduate students. (Instructor Rating: 3.84/4.00, Department Average: 3.31/4.00)
- Fall 1998: CHEN 4838/5838, *Polymer Engineering*. ~10 undergraduate students and ~15 graduate students. (Instructor Rating: 3.81/4.00, Department Average: 3.35/4.00)
- Fall 1997: CHEN 4450/5450, *Polymer Chemistry*. ~5 undergraduate students and ~15 graduate students. (Instructor Rating: 3.80/4.00, Department Average: 3.05/4.00)
- Spring 1997: CHEN 3200, *Chemical Engineering Principles I: Fluid Mechanics*. ~50 undergraduate students. (Instructor Rating: 3.76/4.00, Department Average Instructor Rating: 3.22/4.00)
- Fall 1996: CHEN 4440, *Chemical Engineering Materials*. ~65 undergraduate students. (Instructor Rating: 3.39/4.00, Department Average Instructor Rating: 3.06/4.00)
- Spring 1995: CHEN 3200, *Chemical Engineering Principles I: Fluid Mechanics*. ~40 undergraduate students. (Instructor Rating: 3.85/4.00, Department Average Instructor Rating: 3.27/4.00)

PAST AND PRESENT GRADUATE ADVISEES

Doctoral Students Supervised:

1. Jennifer S. Young (co-advised with C.N. Bowman), January 1996 — October 1998, Graduated with PhD Thesis, “Fundamentals of Crosslinking Photopolymerizations and Applications to Biomedical systems” (Staff scientist at Los Alamos National Laboratory).
2. Sanxiu Lu, January 1996 — January 1999, Graduated with PhD Thesis, “Controlled Drug Delivery From Photopolymerized Multilaminated Matrix Devices” (Instructor, Ming Zhou Hua Xia Chinese School, Eden Prairie, MN)

3. Amy K. (Burkoth) Poshusta, January 1997 — July 2000, Graduated with PhD Thesis, “Synthesis and Characterization of *In Situ* Forming Polyanhydride Networks for Orthopaedic Applications,” (Manager, Slipstream Consulting, Broomfield, CO).
4. Andrew T. Metters (co-advised with C.N. Bowman), January 1998 — August 2000, Graduated with PhD Thesis, “Investigation of Degradable Crosslinked Hydrogels: Prediction of Degradation Behavior” (Director of Translational Engineering, Vertex Cell and Gene Therapy at Vertex Pharmaceuticals, Westford, MA).
5. Stephanie J. Bryant, January 1998 — August 2002, Graduated with PhD Thesis, “Photocrosslinkable Hydrogels as Cell-Scaffolds for Tissue Engineering Cartilage: A Study Examining Gel Properties, Degradation, Mechanical Loading and Clinical Relevance” (Professor, University of Colorado, Chemical and Biological Engineering Department).
6. Penny J. Martens, January 1998 — December 2002, Graduated with PhD Thesis, “Hydrogel Synthesis from Multifunctional Poly(Vinyl Alcohol) Macromers: Experimental and Theoretical Approaches to Understanding Degrading Networks” (Deputy Dean of Graduate Research and Professor, University of New South Wales, Australia, Bioengineering Department).
7. Jennifer L. Owens (co-advised with T.W. Randolph), January 1998 — August 2002, Graduated with PhD Thesis, “Compressed Antisolvent Precipitation and Photopolymerization for the Formation of Crosslinked Polymer Microparticles Useful For Controlled Drug Delivery” (Law Associate with Birch, Horton, Bittner and Cherot, Anchorage, AK).
8. J. Brian Hutchison, January 1999 — May 2003, Graduated with PhD Thesis, “Crosslinked Network Synthesis by Radical Chain Photopolymerization: Natural and Directed Evolution of Macromolecular Structure” (COO, Honeycomb Biotechnologies, Boston, MA).
9. Jason A. Burdick, January 1999 — August 2002, Graduated with PhD Thesis, “Synthesis and Characterization of Osteoinductive Photocurable Scaffolds: A Tissue Engineering Approach to Enhance Bone Regeneration” (Bowman Professor, University of Colorado, BioFrontiers Institute).
10. Deborah J. Quick, January 2000 — December 2003, Graduated with PhD Thesis, “A Photopolymer Platform for Controlled Gene Delivery.” (Senior Consultant, RMC Pharmaceutical Sciences, Louisville, CO)
11. Charles R. Nuttelman, January 2000 — May 2005, Graduated with PhD Thesis, “Osteogenic poly(ethylene glycol)-based hydrogels for 3D human mesenchymal stem cell culture and bone regeneration,” (Senior Instructor, University of Colorado, Chemical and Biological Engineering Department).
12. Michelle Staben (co-advised with R.H. Davis), January 2000 — May 2005, Graduated with PhD Thesis, “Modeling and Experimental Characterization of Particle Transport in Polymer Microfluidic Devices.” (Director, CMC Strategy and Operations, Precisions Biosciences, Cary, NC)
13. Robert (Bobby) P. Sebra, (co-advised with C.N. Bowman), January 2002 — December 2005, Graduated with PhD Thesis, “Design and Application of Chemically and Biologically Active Surface Graft Architectures using Living Radical Photopolymerization Chemistry.” (Professor, Innovation at the Center for Advanced Genome Technology, Mount Sinai School of Medicine, New York City, NY)
14. Andrew (Drew) W. Watkins, January 2001 — January 2006, Graduated with PhD Thesis, “Controlling and Characterizing Molecular Distributions in Hydrogels for Biomaterials Applications.” (Formulations Manager, Indivior, Fort Collins, CO)
15. Amber (Hofstad) Rydholm (co-advised with C.N. Bowman), January 2001 — May 2006, Graduated with PhD Thesis, “Photopolymeric Thiol-ene Biomaterials: Controlling Network Structure to Tune Degradation Behavior and Material Properties.” (Director of Drug Substance Manufacturing, Cambrex, Lyons, CO)
16. Mark A. Rice, January 2002 to May 2006, Graduated with PhD Thesis, “PEG-Based Hydrogels as Chondrocyte Carriers for Tissue Engineered Cartilage: Controlling Extracellular Matrix Evolution and Integration with Native Cartilage.” (Senior Manager, Processing Development and Packaging, Indivior, Fort Collins, CO).

17. Darshita (Dipa) Shah, January 2002 to December 2006, graduated with PhD Thesis, “Tailored Environments for the 3D Culture and Manipulation of Valvular Interstitial Cells.” (Associate Director for Teaching and Learning; Joint Program on the Science and Policy of Global Change, MIT).
18. Laney (Philpott) Weber, January 2003 — December 2006, graduated with PhD Thesis, “Biologically Active PEG Hydrogel Microenvironments for Improving Encapsulated β -cell Survival and Function.” (Certified Editor in the Life Sciences, LLC, Houston, TX)
19. Danielle S.W. Benoit, January 2003 — December 2006, graduated with PhD Thesis, “Poly(ethylene glycol) Hydrogel Microenvironments with Bidirectional Signaling Mechanisms to Regulate Cell Function for Bone Tissue Engineering Applications.” (Lorry Lokey Department Chair and Professor, Knight Campus Department of Bioengineering, University of Oregon)
20. Melinda C. (Cushing) Riter, September 2003 – December 2006, MD/PhD student, graduated with PhD thesis, “Understanding and manipulating extracellular signals critical to the myofibroblast activation of valvular interstitial cells.” (Dermatologist, Sagle, ID)
21. Chelsea (Collins) Salinas, January 2004 – May 2008, graduated with PhD thesis, “Photoinitiated Thiol-Acrylate Polymerizations to Tailor PEG Microenvironments with Peptide Moieties to Direct Chondrogenic Differentiation of hMSCs.” (Assistant Department Head & Associate Teaching Professor, Colorado School of Mines)
22. McKinley Lawson (co-advised with C.N. Bowman), August 2004 — May 2008, MD/PhD student, graduated with PhD thesis, “Structure-function relationships of polymerizable vancomycin derivatives for the antimicrobial surface modification of orthopedic biomaterials” (Diagnostic radiology resident, University of Colorado Anschutz Medical Campus)
23. Helen Simms (co-advised with C. N. Bowman), January 2003 – August 2008, graduated with PhD thesis, “Functionalized microfluidic devices for directing and monitoring cell-material interactions.” (Project Manager, Hospira)
24. Benjamin D. Fairbanks (co-advised with C.N. Bowman), January 2005 — December 2009, graduate with PhD thesis, “Photochemical reactions for functional biomaterials development: Thiol-ene and Thiol-yne photopolymerizations.” (Research Faculty, University of Colorado)
25. April M. Kloxin, January 2005 – January 2009, graduated with PhD thesis, “Photolabile hydrogels for dynamic tuning of physical and chemical properties to probe cell-cell and cell-material interactions.” (Thomas & Kipp Gutshall Development Professor, University of Delaware, Chemical & Biomolecular Engineering)
26. Julie A. Benton, January 2006 — June 2009, graduated with PhD thesis, “Soluble and microenvironmental factors that modulate myofibroblast and calcific differentiation of valvular interstitial cells” (Director of Research & Technology, Medtronic, Santa Rosa, CA)
27. Alex A. Aimetti, January 2006 — August 2010, graduated with PhD thesis, “Synthetic peptide design for functionalized biomaterials: Development of cellular responsive drug delivery platforms and cyclic, multivalent peptide derivatives using radical-mediated thiol-ene/thiol-yne chemistries.” (Head of Scientific Affairs, Marinus Pharmaceuticals)
28. Patrick Hume, August 2007 — April 2011, graduated with PhD thesis, MD/PhD student, “Improvement of the immunoisolation capacity of PEG hydrogels through bioactive modifications” (Assistant Professor, Internal Medicine, CU Anschutz Medical Campus)
29. Cole A. DeForest, January 2007 — June 2011, doctoral student, “Phototunable Click-based Hydrogels for 3D Cell Culture: Dynamic Biochemical and Biomechanical Tailorability of the Cell Niche” (Weyerhaeuser Endowed Associate Professor, University of Washington, Department of Chemical Engineering).
30. Joshua D. McCall, January 2008 — June 2012, graduated with PhD thesis, “Poly(ethylene glycol) based biomaterial platforms for guiding cell behavior through controlled presentation and release of bioactive, therapeutic proteins” (Technical Services Manager, Clinical Gene Therapy Manufacturing, Pfizer, Durham, NC).

31. Mark W. Tibbitt, January 2008 — August 2012, graduated with PhD thesis, “Fundamental characterization of photodegradable hydrogels: Spatiotemporal control of the cellular microenvironment” (Assistant Professor, ETH Zurich)
32. Huan (Sharon) Wang, July 2007 — December 2012, graduated with PhD thesis, “Signaling from matrix elasticity and TGF- β 1 to cells of the cardiac valve” (Assistant Professor, Institute of Systems Medicine, Peking University Medical School)
33. Abigail Banaszek Bernard, January 2008 — December 2012, graduated with PhD thesis, “Controlled formation of β -cell aggregates and their characterization” (Senior materials research engineer, Michelin, Greenville, SC)
34. Navakanth Gandavarapu, January 2008 — January 2013, graduated with PhD thesis, “Engineering poly(ethylene glycol) hydrogel microenvironments for osteogenic differentiation of human mesenchymal stem cells” (Engineering Leader, ServiceNow, Santa Clara, CA)
35. Sarah (Trexler) Gould, January 2009 — August 2013, graduated with PhD thesis, “Integrin Binding Peptide-Functionalized Poly(Ethylene Glycol) Hydrogels for Understanding the Role of Matricellular Effects and Valvular Endothelial Cell Paracrine Signaling on VIC Phenotype and Tissue Deposition” (Head of MSAT & Manufacturing at Umoja Biopharma, Boulder, CO)
36. Daniel McKinnon, January 2011 — May 2014, doctoral student, “Process Extension from Embryonic Stem Cell-Derived Motor Neurons through Synthetic Extracellular Matrix Mimics” (Product Manager, Google, Boulder, CO).
37. Samir Singh, January 2010 — May 2014, doctoral student, “Investigating tumor progression and migration using a synthetic culture platform to quantitatively control biochemical and biophysical matrix properties of the 3D microenvironment” (Sr. Engineer, Materials and Processes at Ball Aerospace).
38. Balaji Sridhar, July 2011 — December 2014, MD/PhD student, graduated with PhD thesis, “Use of biofunctional hydrogel matrices for chondrocyte transplantation applications” (Founder, Nanoly. Resident Physician, University of Washington)
39. Emi Tokuda, January 2010 — December 2014, graduated with PhD thesis, “Regulation of melanoma cell survival and function by matricellular signaling and microenvironmental factors” (Senior Scientist, CMC Technology & Feasibility at Tune Therapeutics, Seattle, WA).
40. Chunyan Yang, May 2010 — February 2015, graduated with PhD thesis, “Dynamic control of synthetic hydrogels to understand hMSCs differentiation and mechanotransduction” (Senior Data Scientist at Freenome, San Francisco, CA).
41. Kyle Kyburz, January 2010 — March 2015, graduated with PhD thesis, “Bio-functionalized PEG hydrogels to study and direct mesenchymal stem cell migration and differentiation” (Wealth Advisor at Colorado West Investments, Montrose, CO).
42. Kelly Pollock Mabry, January 2011 — August 2015, doctoral student, “The role of matrix properties in directing valvular interstitial cell phenotype” (CEO, Cellia Science, San Francisco, CA)
43. Kathryn (Katie) Lewis, January 2011 — October 2015, graduated with PhD thesis, “Modeling alveolar epithelial cell behavior in spatially designed hydrogel microenvironments” (On family leave)
44. Tobin Brown, January 2014 — July 2018, graduated with PhD thesis, “Dynamic Hydrogels to Investigate Cell-Matrix Interactions” (Senior Scientist, Mosaic Biosciences, Boulder, CO)
45. Ian Marozas, January 2014 — January 2018, graduated with PhD thesis, “Covalent adaptable hydrogels to probe cellular mechanotransduction” (Promega, San Luis Obispo, CA)
46. Andrea Gonzalez, August 2014 — April 2020, graduated with PhD thesis, “Hydrogels as valve ECM-mimics to study the role of TNF- α and TGF- β 1 on VIC phenotypic changes and matrix remodeling” (IHC Manager, Inotiv, Boulder, CO).

47. Alex Caldwell, January 2015 — March 2020, graduated with PhD thesis, “Assembly of cell-laden microgel scaffolds for control over mesenchymal stem cell growth and secretory properties” (Manager, Medical Writer, Boulder, CO).
48. Hao Ma, January 2015 — May 2020, graduated with PhD thesis, “Engineering hydrogels to investigate the role of mechano-transduction during valvular interstitial cell myofibroblast activation in the presence of growth factors” (Associate Scientist, Genentech, San Francisco, CA)
49. Megan Schroeder, January 2015 — May 2020, graduated with PhD thesis, “3D PEG-based hydrogels as valve-ECM mimics to reveal the role of osteogenic cues on fibrotic and calcific VIC phenotype” (Platform Scientist, Enveda Biosciences)
50. Tova (Christensen) Ceccato, May 2015 — May 2020, graduated with PhD thesis, “Physical and Biochemical Cues Initiate Pathological Signaling in Cardiac Fibroblasts” (research scientist, Loxo Oncology).
51. Della Shin, January 2015 — December 2021, graduated with PhD thesis, “Multifunctional cancer models to study the role of tumor microenvironment on melanoma progression” (Staff Scientist, FDA)
52. Jason Silver, July 2015 — April 2021, MD/PhD student, graduated with PhD thesis, “The role of stiffness and mechanotransduction during muscle regeneration” (PM&R residency, University of Washington)
53. Anouk Killaars, January 2016 — April 2020, graduated with PhD thesis, “Phototunable hydrogel materials to study epigenetic remodeling in mesenchymal stem cells” (Assay Scientist, Conception).
54. Ben Richardson, January 2016 — October 2020, graduated with PhD thesis, “Viscoelastic Hydrazone Covalent Adaptable Networks to Study Chondrocyte Mechanobiology for Cartilage Tissue Engineering” (Senior Scientist, UPSIDE Foods, San Francisco, CA).
55. Cierra Walker, June 2016 – May 2021, graduated with PhD thesis, “Phototunable hydrogels to study mechanisms of persistent myofibroblast activation” (Bioinformatics Scientist, Conception).
56. Varsha Rao, January 2017 — December 2021, graduated with PhD thesis, “Poly(ethylene glycol) Hydrogels to Engineer the Mesenchymal Stromal Cell Secretome” (Cell Integration Lead, Wildtype)
57. Ben Carberry, January 2017 — December 2021, graduated with PhD thesis, “Design of tunable, stimuli-responsive biomaterials through dynamic thioester exchange chemistry,” (Research Scientist, Indivior, Fort Collins, CO)
58. Max Yavitt, January 2018 — June 2023, graduated with PhD thesis, “Photoadaptable hydrogels to probe intestinal organoid crypt morphogenesis” (Postdoctoral Associate, U of Otago, Auckland, New Zealand).
59. Dilara Batan, May 2018 — May 2023, graduated with PhD thesis, “Investigating Effects of Microenvironment Stiffness on Valvular Interstitial Cell Myofibroblast Activation” (Research Scientist, Genentech, San Francisco)
60. Ella Hushka, January 2019 — present, doctoral student, “Deterministic crypt formations in intestinal organoids”
61. Mark Young, January 2019 — present, doctoral student, “Hydrogel expansion of patient specific organoids for drug screening”
62. Alexandra (Ali) Borelli, May 2019 — March 2024, doctoral student, “PEG-HA Injectable Hydrogels to Study the Role of Stress Relaxation on MSC Mechanosensing and Secretion”
63. Bruce Kirkpatrick, July 2020 — present, MD/PhD student, “Dynamic hydrogel matrices to study collective cell dynamics”
64. Nathaniel (Nat) Skillin, August 2020 — present, MD/PhD student, “Structured illumination of photoresponsive polymeric medical devices”
65. Tze-Ling (Amie) Chang, January 2021 — present, “Materials and methods for expansion microscopy to study muscle stem cell biology”
66. Benjamin (Ben) Nelson, January 2022 — present, “Dynamic biomaterial networks applied to biostasis”
67. Mathew Jaeschke, January 2022 — present, “Injectable and porous hydrogels for MSC delivery”

Masters Students Supervised:

1. Dina C. Svaldi-Muggli, January 1996 — May 1997, Graduated with MS Thesis, “Development of Photocrosslinkable Biodegradable Polyanhydrides for Use in Orthopedic Applications” (Part-time instructor at the University of North Dakota).
2. Kelly Macdonald, January 2003 — August 2004, graduated with MS Thesis. “Development of Gene Therapy Techniques for Use in Bone Tissue Engineering Applications.” (Process Engineer, Amgen, Boulder, CO)
3. Changjun (Celia) Xue, January 2007 — May 2008, graduated with MS thesis, “Screening material influences on mesenchymal stem cell differentiation using a microwarray methodology” (Research Scientist, Bristol-Myers Squibb)
4. Emily Matherly, January 2012 — August 2013, MS degree, “Deciphering myofibroblast properties of VICs”
5. Jiaju Shen, June 2012 — May 2013, MS degree, “Matricellular effects on cardiac myocytes and NFAT expression” (Software Engineer, FactSet)
6. M. Quinn Fleming, January 2012 — February 2014, MS degree, “Photodegradable microspheres for spatiotemporal delivery of growth factors” (Research Associate, Entera Health, Ankeny)
7. Eduard Castano, August 2015 — September 2016, MS degree, “Quantitative image analysis of the myofibroblast phenotype” (International Department, Coatresa S.L., Spain)
8. Kelly Trowbridge Shekiro, January 2010 — June 2013, MS degree, “Engineering pseudo-islets to probe functional properties and β -cell signaling” (Financial Analyst, NREL, Golden, CO)
9. Daniel Bell, December 2019 — December 2021, MS degree “Porous bio-click assembled hydrogels to direct and control MSC secretory properties”
10. Bradley Taha, January 2022 — May 2023, MS degree “Granular hydrogels for intestinal organoid culture”

Postdoctoral Associates Supervised:

1. Ning Luo, PhD, February 1999 — May 2001 (Director of Research & Development, BioBased Technologies).
2. Kelly Davis Arehardt, PhD, February 2001 — January 2004 (Global Innovations Manager and Senior Research Scientist, Kimberly-Clark).
3. Kristyn Masters, PhD, November 2001 — November 2003 (Professor, Univ. of Wisconsin).
4. Melissa Mahoney, PhD, December 2002 — December 2004. (Senior Instructor, Univ. of Colorado)
5. Brian Hutchison, PhD, August 2003 — August 2004 (COO, Honeycomb Biotechnologies, Boston, MA)
6. Elizabeth Hedberg Dirk, PhD, July 2004 — July 2006. (Associate Professor, Univ. of New Mexico)
7. Andrea Kasko, PhD, September 2004 — August 2006. (Professor, Univ. of California at Los Angeles)
8. Sirish Reddy, PhD, June 2005 — October 2006. (Research Scientist, Novellus, Portland, OR)
9. Jay Blanchette, PhD, June 2004 — July 2007. (Senior Instructor, Univ. of South Carolina)
10. Charles Cheung, PhD, January 2004 — April 2008. (Senior Scientist, AbbVie, Chicago, IL)
11. Jennifer Recknor, PhD, September 2006 — May 2008. (New Product Development Strategist, W.L. Gore)
12. Peter Mariner, PhD, June 2006 — July 2011. (Chief Scientific Officer, Snoasis Medical)
13. Michael Schwartz, PhD, September 2006 — June 2010. (Managing Director, NSF Center for Sustainable Nanotechnology, Univ. of Wisconsin)
14. Brian Polizzotti, PhD, October 2007 — December 2008 (Instructor, Faculty, Cardiology, Harvard University).

15. Chien-Chi Lin, PhD, September 2007 — July 2010. (Thomas J. Linnemeier Guidant Foundation Endowed Chair & Professor, Indiana University - Purdue University Indianapolis)
16. Sarah Anderson, PhD, March 2008 — May 2011. (Director of Product Management for Life Sciences, SomaLogic)
17. April Kloxin, PhD, February 2009 — May 2011. (Thomas & Kipp Gutshall Development Professor, University of Delaware, Chemical & Biomolecular Engineering)
18. Daniel Alge, August 2010 — July 2014. (Associate Professor, Texas A&M University)
19. Malar Azagarsamy, October 2010 — September 2015. (Scientist, Apple, Cupertino, CA)
20. Chelsea Magin Kirschner, January 2011 — August 2013 (Assistant Professor, Division of Pulmonary Sciences and Critical Care Medicine and Bioengineering, Anschutz Medical Campus, Aurora, CO)
21. Kelly Schultz, May 2011 — July 2013. (Professor, Purdue University)
22. Alexei Kazantsev, January 2011 — May 2012. (Principal Scientist, Mosaic Biosciences)
23. Melissa Pope, May 2011 — August 2014. (Instructor, University of Colorado at Boulder)
24. Mirza Peljto, July 2011 — August 2012. (Associate Director, US Field Medical Oncology at Bristol-Myers Squibb)
25. Jennifer Leight, September 2011 — May 2014. (Associate Professor, Ohio State University)
26. William Wan, April 2011 — November 2015. (Developer, athenahealth, Watertown, MA)
28. Sharon Wang, January 2013 — August 2014. (Assistant Professor, Institute of Systems Medicine, Peking University Medical School).
29. Adrienne Rosales, July 2013 — June 2017. (Assistant Professor, University of Texas Austin)
30. Joseph Grim, August 2014 – August 2020. (Senior Scientist, Mosaic Biosciences)
31. Steven Santana, August 2014 – August 2016. (Assistant Professor, Harvey Mudd).
32. Brian Aguado, January 2016 — June 2021. (Assistant Professor, University of California, San Diego)
33. Kemal (Arda) Günay, September 2016 — August 2021 (Liposome Manufacturing Lead, AC Immune, Lausanne, Switzerland).
34. Shengchang Tang, September 2016 — June 2018. (Assistant Professor, University of Illinois, Urbana-Champaign)
35. Laura Macdougall, August 2018 — July 2023. (Senior Scientist, Cascade Biocatalysts)
36. Michael Blatchley, September 2019 — April 2024. (Assistant Professor, Syracuse University)
37. Marissa Wechsler, January 2020 — December 2020. (Assistant Professor, University of Texas at San Antonio)
38. Megan Schroeder, September 2020 — September 2021 (Platform Scientist, Enveda Biosciences).
39. Monica Ohnsorg, October 2021 – present.
40. Georgios (George) Tseropoulos, October 2021 — present.
41. Varsha Rao, January 2022 — May 2023 (Research Scientist, Wildtype).
42. Ben Carberry, January 2022 — May 2022 (Research Scientist, Indivior)
43. Della Shin, January 2022 — September 2023 (Research Scientist, FDA)
44. Alex Khang, August 2022 — present.
45. Kaustav Bera, October 2022 — present.

46. Nicole Friend, September 2023 – present.

Graduate and MD Students Supervised (Independent Study, Biotechnology Program Rotations, and MD Fellows):

Jeff Heyes (Chem. Eng., F96), Lori Pietrowziewski (Chem. Eng., F97), Heather Ferguson (Biochem., S98), Bill Wagner (Biochem., S97), Megan Bonner (MCD Biology, F98), Eric Pogue (MCD Biology, S99), Charlie Nuttelman (Chem. Eng., F99), Michelle Staben (Chem. Eng., F99), Aaron Heib (Biochem., S00), Allison O'Brian (Chem. Eng., F00), Amber Hofstad (Chem. Eng., F00), Suzanne Van Kreeveld (MCD Biology, S01), Mark Roedersheimer (MD, UCHSC, F01), Junhao Ge (F01), Mark Rice (F01), Adrian Hinman (MD, Yale, F01&S02), Laney Philpott (F02), Danielle Benoit (F02), MacKinley Lawson (MSTP, UCHSC, Sum03), Melinda Cushing (MSTP, UCHSC, Sum03), Brennan Dodson (MD, UCHSC, Sum03), Chelsea Collins (F03), Sarah Velencio (Biochem, S03), Krista Hedberg (Biochem, S03), Amber Clausi (S03), Alexia Finetello (Chem. Eng., F04), April Kloxin (Chem. Eng., F04), Justin Kuczynski (MCD Biology, S05), Aaron Lynn (MSTP, UCHSC, Sum 05), Sara Pedron-Haba (Visiting Student from Madrid, Spain, Sum05, F05, Sum 06, F06), Cole DeForest (Chem. Eng., Sum06), Pat Hume (MSTP, UCHSC, Sum 06), Malie Shomali (Chem. Eng., F06), Meghana Rangan (Chem. Eng., F06), Matthew Hoehne (Chem. Eng., F06), Huan (Sharon) Wang (MCD Biology, F06-S07), Quan Yuan (Biochem, S07), Josh McCall (Chem. Eng., F07), Abigail Banaszek (Chem. Eng., F07), Navakanth Gandavarapu (Chem. Eng, F07), Sarah Trexler (Chem. Eng., F08), Adam Terella (MD, UCHSC, F08, S09), Cara Rahan (Biochem., S09), Brooke Johnson (Medical Student, UCHSC, Sum09), Kiran Dyamenahalli (MSTP, UCHSC, Sum09), Balaji Sridhar (MSTP, UCHSC, Sum09), Kelly Trowbridge (Chem. Eng, Sum09), Samir Singh (Chem. Eng, Sum09), Crystal Pulliam (MCD Biology, Fall 09), Chun Yang (Biochemistry, S10), George Myers (MSTP, UCHSC, Sum10), Gennevieve Park (MSTP, UCHSC, Sum10), Kelly Pollock (Chem. Eng., Sum10), Michael Bachman (Chem. Eng., F10), Cara Young (Bioengineering, University of New South Wales, Australia, S11), Justin Wubel (MD Fellow, CU-Denver, S11), Jacob Polaski (Biochem, S11), Huey Wen Ooi (Bioengineering and Nanotechnology, University of Queensland, Brisbane, Australia, Sum11), Emily Matherly (Chem. Eng., Sum11, F11), Kelsey Childress (Chem. Eng, F11), M. Quinn Fleming (Chem. Eng., F11), Jason Silver (MSTP, S14-Sum14), Sergio Spaans (Chemistry, Eindhoven University of Technology, Eindhoven, Netherlands, S14-Sum14), Andrea Gonzalez Rodriguez (Balsells Mobility Program, Spain, Sum14-F14), Anouk Killaars (Molecular Life Sciences, Radboud University in Nijmegen, the Netherland, S15-Sum15), Sabrina Hodgson (Chemistry and Chemical Biology, McMaster University, Hamilton, Ontario, Canada, Sum15), Cierra Walker (IQ Biology, S16), Oksana Dudaryeva (Molecular Systems and Material Chemistry, Eindhoven University of Technology, Eindhoven, Netherlands, F16), Yanyan Jiang (Advanced Molecular Design, University of New South Wales, Australia, F16), Ben Carberry (Chem. Eng., F16), Varsha Rao (Chem. Eng., F16), Alessandra Speccher (Biomolecular Sciences, University of Trento, Italy, F17), Max Yavitt (Chem. Eng., F17), Dilara Batan (Biochemistry, S18), Xuxiao Tan (MCD Biology, S18), Bruce Kirkpatrick (MSTP, Sum18), Ella Hushka (Biol Eng, F18), Mark Young (Chem. Eng, F18), Silvia Vieira (University of Minho, Portugal, S-Sum19), Ailsa Golightly (University of Edinburgh, Scotland, S19), William Skinner (University of Edinburgh, Scotland, S19), Xinyi (Cindy) Fu (MCD Biology, S19), Nat Skillin (MSTP, Sum19), Montana Minnis (Chem. Eng., F19), Daniel Bell (Chem. Eng., F19), Brandon Hilliard (MSTP, Sum21-F21), Mathew Jeaschke (Chem.Eng., F21), Ben Nelson (Chem.Eng., F21), Pedro Lavrador (May22-Oct22, Fulbright Scholar, Portugal), Kurtis Winkler (IQ Biology, S23), Lea Andree (Radboud Medical Center, the Netherlands, S23-Sum23), Myeongjin Kang (Korea University, Seoul, Korea, Aug23-Feb24), Ana Rita Morais Pires dos Santos (Korea University, Seoul, Korea, Aug23-Feb24).

Undergraduate Students Supervised (Independent Study, Senior Thesis, and Research):

Zaynah Khan (F23-pres.), Abby Barmore (Sum23-pres.), Emily Howe (Sum23, REU from UCLA), Abby Bole (F23-pres.), Josh Lee (S23-pres.), Nathaniel Day (F23-S24), Jaxon Cione (F23-pres.), Lea Hibbard (S23-pres.), Kayla Mash (F22-pres.), Violeta Salazar (S23-Sum23), Courtney Schultze (S23-F23), Ushmi Akruwala (S23-Sum23), Deven Lemercier (S23-pres.), Henry Grotheer (S23-pres.), Daniel Saeb (F22-S23, Boulder HS), Tessa Fox (F22-S23, Boulder HS), Sydney Hummel (Sum2022, REU from Purdue), Alexandra (Zoe) Francis (Sum2022-Sum2023), Colter Oroke (S22-pres), Delany McNalley (F21-pres), Quynlyn Bray (S22-Sum23), Declan Gore (F21-S22), Anastasia Diener (S22-Sum22, Fairview HS), Cooper Steputis (F21-S23), Kendra Wegerson (Sum21-S22), Sarah Mellett (Sum21- F21), Elise Niehaus (Sum21-F21), Michael Shockley (Sum21-F21), Grace Hach (Sum 21-pres), Julia Bendorf (Sum21-S21), Isabella Allen (Sum21-S22), Elijah Hawat (S21-S23), Jasmine LeFever (S21-

S22), Cora Ferguson (Sum21, St. Lawrence University), Maggie Swank (Sum21, Sum22, Rose Hulman Institute of Technology), Seth Porter (F19-S20), Brandon Vogt (Sum19-S20), Carrie Bishop (S19-F20, Sum21, F21-Sum22), Ashley Merrill (Sum19-Fall 2020), Kelly Speckl (S19-S22), Cameron Rogowski (F18-S20), Stephen (Kyle) Clark (S19-S20), Evan Benke (S19-F20), Firaol Midekssa (URochester, Sum19), Sam Wasserman (S19), Chloe Hodgson (S19), Sudeepti Nareddy (S19), Adam Vega (S19), Jack Hoyer (S19-F19), Karol Mann (Sum18-Sum19), Alyxandra (Lexi) Golden (Sum 18-pres), Daniel Wilcox (F17-S19), Anne Cox (F17-S19), Olivia Bednarski (F17-F18, S19), Kendra Bannister (F17-S19), Emily Rhodes (Sum18), Daren Kraft (S18-Sum18), Cassidy Andrichik (F17-S18, F18), Kiley Hartigan (Sum17-F17), Michael Vu (Sum17-S18), Michaela Wenning (F16-S19), Gavin Campbell (F16-S17), Rachel Starbuck (F2016-S18), Ella Hushka (F16-S18), Julia O'Keefe (Sum16), Tianna Edwards (Sum16), Madison Rogers (Sum16), Brett Jeffrey (Sum16 – S17), Austin McKay (S16- S17), Matthew Jankousky (S16 –S17), Kaitlyn Benner (F15-S16.), Gavin Campbell (F15-S17), Tommy Fitzsimons (F15-Sum16), Laura Fleming (F15-Sum16), Taylor Roush (F15-S17.), Jessica Hall (F15-S17), Rylee Schauer (F15-S17.), Caitlin Ritz (F15- Sum16), Connor Miksch (F15-S17), Ilona Schwartz (S15), Tyler Follis (S15), Cody Thomas (S15-S16), Alexandria Viert (S15-S17), Francisco Garza Mier y Teran (S15-S16), Benjamin Krahenbuhl (UCLA, Sum15), Ciera Dolechek (F15-S15), Emily Jennings-Fast (F14-S15), Josh Walston (F14-Sum15.); Michael Nehls (S13-S15), Emi Kiyotake (Sum13-S15), Samuel Payne (F13-S16), Yi Zhou (F13-S15), Logan Brock (F13-F14), Lena Basta (Sum13, Sum14, UG from UEdinburgh), Austin Lin (F12-S15), Jennifer Smith (F12-Sum13), Emma Schumacher (F12-Sum13), Sophie Harrington (S12, Sum12, F12), John Isenberger (S12, F12-pres.), Ravi Moghe (S12-Sum14), Caitlin Jones (S12-S15), Rebeccah Chapman (S12-Sum14), Danielle Metzner (F11-Sum12), Dillon Donohue (Sum12-S14), Gillian Copp (Sum12-F13), Andrew Maier (F12-F13), LaTonya Simon (UMBC SMART student, Sum12, Sum13), Christina Choy (Sum12-S13.), Barbara Bowden (Sum12-S13), Zachary Stephens (F12-S13), Laura Stevens (Sum12-F14), Ariana Crespin (Sum12-F13), Nick Doyle (Sum12), Jared Young (S12-S13), Austin Healy (Sum11, REU student from UPittsburgh), Srinidhi J Radhakrishnan (S11-S13), Justin Lee (S10-Sum12), Lisa Sawicki (Sum10, REU student from UFlorida), Miguel Quevedo (Sum10, REU from UMiami), Jake Luoma (F10 – S12), Sarah Haeger (F09-S10, F10-S11), Nicole Darling (F10-S11), Lauren Perdue (S10-F10), Kristen Feaver (F09-S10, F10-S11), Mark Kissler (F09-S10), Bruce Han (Sum09-Sum12.), Emily Maginnis (F09-S11), Donna Kuntzler (Sum09-S10, F10-S11), Jhenya Nahreini (F09-S13), Kristina Fuerst (Sum09-S12), Erika Johannesen (S09-F10), Zachary Lakeman (Sum09-F09), Patrick Boyer (Sum09, REU from Vanderbilt), Kayla Culver (Sum 09, REU from Johns Hopkins), Lydia Everhart, (Sum09, BURST from UDayton), Amanda Jackson (F08-S09), Tyler Menge (F08-S10), Robert Rogers (F08-Sum09), Nick Alvey (S08-F09, Sum10-pres), Alexandra Machen (Sum08, REU student from UKansas), Caroline Szczepanski (Sum08, REU student from Lafayette College), Hanna Kern (Sum07-S09, REU student from CU, F07-F08), Daniel Cox (Sum07, REU student from WashingtonU), Sean Kessler (Sum07, REU student from Lehigh), Brad Harkarder (Sum07), Vani Vivekanandan (F08, Sum07, F07, Sum03), Greg Rocheleau (F06-S06), Brandon Downey (S06), Alexandra Zelinskaya (F06), Brook Cole (S05, Sum05, F05-F06), Suzanne McCartney (Sum06, F07-S08), Kevin Hoth (Sum06, F07-S08), Marielle Soniat (Sum06, REU student from LATech), Stephanie Nelson, (Sum06, REU student from CU), Ben Murphy (Sum06, REU student from Vanderbilt), Stephanie Ablowitz (Sum06, student from UMichigan), Evan Sims (S06-F08), Jonathan Fairbairn (S06), Jo-Tsu Liao (F05-Sum06), Victor Hsu (S06), Andrea Morin (S05-S06), B. Gian James (F05-Sum06), Nathan Johnson (F05-S06), Jonathan King (Sum 05, REU student from Kansas State), Emily Burdett (Sum05, REU student from UOklahoma), Nicole Held (Sum 05, student MCDB, UCB), Andrew Durney (S05 & Sum 05), Cole DeForest (Sum 05, REU student from Princeton), Stephanie Southard (S05, Sum05, F05-S06), Brook Cole (S06-Sum06), Stuart Collins (F04, Sum05, F05-S06), Christina Lopez (F04-Sum06), Mike Jaeggli (Sum04 & Sum05 & Sum06, student from Clemson), Alex Halevi (Sum04, F06, F07-S08), Alexis Wertz (Sum04-F04), Johannah Sanchez-Adams (Sum04, REU student from Duke), Alex Aimetti (Sum04, REU student from WPI), Dianne Dornbusch (Sum04, REU student from Texas A&M), Stephanie LaNasa (Sum04, REU student from UIowa), Sarah Recktenwall-Work (S03-F03, F04-S05, Sum05-Sum06), Stephanie Femino (S04), Jeff Kim (S04), Price Stark (S04), Kirsten Hayda (S04,S05,F05), Phillip Homier (S04,S05,Sum05,F05), Ben Lawrence (Sum03, REU student from OSU), Anders Berliner (Sum03, REU student from Case Western), Steven Beck (Sum03, REU student from CMU), Kyle Lampe (Sum03, REU student from U Missouri), Sean Langelier (Sum03-F03), Maggie Tripodi (S02-Sum06, F06-S07), Alex Lindquist (F01-S04), Emily Schneider (S00, F01-S02), Scott Henry (S01-S02), Mariah Mason (S00-S03), Janice Huang (S01-S02), Ryan Bender (Sum01-S02), Kristin Gardiner (Sum01, REU student from U-Conn), Jason Bara (Sum01, REU student from VCU), Chelsea Shields (F00-S01), Nate Martin (F00-S01), Madalene Fetsch (S01), Tim Farris (S00), Rachel Niedner (S00), Jeffrey Arthur (Sum00, REU student

from Rice Univ.), Laney Philpott (Sum00, REU student from Univ of Arkansas), Andrea Crapisi (Sum 00, REU student from Iowa State Univ), Sara Horton (S00), Alan Peterson (Sum99-S00), Mark Rice (Sum99, REU student from Univ. of Kansas), Cynthia Echevarria (Sum99, REU student from CMU), Shannon Smith, (Sum99, REU student from Univ. of S. Miss.), Erin O'Brien (Sum99, REU student from Mount Holyoke), Melinda Roskos (S99-present), Derek Mortisen (F98-S00), Charlie Nuttelman (F96-Sum99), Sarah Keyser (F96-S99), Kelly Gonzales (S98-S99), Kathryn Riddle (F98-S98), Jessica Robinette (F97-S98), Chris Kloxin (S98-S99), Courtney Stotko (S98), Kyra Marciniak (Sum98, REU student from MIT), Caroline Parler (Sum98, REU student from Univ. of SC), Michael Wu (Sum98, REU student from NYU and Stevens Inst. of Tech.), Jennifer Terry (F96-S97), Lisa Dougan (F96-S97), Hyun Lee (S97), Michele Drexler (Sum97), Jennifer Engler (Sum97), Marc Kroll (Sum97), Matthew Lipscomb (Sum97, REU student from Clemson), Steve Fox (Sum97, REU student from CMU).