

MILLICENT O. SULLIVAN

Associate Professor of Chemical & Biomolecular Engineering
University of Delaware

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EDUCATION

Carnegie Mellon University

Department of Chemical Engineering, 1998 – 2003 (Ph.D.)

Advisor: Todd M. Przybycien

Thesis: “Colloidal Gold/Polyethylenimine Formulations for Gene Delivery”

Princeton University

Department of Chemical Engineering, 1994 – 1998 (B.S.E.)

Certificate in Engineering Biology

PROFESSIONAL EXPERIENCE

Associate Professor

Department of Chemical & Biomolecular Engineering, University of Delaware, 2013 – present

Visiting Associate Professor

Department of Pharmacology, University of Pennsylvania School of Medicine, 2013 – 2014

Affiliated Faculty Member

Systems Biology of Cells in Engineered Environments (SBE2) IGERT Program
University of Delaware, 2013 – present

Affiliated Faculty Member

Biomedical Engineering, University of Delaware, 2013 – present

Adjunct Faculty Member

Center for Targeted Therapeutics and Translational Nanomedicine (CT³N)
University of Pennsylvania, 2012 – present

Affiliated Faculty Member

Quantitative Biology (QBIO) Program, University of Delaware, 2009 – present

Affiliated Faculty Member

Chemistry-Biology Interface (CBI) Program, University of Delaware, 2007 – present

Affiliated Faculty Member

Delaware Biotechnology Institute, University of Delaware, 2006 – present

Affiliated Faculty Member

Biotechnology IGERT Program, University of Delaware, 2006 – 2007

Assistant Professor

Department of Chemical Engineering, University of Delaware, 2006 – present

National Institutes of Health (NIH) Postdoctoral Fellow

Hope Heart Matrix Biology Program, Benaroya Research Institute, 2003 – 2006

Advisor: E. Helene Sage

Millicent O. Sullivan, University of Delaware

Teaching Assistant

Department of Chemical Engineering, Carnegie Mellon University, 1999 – 2001

Research Assistant and Clare Boothe Luce Graduate Fellow

Department of Chemical Engineering, Carnegie Mellon University, 1998 – 2003

Research Intern

Department of Biosystems Research, Sandia National Laboratories, 1997

Research Assistant

Department of Entomology, Michigan State University, 1995

CURRENT RESEARCH

Histone-targeted gene delivery

Extracellular matrix-mediated gene delivery

Photo-sensitive assemblies for nucleic acid delivery

Self-assembled polymer amphiphiles for targeted drug delivery

Applications in bone repair, wound repair, and metastatic breast and prostate cancers

AWARDS and HONORS

University of Delaware

Plenary Lecture, Bionanotechnology Division, AIChE Annual Meeting, November 2016

Keynote Lecture, Biomedical Nanotechnology, 13th Annual Conference: Foundations of Nanoscience (FNANO16), April 2016

University of Delaware Research Foundation (UDRF) Strategic Initiatives Award, 2015

Delaware Bioscience Center for Advanced Biotechnology (CAT) Award, 2013

Georgia Tech Frontiers in Bioengineering Young Investigator (1 of 23), 2013

Outstanding Junior Faculty Member in the College of Engineering, 2011

UDRF Strategic Initiatives Award, 2011

Invited Participant, National Academy of Engineering (NAE), German-American Frontiers of Engineering, 2010

Merck Faculty Fellow, 2008

National Science Foundation (NSF) CAREER Award, 2008

UDRF Young Faculty Research Award, 2007

Prior to University of Delaware

American Society for Matrix Biology (ASMB) Biennial Meeting Award, 2006

NIH Ruth L. Kirchstein NRSA (F32) Postdoctoral Fellowship, 2005

Science and Engineering Education Scholar, 2002

Clare Boothe Luce Graduate Fellowship, 1999

Xerox Prize for Senior Thesis Research, 1998

AIChE Treasurer, Princeton University Student Chapter, 1997

Princeton University Nominee, National Biomedical Engineering Career Symposium, 1997

Princeton Club of Michigan Scholarship, 1994

PUBLICATIONS

1. Vandervelde, T.J., **Ow, M.M.**, Thorpe, W.R., Hartmann, W.M., and Rakerd, B. (1994). "Localizing Broadband Noise in a Reverberation Room." J. Acoust. Soc. Amer. **96**: 3257.

2. **Sullivan, M.M.O.**, Green, J.J., and Przybycien, T.M. (2003). "Development of a Novel Gene Delivery Scaffold Utilizing Colloidal Gold-Polyethylenimine Conjugates for DNA Condensation." Gene Ther. **10**: 1882-1890.
3. **Sullivan, M.M.** and Sage, E.H. (2004). "Hevin, a Matricellular Glycoprotein and Potential Tumor-Suppressor of the SPARC/BM-40/Osteonectin Family." Int. J. Biochem. Cell Biol. **36**: 991-996.
4. Brekken, R.A., **Sullivan, M.M.**, Workman, G., Bradshaw, A.D., Carbon, J., Siadak, A., Murri, C., Framson, P.E., and Sage, E.H. (2004). "Expression and Characterization of Murine Hevin (SC-1), a Member of the SPARC Family of Matricellular Proteins." J. Histochem. Cytochem. **52**: 735-748.
5. **Sullivan, M.M.**, Barker, T.H., Funk, S.E., Karchin, A., Seo, N.S., Hook, M., Sanders, J.E., Starcher, B., Wight, T.N., Puolakkainen, P.A., and Sage, E.H. (2006), "Matricellular Hevin Regulates Decorin Production and Collagen Assembly." J. Biol. Chem. **281**: 27621-27632.
6. **Sullivan, M.M.**, Barker, T.H., Funk, S.E., Puolakkainen, P.A., and Sage, E.H. (2008), "Altered Tissue Repair in Hevin-null Mice: Inhibition of Fibroblast Migration by a Matricellular SPARC Homolog." Wound Rep. Regen. **16**: 310-319.
7. Millili, P.G., Naik, U.P., and **Sullivan, M.O.** (2009), "Multiscale Experimental Biology and Nucleic Acid Delivery: Cancer Therapeutic Approaches via Rational Formulation Design." Cancer Therapy, **7**: 429-448. *Invited.*
8. Millili, P.G., Yin, D.H., Fan, H., Naik, U.P., and **Sullivan, M.O.** (2010), "Formulation of a Peptide Nucleic Acid Based Nucleic Acid Delivery Construct," Bioconjugate Chemistry, **21**: 445-455.
9. Millili, P.G., Selekman, J.A., Blocker, K.M., Johnson, D.A., Naik, U.P., and **Sullivan, M.O.** (2010), "Structural and Functional Consequences of Poly(ethylene glycol) Inclusion on DNA Condensation for Gene Delivery," Microscopy Research and Technique, **73**: 866-877. *Invited.*
10. **Sullivan, M.O.** "Self-unpacking DNA Delivery Scaffolds." For Organelle-Specific Pharmaceutical Nanotechnology. Volkmar Weissig and Gerard D.M. D'Souza (eds.), Wiley, 2010.
11. Blocker, K.M., Kiick, K.L., and **Sullivan, M.O.** (2011) "Surface Immobilization of Plasmid DNA with a Cell-Responsive Tether for Substrate-Mediated Gene Delivery," Langmuir, **27**: 2739-2746.
12. Kelley, E.G.*, Smart, T.P.*, Jackson, A.J., **Sullivan, M.O.**, and Epps, III, T.H. (2011) "Structural Changes in Block Copolymer Micelles Induced by Cosolvent Mixtures," Soft Matter, **7(15)**: 7094-7102.
13. Blocker, K.M. and **Sullivan, M.O.** "Non-viral Gene Delivery for Applications in Regenerative Medicine." For Engineering Biomaterials for Regenerative Medicine: Novel Technologies for Clinical Applications. Sujata N. Bhatia (ed.), Springer, 2012.
14. Reilly, M.J., Larsen, J.D., and **Sullivan, M.O.** (2012) "Histone H3 Tail Peptides and Poly(ethylenimine) have Synergistic Effects for Gene Delivery," Molecular Pharmaceutics, **9(5)**: 1031-1040.
15. Reilly, M.J., Larsen, J.D., and **Sullivan, M.O.** (2012) "Polyplexes Traffic through Caveolae to the Golgi and Endoplasmic Reticulum en Route to the Nucleus," Molecular Pharmaceutics, **9(5)**: 1280-1290.

16. Larsen, J.D., Reilly, M.J., and **Sullivan, M.O.** (2012) "Using the Epigenetic Code to Promote the Unpackaging and Transcriptional Activation of DNA Polyplexes for Gene Delivery," Molecular Pharmaceutics, **9(5)**: 1041-1051.
17. Larsen, J.D., Ross, N.L., and **Sullivan, M.O.** (2012) "Requirements for the Nuclear Entry of Polyplexes and Nanoparticles During Mitosis," J. Gene Med., **14(9-10)**: 580-589.
18. Kelley, E.G., Albert, J.N.L., **Sullivan, M.O.**[‡], and Epps, III, T.H.[‡] (2013) "Solution and Surface Assemblies of Stimuli-responsive Copolymers for Biomedical Applications," Chemical Society Reviews, **42**: 7057-7071. *Invited; Cover.*
19. Patterson, J.* , Kelley, E.G.* , Murphy, R.P.* , Moughton, A., Robin, M., Lu, A., Colombani, O., Chassenieux, C., Cheung, D., **Sullivan, M.O.**, Epps, III, T.H., and O'Reilly, R. (2013) "Structural Characterization of Amphiphilic Homopolymer Micelles Using Light Scattering, SANS, and Cryo-TEM," Macromolecules, **46(15)**: 6319-6325.
20. Kelley, E.G.* , Murphy, R.P.* , Seppala, J.E., Smart, T.P., Hann, S.D., **Sullivan, M.O.**[‡], and Epps, III, T.H.[‡] (2014) "Size Evolution of Highly Amphiphilic Macromolecular Solution Assemblies via a Distinct Bimodal Pathway," Nature Communications, **5**: 3599. doi:10.1038/ncomms4599.
21. Green, M.D., Foster, A.A., Greco, C.T., Roy, R., Lehr, R.M., Epps, III, T.H.[‡], and **Sullivan, M.O.**[‡] (2014) "Catch and Release: Photocleavable Cationic Diblock Copolymers as a Potential Platform for Nucleic Acid Delivery," Polymer Chemistry, **5**: 5535-5541. *Cover.*
22. Urello, M.A., Kiick, K.L., and **Sullivan, M.O.** (2014) "A CMP-based Method for Tunable, Cell-mediated Gene Delivery from Collagen Scaffolds," Journal of Materials Chemistry B, **2(46)**: 8174-8185. *Invited.*
23. Murphy, R.P., Kelley, E.G., Rogers, S., **Sullivan, M.O.**[‡], and Epps, III, T.H.[‡] (2014) "Unlocking Chain Exchange in Block Polymer Micelles at the Air-water Interface: Influence of Agitation," ACS Macro Letters, **3**: 1106-1111.
24. Foster, A.A., Green, M.D., Greco, C.T., Roy, R., Epps III, T.H.[‡], and **Sullivan, M.O.**[‡] (2014) "Light-Mediated Activation of siRNA Release in Diblock Copolymer Assemblies for Controlled Gene Silencing," Advanced Healthcare Materials, **4(5)**: 760-770.
25. Ross, N.L., Munsell, E.V., Sabanayagam, C., and **Sullivan, M.O.** (2015) "Histone-Targeted Polyplexes Avoid Endosomal Escape and Enter the Nucleus During Post-mitotic Redistribution of ER Membranes," Molecular Therapy Nucleic Acids, **4**, e226, doi:10.1038/mtna.2015.2.
26. Foster, A.A., Ross, N.L., and **Sullivan, M.O.** (2015) "Fluorescent Dye Incorporation Causes Weakened Gene Association and Intracellular Aggregate Formation in Non-viral Carriers," Journal of Gene Medicine, **17**: 69-79.
27. Ross, N.L. and **Sullivan, M.O.** (2015) "Importin-4 Regulates Gene Delivery by Enhancing Nuclear Retention and Chromatin Deposition by Polyplexes," Molecular Pharmaceutics, **12(12)**: 4488-4497.
28. Walsh, J.W., Hoffstad, O.J., **Sullivan M.O.**, and Margolis, D.J. (2016) "Association of Diabetic Foot Ulcer and Death in a Population-Based Cohort from the United Kingdom," Diabetes Care, doi: 10.1111/dme.13054.
29. Munsell, E.V., Ross, N.L., and **Sullivan, M.O.** (2016) "Journey to the Center of the Cell: Current Nanocarrier Design Strategies Targeting Biopharmaceuticals to the Cytoplasm and Nucleus," Current Pharmaceutical Design, **22(9)**: 1227-1244.

30. Ross, N.L. and **Sullivan, M.O.** “Overexpression of Caveolin-1 in Inflammatory Breast Cancer Cells Enables IBC-specific Gene Delivery and Prodrug Conversion using Histone-targeted Polyplexes,” doi 10.1002/bit.26022.
31. Greco, C.T., Epps III, T.H.[‡], and **Sullivan, M.O.**[‡] “Precise Spatiotemporal Control of Gene Expression Through the Mechanistic Design of Polymer Nanocarriers,” submitted.
32. Urello, M.A., Kiick, K.L.[‡], and **Sullivan, M.O.**[‡] “Integration of Growth Factor Gene Delivery with Collagen-Triggered Wound Repair Cascades using Collagen-Mimetic Peptides,” submitted. **Invited.**
33. Urello, M.A., Kiick, K.L.[‡], and **Sullivan, M.O.**[‡] “ECM Turnover-Stimulated Gene Delivery through CMP-Plasmid Integration in Collagen,” submitted.

PRESENTATIONS and SEMINARS

Invited Conference Presentations since July 2006

1. Regenerative Medicine Meeting, Hilton Head Island, SC, March 2008
Invited Speaker: “Towards Reversible Packaging Methods for DNA and RNA Delivery”
2. 4th International Conference, Bioengineering and Nanotechnology, Dublin, Ireland, July 2008
Invited Speaker: “Development of Cell-Specific Gene Delivery Methods for Vascular Applications”
3. Frontiers at the Chemistry-Biology Interface Symposium, Baltimore, MD, May 2009
Invited Speaker [P.G. Millili]: “DNA PEGylation Inhibits Multimolecular Aggregation During Complexation”
4. 37th Annual NOBCCChE National Conference, Atlanta, GA, April 2010
Invited Speaker [A.A.A. Palmer]: “Cell-Responsive Peptide Nucleic Acid siRNA Conjugates for Gene Delivery”
5. Frontiers at the Chemistry-Biology Interface Symposium, Newark, DE, April 2011
Invited Speaker [K.M. Blocker]: “Tunability and Tailorability of Cell-triggered DNA Release from a Substrate-mediated Delivery System”
6. Gordon Research Seminar (GRS): Polymers East, South Hadley, MA, June 2011
Invited Speaker [E.G. Kelley]: “Synthesis and Self-assembly of Bio-responsive Block Copolymers”
7. American Institute of Chemical Engineers Fall Meeting, Minneapolis, MN, October 2011
Invited Speaker: “Synthesis and Self-assembly of Bio-responsive Block Copolymers”
8. UD – CNS – NIST Symposium, Newark, DE, October 2011
Invited Speaker: “Synthesis and Self-assembly of Bio-responsive Block Copolymers”
9. Gordon Research Conference (GRC): Colloidal, Macromolecular, and Polyelectrolyte Solutions, Ventura, CA, February 2012
Invited Speaker: “Bio-responsive Block Copolymer Assemblies for Targeted Drug Delivery”
10. American Chemical Society Spring Meeting, San Diego, CA, March 2012
Invited Symposium Speaker [Excellence in Graduate Polymer Research Symposium; E.G. Kelley]: “Synthesis and Self-assembly of Bio-responsive Block Copolymers”

11. Gordon Research Conference (GRC): Drug Carriers in Medicine and Biology, Waterville, NH, August 2012
Invited Speaker: “Histone Polyplexes Use Caveolar Uptake and Retrograde Trafficking During Gene Transfer”
12. American Chemical Society Fall Meeting, Philadelphia, PA, August 2012
Invited Symposium Speaker [Innovative Chemistry Research for Health and Medicine: East meets West]: “Histone-mimetic Peptides for Targeted Intracellular Delivery During Gene Transfer”
13. Penn Symposium of the CT³N, Philadelphia, PA, November 2012
Invited Speaker: “Mechanisms of Intracellular Trafficking and Nuclear DNA Delivery by Histone-derived Peptides”
14. Gordon Research Seminar (GRS): Macromolecular Materials, Ventura, CA, January 2013
Invited Speaker [M.D. Green]: “Solution Assemblies of Block Copolymers for Nucleic Acid and Drug Delivery”
15. Georgia Tech Frontiers in Bioengineering Symposium, Atlanta, GA, February 2013
Invited Poster Presenter: “Cellular Processing of Drug and Gene Delivery Biomaterials”
16. American Chemical Society Spring Meeting, New Orleans, LA, April 2013
Invited Symposium Speaker [Bottom-up Design of the Next Generation of Biomaterials]: “Photo-sensitive Polymers for Nucleic Acid Packaging, Delivery, and Release”
17. Materials Research Society (MRS) Spring Meeting, San Francisco, CA, April 2013
Invited Symposium Speaker [Design of Cell-instructive Materials]: “Histone-mimetic Polyplexes for Reversible DNA Packaging, Enhanced Nuclear Delivery, and Efficient Gene Transfer to Mitotic Cells”
18. Gordon Research Seminar (GRS): Polymers East, South Hadley, MA, June 2013
Invited Speaker [E.G. Kelley]: “Synthesis, Assembly, and Solution Characterization of Amphiphilic Homopolymers and Block Copolymers”
19. 8th German-Korean Polymer Symposium, Hamburg, Germany, August 2013
Invited Speaker: “Histone-Mimetic Nanostructures for Reversible DNA Packaging, Enhanced Nuclear Delivery, and Efficient Gene Transfer”
20. The Council for Chemical Research (CCR) Annual Meeting, Alexandria, Virginia, May 2014
Invited Speaker and Panelist [E.G. Kelley]
21. 5th International Conference on Nanotechnology, Prague, Czech Republic, August 2014
Invited Speaker: “Histone-inspired Targeting Strategies in Therapeutic Gene Delivery”
22. 6th International Conference on Nanotechnology, Barcelona, Spain, July 2015
Invited Speaker: “On/off Spatiotemporal Control and Tunable Gene Silencing using Photoresponsive Nanocarriers”
23. Princeton Bioengineering Day, Princeton, New Jersey, October 2015
Invited Speaker: “Unlocking (More) Personalized Medicines through Nanocarrier Design”
24. 13th Annual Conference on Foundations of Nanoscience: Self-assembled Architectures and Devices (FNANO16), Snow Bird, Utah, April 2016
Invited Speaker: “Unlocking Intracellular Therapeutic Targets through Novel Nanostructured Biomaterials”

25. American Society of Gene and Cell Therapy (ASGCT) Annual Meeting, Washington, D.C., May 2016
Invited Symposium Speaker: "Regulation of Intracellular Delivery through Peptide Nanocarrier Design and Self-assembly"
26. Engineering Conferences International (ECI): Nanotechnology in Medicine: From Molecules to Humans, Herrnstein, Austria, July 2016
Invited Speaker: "Regulation of Intracellular Delivery through Peptide-based Nanocarrier Design"
27. Gordon Research Seminar (GRS): Drug Carriers in Medicine and Biology, Waterville, New Hampshire, August 2016
Invited Speaker [E.V. Munsell]: "Histone-Targeted Gene Delivery Carriers for Bone Regeneration"
28. American Institute of Chemical Engineers Fall Meeting, San Francisco, CA, November 2016
Plenary Lecture [Bionanotechnology]: "Unlocking Intracellular Therapeutic Targets through Novel Nanostructured Biomaterials"
29. American Institute of Chemical Engineers Fall Meeting, San Francisco, CA, November 2016
Invited Speaker: "Regulation of Intracellular Delivery through Peptide-based Nanocarrier Design"

Invited Lectures, Seminars, and Panels since July 2006

1. Delaware Biotechnology Institute, Newark, DE, October 2006
Invited Seminar: "Cell-Material Interactions and the Design of Vehicles for Gene Delivery and Tissue Engineering"
2. University of Delaware, Chemistry-Biology Interface Program, Newark, DE, May 2007
Invited Seminar: "Bioresponsive Materials for Step-wise Drug and DNA Transport"
3. University of Delaware, Department of Chemistry, Newark, DE, October 2007
Invited Lecture: "Engineering Biomolecular Materials for Protein and Nucleic Acid Delivery"
4. Merck & Co., Pharmaceutical Research and Development, West Point, PA, August 2008
Invited Seminar [Peter Millili]: "Development of a Hierarchically Designed Peptide Nucleic Acid Based DNA Delivery Construct"
5. University of Maryland, Baltimore County, Department of Chemistry and Biochemistry, Baltimore, MD, October 2008
Invited Seminar: "Towards Reversible Packaging Methods for DNA and RNA Delivery"
6. AIChE Delaware Valley and Wilmington Joint Section Meeting, Delaware Biotechnology Institute, University of Delaware, Newark, DE, February 2009
Invited Lecture: "Novel Mechanisms for Drug Delivery"
7. Washington State University, Department of Pharmaceutical Sciences, Pullman, WA, January 2010
Invited Seminar: "Formulation Strategies for the Assembly of Multifunctional Materials for Drug and Gene Delivery"
8. Rutgers – The State University of New Jersey, Department of Chemical and Biochemical Engineering, Piscataway, NJ, October 2010
Invited Seminar: "Cellular Processing of Drug and Gene Delivery Biomaterials"

9. University of Florida, Department of Chemical Engineering, Gainesville, FL, October 2010
Invited Seminar: “Cellular Processing of Drug and Gene Delivery Biomaterials”
10. University of Massachusetts, Department of Polymer Science and Engineering, Amherst, MA, November 2010
Invited Seminar: “Cellular Processing of Drug and Gene Delivery Biomaterials”
11. DuPont Experimental Station, Wilmington, DE, January 2011
Invited Seminar [Horizons in Biotechnology Seminar Series]: “Cellular Processing of Drug and Gene Delivery Biomaterials”
12. Carnegie Mellon, Department of Chemical Engineering, Pittsburgh, PA, February 2011
Invited Seminar: “Cellular Processing of Drug and Gene Delivery Biomaterials”
13. University of Michigan, Department of Pharmaceutical Sciences, Ann Arbor, MI, March 2011
Invited Seminar: “Cellular Processing of Drug and Gene Delivery Biomaterials”
14. Michigan State University, Department of Chemical Engineering and Materials Science, East Lansing, MI, March 2011
Invited Seminar: “Cellular Processing of Drug and Gene Delivery Biomaterials”
15. Fraunhofer Center for Molecular Biotechnology, Newark, DE, March 2011
Invited Seminar: “Cellular Processing of Drug and Gene Delivery Biomaterials”
16. University of Delaware, Department of Animal & Food Sciences, Newark, DE, December 2011
Invited Seminar: “Cellular Processing of Drug and Gene Delivery Biomaterials”
17. Johns Hopkins University, Department of Biomedical Engineering (Translational Tissue Engineering Center), Baltimore, MD, January 2012
Invited Seminar: “Cellular Processing of Drug and Gene Delivery Biomaterials”
18. University of Pennsylvania, Department of Bioengineering (Center for Targeted Therapeutics and Translational Nanomedicine), Philadelphia, PA, March 2012
Invited WIP Seminar: “Cellular Processing of Drug and Gene Delivery Biomaterials”
19. University of Washington, Department of Chemical Engineering, Seattle, WA, April 2012
Invited Seminar: “Cellular Processing of Drug and Gene Delivery Biomaterials”
20. Rensselaer Polytechnic Institute, Department of Chemical and Biological Engineering, Troy, NY, April 2012
Invited Seminar: “Cellular Processing of Drug and Gene Delivery Biomaterials”
21. University of Delaware, Department of Biological Sciences, Newark, DE, May 2012
Invited Seminar: “Cellular Processing of Drug and Gene Delivery Biomaterials”
22. Georgia Institute of Technology, Department of Chemical and Biomolecular Engineering, Atlanta, GA, September 2012
Invited Seminar: “Cellular Processing of Drug and Gene Delivery Biomaterials”
23. Florida International University, Department of Chemistry and Biochemistry, Miami, FL, September 2012
Invited Seminar: “Cellular Processing of Drug and Gene Delivery Biomaterials”
24. Thomas Jefferson University, Department of Orthopedic Surgery, Philadelphia, PA, December 2012
Invited Seminar: “Cellular Processing of Drug and Gene Delivery Biomaterials”

25. University of Hamburg, Department of Chemistry, Hamburg, Germany, August 2013
Invited Seminar: “Cellular Processing of Drug and Gene Delivery Biomaterials”
26. University of Melbourne, Department of Chemical & Biomolecular Engineering, Melbourne, Victoria, Australia, January 2015
Invited Seminar: “Unlocking Personalized Medicines Through Nanocarrier Design”
27. Kendal-Crosslands Communities, Forum Seminar Series, Kennett Square, PA, February 2015
Invited Seminar: “Unlocking Personalized Medicines Through Nanomaterials Design”
28. University of Delaware, College of Engineering Coffee Talks, Newark, DE, December 2015
Invited Seminar: “Biologically Inspired Gene Delivery to Enhance Tissue Repair”
29. University of Iowa, Medicinal Chemistry, College of Pharmacy, Iowa City, IA, January 2016
Invited Seminar: “Unlocking Personalized Medicines Through Nanomaterials Design”
30. Arizona State University, School for Engineering of Matter, Transport, and Energy (SEMTE), Tempe, AZ, March 2016
Invited Seminar: “Unlocking Personalized Medicines Through Nanomaterials Design”
31. University of North Carolina, Division of Molecular Pharmaceutics, Eshelman School of Pharmacy, Chapel Hill, NC, June 2016
Invited Seminar: “Unlocking Personalized Medicines Through Nanomaterials Design”
32. Vanderbilt University, Department of Chemical & Biomolecular Engineering, Nashville, TN, October 2016
Invited Seminar: “Unlocking Personalized Medicines Through Nanomaterials Design”

Other Oral Presentations since July 2006

1. ACS Fall Meeting, Philadelphia, PA, August 2008
“Development of Cell-Specific Gene Delivery Methods for Vascular Applications”
Speaker: M.O. Sullivan
2. AIChE Annual Meeting, Philadelphia Convention Center, Philadelphia, PA, November 2008
“Formulation of a Hierarchically Designed Peptide Nucleic Acid (PNA) Based DNA Delivery Construct”
Speaker: P.G. Millili
3. AIChE Annual Meeting, Philadelphia Convention Center, Philadelphia, PA, November 2008
“Covalent Tethering of Plasmid DNA for Substrate Mediated Gene Delivery”
Speaker: K.M. Blocker
4. Society for Biomaterials (SFB) Annual Meeting, Grand Hyatt, San Antonio, TX, April 2009
“Formulation of a Hierarchically Designed PNA Based DNA Delivery Construct”
Speaker: P.G. Millili
5. Annual Meeting of the American Society of Gene Therapy, San Diego Convention Center, San Diego, CA, May 2009
“Towards Reversible Packaging Methods for DNA and RNA Delivery”
Speaker: M.O. Sullivan
6. ACS Fall Meeting, Washington, D.C., August 2009
“Promoting Self-unpackaging of pDNA from a Novel, Non-viral, Histone-mimetic Gene Delivery Vector”
Speaker: J.D. Larsen

7. ACS Fall Meeting, Washington, D.C., August 2009
“Surface Immobilization of Plasmid DNA with a Cell-responsive Tether for Substrate-mediated Gene Delivery”
Speaker: K.M. Blocker
8. AIChE Annual Meeting, Gaylord Opryland Hotel, Nashville, TN, November 2009
“Histone-mimetic Gold Nanoparticles as Self-activating, Tailorable Gene Delivery Scaffolds”
Speaker: M.J. Reilly
9. ACS Spring Meeting, San Francisco, CA, March 2010
“Histone-mimetic Conjugates as Self-activating & Tailorable Gene Delivery Vehicles,”
Speaker: M.J. Reilly
10. St. Jude Annual Symposium, St. Jude Children's Hospital, Memphis, TN, April 2010
“Histone-mimetic Conjugates as Self-activating & Tailorable Gene Delivery Vehicles”
Speaker: M.J. Reilly
11. SFB Annual Meeting, Washington State Convention Center, Seattle, WA, April 2010
“Surface Immobilization of Plasmid DNA with a Cell-Responsive Tether for Substrate-Mediated Gene Delivery”
Speaker: K.M. Blocker
12. American Conference on Neutron Scattering, Canadian Neutron Beam Centre, Ottawa, Ontario, Canada, June 2010
“Manipulating Micellar Structures with Changing Solvent Conditions”
Speaker: T.P. Smart
13. AIChE Annual Meeting, Salt Palace Convention Center, Salt Lake City, UT, November 2010
“Tunability of Cell-Triggered DNA Release from a Substrate-Mediated Delivery System”
Speaker: K.M. Blocker
14. AIChE Annual Meeting, Salt Palace Convention Center, Salt Lake City, UT, November 2010
“Intracellular Trafficking and Activity of Histone-Mimetic Gene Delivery Vehicles”
Speaker: M.O. Sullivan
15. American Physical Society (APS) Meeting, Dallas, TX, March 2011
“Manipulating the structural conformation of PB-PEO micelles using water-tetrahydrofuran co-solvent mixtures”
Speaker: E.G. Kelley
16. ACS Spring Meeting, Anaheim, CA, March 2011
“Using the epigenetic code to promote unpackaging from a non-viral, gene delivery vector”
Speaker: J.D. Larsen
17. ACS Spring Meeting, Anaheim, CA, March 2011
“Tunability and tailorability of cell-triggered DNA release from a substrate-mediated delivery system”
Speaker: K.M. Blocker
18. ACS Spring Meeting, Anaheim, CA, March 2011
“Manipulating the structural conformation of PB-PEO micelles using water-tetrahydrofuran co-solvent mixtures”
Speaker: E.G. Kelley

19. SFB Annual Meeting, Orlando Convention Center, Orlando, FL, April 2011
"Intracellular trafficking and activity of histone-mimetic gene delivery vehicles"
Speaker: J.D. Larsen
20. AIChE Annual Meeting, Minneapolis Convention Center, Minneapolis, MN, October 2011
"Intracellular Trafficking and Activity of Histone-Mimetic Gene Delivery Vehicles"
Speaker: M.O. Sullivan
21. ACS Spring Meeting, San Diego, CA, March 2012
"Stabilization of Non-equilibrium Block Copolymer Micelles"
Speaker: S.D. Hann
22. ACS Spring Meeting, San Diego, CA, March 2012
"Photo-active Polyplexes for Controlled Nucleic Acid Delivery"
Speaker: A.A.A. Palmer
23. Mid-Atlantic Soft Matter Workshop, Georgetown University, Washington, D.C., January 2013
"PB-PEO block copolymer micelle dynamics upon cosolvent removal"
Speaker: R.P. Murphy
24. AIChE Annual Meeting, Hilton San Francisco, San Francisco, CA, November 2013
"Solution Assemblies of Novel Amphiphilic Block Copolymers for Drug Delivery"
Speaker: M.D. Green
25. AIChE Annual Meeting, Hilton San Francisco, San Francisco, CA, November 2013
"Photocleavable Polyplexes As Dynamic Carriers for Controlled Nucleic Acid Delivery"
Speaker: A.A. Foster
26. Mid-Atlantic Soft Matter Workshop, Philadelphia, PA, January 2014
"Chain exchange in highly amphiphilic block copolymer micelles"
Speaker: R.P. Murphy
27. 40th Annual Northeast Bioengineering Conference, Northeastern University, Boston, MA, April 2014
"Histone-mimetic Polyplexes for Targeted Intracellular Delivery During Gene Transfer"
Speaker: N.L. Ross
28. Annual Meeting of the American Society of Gene & Cell Therapy, Marriott Wardman Park, Washington, D.C., May 2014
"Histone-targeted Polyplexes Use Native Vesicular Trafficking Mechanisms to Reach the Nucleus"
Speaker: M.O. Sullivan
29. Biomedical Engineering Society Meeting Annual Meeting, Henry B. Gonzales Convention Center, San Antonio, TX, October 2014
"Controlled Release through Physical Collagen Modification mediated by Collagen Mimetic Peptides"
Speaker: M.A. Urello
30. AIChE Annual Meeting, Marriott Marquis Atlanta, Atlanta, GA, November 2014
"DNA Modification of Collagen Scaffolds for Applications in Regenerative Medicine"
Speaker: M.O. Sullivan
31. ACS Spring Meeting, Denver, CO, March 2015
"Photoresponsive on/off dormancy in polyplexes for patterned control of cell behavior"
Speaker: C.T. Greco

32. ACS Spring Meeting, Denver, CO, March 2015
“A CMP-based Method for Achieving Tunable, Cell-mediated Gene Delivery”
Speaker: M.A. Urello
33. ACS Spring Meeting, Denver, CO, March 2015
“Histone-Targeted Gene Delivery Scaffolds for Bone Regeneration”
Speaker: E.V. Munsell
34. Fusion Drug Delivery Conference, Hilton El Conquistador, Tucson, AZ, September 2015
“Collagen Mimetic Peptides for Integration of Gene Delivery with Tissue Repair”
Speaker: M.O. Sullivan
35. AIChE Annual Meeting, Salt Palace Convention Center, Salt Lake City, UT, November 2015
“Collagen Mimetic Peptides for Integration of Gene Delivery with Tissue Repair”
Speaker: M.O. Sullivan
36. AIChE Annual Meeting, Salt Palace Convention Center, Salt Lake City, UT, November 2015
“Light-Induced Gene Silencing for Applications in Regenerative Medicine”
Speaker: M.O. Sullivan
37. MRS Fall Meeting, Hynes Convention Center, Boston, MA, December 2015
“Light-Induced Gene Silencing for Applications in Regenerative Medicine”
Speaker: M.O. Sullivan
38. ACS Spring Meeting, San Diego, CA, March 2016
“Histone-Targeted Gene Delivery Scaffolds for Bone Regeneration”
Speaker: E.V. Munsell
39. ACS Fall Meeting, Philadelphia, PA, August 2016
“Collagen Mimetic Peptides for Integration of Growth Factor Gene Delivery with Tissue Repair”
Speaker: M.A. Urello

Poster Presentations since July 2006

1. Frontiers at the Chemistry-Biology Interface Symposium (FCBIS), University of Maryland, College Park, MD, April 2008
“Hierarchical Design of Vehicles for Nucleic Acid Delivery”
Presenter: P.G. Millili
2. FCBIS, University of Maryland, College Park, MD, April 2008
“Covalent Tethering of Plasmid DNA for Substrate-Mediated Gene Delivery”
Presenter: K.M. Blocker
3. 4th International Conference, Bioengineering and Nanotechnology, Dublin, Ireland, July 2008
“Formulation of a Hierarchically Designed PNA Based DNA Delivery Construct”
Presenter: P.G. Millili
4. Chemical Insights Into Biological Processes Symposium, Hood College, Frederick, MD, August 2008
“Formulation of a Hierarchically Designed PNA Based DNA Delivery Construct”
Presenter: P.G. Millili

5. 11th Annual Undergraduate Research Symposium in the Chemical and Biological Sciences, University of Maryland, Baltimore County, Baltimore, MD, October 2008.
“Design of a Cell-Responsive DePEGylation DNA Delivery System”
Presenter: S.L. Myrick
6. AIChE Annual Meeting, Philadelphia Convention Center, Philadelphia, PA, November 2008
“Histone-Mimetic Gold Nanoparticles as Self-Activating, Tailorable Gene Delivery Scaffolds”
Presenter: M.J. Reilly
7. American Society for Biochemistry and Molecular Biology (ASBMB) Annual Meeting, Ernest N. Morial Convention Center, New Orleans, LA, April 2009
“Design of a Cell-Responsive DePEGylation DNA Delivery System”
Presenter: S.L. Myrick
8. International Society of Pharmaceutical Engineers Delaware Valley Poster Competition, Widener University, West Chester, PA, April 2009
“DNA PEGylation Inhibits Multimolecular Aggregation During Complexation”
Presenter: P.G. Millili
9. FCBIS, University of Maryland, Baltimore County, Baltimore, MD, May 2009
“Histone-Mimetic Gold Nanoparticles as Gene Delivery Scaffolds”
Presenter: M.J. Reilly
10. FCBIS, University of Maryland, Baltimore County, Baltimore, MD, May 2009
“Development of a Self-unpackaging Histone-Mimetic Gene Delivery Vector”
Presenter: J.D. Larsen
11. FCBIS, University of Maryland, Baltimore County, Baltimore, MD, May 2009
“Covalent Tethering of pDNA for Cell-Responsive Substrate-Mediated Gene Delivery”
Presenter: K.M. Blocker
12. Annual Meeting of the American Society of Gene Therapy, San Diego Convention Center, San Diego, CA, May 2009
“Histone-Mimetic Gold Nanoparticles as Gene Delivery Scaffolds”
Presenter: M.J. Reilly
13. Biochemical Engineering XVI Meeting, Sheraton Burlington Hotel and Conference Center, Burlington, VT, July 2009
“Formulation of a Hierarchically Designed PNA Based DNA Delivery Construct”
Presenter: P.G. Millili
14. 12th Annual Undergraduate Research Symposium in the Chemical and Biological Sciences, University of Maryland, Baltimore County, Baltimore, MD, October 2009
“Development of a PNA Based siRNA Delivery System”
Presenter: T.U. Naik
15. International Society of Pharmaceutical Engineers International Poster Competition, San Diego, CA, November 2009
“Formulation of a Hierarchically Designed PNA Based DNA Delivery Construct”
Presenter: P.G. Millili
16. SFB Annual Meeting, Washington State Convention Center, Seattle, WA, April 2010
“Histone-mimetic Conjugates as Self-activating & Tailorable Gene Delivery Vehicles”
Presenter: M.J. Reilly

17. ASBMB Annual Meeting, Anaheim, CA, April 2010
“Development of a PNA Based siRNA Delivery System”
Presenter: T.U. Naik
18. FCBIS, Johns Hopkins University, Baltimore, MD, May 2010
“Histone-Mimetic Conjugates as Self-Activating & Tailorable Non-Viral Gene Delivery Vehicles”
Presenter: M.J. Reilly
19. FCBIS, Johns Hopkins University, Baltimore, MD, May 2010
“Cell-Responsive siRNA Nanoconjugates for Gene Delivery”
Presenter: A.A.A. Palmer
20. FCBIS, Johns Hopkins University, Baltimore, MD, May 2010
“Non-Viral Gene Delivery by Biomaterials”
Presenter: J.D. Larsen
21. FCBIS, Johns Hopkins University, Baltimore, MD, May 2010
“Gene Delivery by Surface Immobilization of DNA onto Biomaterial Scaffolds”
Presenter: K.M. Blocker
22. GRC: Polymer Physics, Mount Holyoke College, South Hadley, MA, June 2010
“Self-Assembly of Bio-responsive Block Copolymers”
Presenter: E.G. Kelley
23. GRC: Drug Carriers in Medicine and Biology, Waterville Resort, Waterville, NH, August 2010
“Intracellular Activity of Histone-mimetic Gene Delivery Vehicles”
Presenter: M.O. Sullivan
24. ACS Fall Meeting, Boston Convention & Exposition Center, Boston, MA, August 2010
“Manipulating the Structural Conformation of PB-PEO Micelles in Water-THF Cosolvent Mixtures”
Presenter: E.G. Kelley
25. ACS Fall Meeting, Boston Convention & Exposition Center, Boston, MA, August 2010
“Cross-linked PB-PEO Hybrid Micelles for Targeted Delivery”
Presenter: T.P. Smart
26. 13th Annual Undergraduate Research Symposium in the Chemical and Biological Sciences, University of Maryland, Baltimore County, Baltimore, MD, October 2010
“Development of a PNA Based siRNA Delivery System”
Presenter: T.U. Naik
27. ASBMB Annual Meeting, Anaheim, CA, April 2011
“Development of a PNA Based siRNA Delivery System”
Presenter: T.U. Naik
28. FCBIS, University of Delaware, Newark, DE, April 2011
“Histone-mimetic polyplexes as self-activating & tailorable non-viral gene delivery vehicles”
Presenter: M.J. Reilly
29. FCBIS, University of Delaware, Newark, DE, April 2011
“Promoting self-unpackaging of a non-viral gene delivery vehicle through the incorporation of a histone-mimetic peptide”
Presenter: J.D. Larsen

30. GRS: Polymers East, Mount Holyoke College, South Hadley, MA, June 2011
“Manipulating and stabilizing micelle assemblies”
Presenter: T.P. Smart
31. GRC: Polymers East, Mount Holyoke College, South Hadley, MA, June 2011
“Synthesis of bio-responsive block copolymers”
Presenter: E.G. Kelley
32. FCBIS, University of Pennsylvania, Philadelphia, PA, May 2012
“Photo-labile Polyplexes for Gene Delivery”
Presenter: A.A.A. Palmer
33. FCBIS, University of Pennsylvania, Philadelphia, PA, May 2012
“Intracellular Unpackaging of Polyethylenimine (PEI) DNA Polyplexes for Gene Therapy”
Presenter: M. Urello
34. MacroGroup UK International Conference on Polymer Synthesis & UKPCF International Conference on Polymer Colloids, University of Warwick, Coventry, UK, July 2012
“Structural Changes in Block Copolymer Micelles Induced by Cosolvent Mixtures”
Presenter: E. Kelley
35. GRC: Macromolecular Materials, Ventura, CA, January 2013
“Solution assemblies of block copolymers for nucleic acid and drug delivery”
Presenter: M.D. Green
36. GRS: Polymers East, South Hadley, MA, June 2013
“Synthesis, assembly, and solution characterization of amphiphilic homopolymers and block copolymers”
Presenter: E.G. Kelley
37. GRC: Polymers East, South Hadley, MA, June 2013
“Synthesis, assembly, and solution characterization of amphiphilic homopolymers and block copolymers”
Presenter: E.G. Kelley
38. Northeast Regional IDeA Conference, Newark, DE, August 2013
“Self-assembly and evolution of block copolymer micelles in aqueous solutions”
Presenter: R.P. Murphy
39. Northeast Regional IDeA Conference, Newark, DE, August 2013
“Solution assemblies of block copolymers for gene and drug delivery”
Presenter: M.D. Green
40. AIChE Annual Meeting, San Francisco, CA, November 2013
“Tailoring Ionic Block Copolymer Structure and Function for Therapeutic Delivery and Energy Applications”
Presenter: M.D. Green
41. Center for Targeted Therapeutics and Translational Nanomedicine (CT³N) Symposium, University of Pennsylvania, Philadelphia, PA, November 2013
“Histone-Mimetic Nanoparticles as Self-Activating and Tailorable Gene Delivery Scaffolds”
Presenter: E. Munsell

42. Center for Targeted Therapeutics and Translational Nanomedicine (CT³N) Symposium, University of Pennsylvania, Philadelphia, PA, November 2013
“Photo-responsive polymers for controlled nucleic acid delivery”
Presenter: C. Greco
43. 40th Annual Northeast Bioengineering Conference, Northeastern University, Boston, MA, April 2014
“The Modification of Collagen Scaffolds for Applications in Regenerative Medicine”
Presenter: M.A. Urello
44. GRC: Drug Carriers in Medicine and Biology, Waterville Resort, Waterville, NH, August 2014
“DNA Modification of Collagen Scaffolds for Applications in Regenerative Medicine”
Presenter: M.O. Sullivan
45. FCBIS, University of Maryland Baltimore County, Baltimore, MD, May 2015
“Histone-Targeted Gene Delivery Scaffolds for Bone Regeneration”
Presenter: E.V. Munsell
46. FCBIS, Johns Hopkins University, Baltimore, MD, May 2016
“Collagen Mimetic Peptides for Integration of Growth Factor Gene Delivery with Tissue Repair”
Presenter: M.A. Urello
47. FCBIS, Johns Hopkins University, Baltimore, MD, May 2016
“Efficient Tuning of siRNA Dose Response Behavior by Combining Mixed Polymer Nanocarriers with Kinetic Modeling”
Presenter: C.T. Greco
48. GRC: Drug Carriers in Medicine and Biology, Waterville Resort, Waterville, NH, August 2016
“Collage Turnover-Stimulated Gene Delivery to Enhance Wound Repair”
Presenter: M.O. Sullivan
49. GRC: Drug Carriers in Medicine and Biology, Waterville Resort, Waterville, NH, August 2016
“Histone-Targeted Gene Delivery Carriers for Bone Regeneration”
Presenter: E.V. Munsell

WORKSHOPS, STUDY ABROAD, AND SHORT COURSES

1. University of Delaware Study Abroad Program in Chemical & Biomolecular Engineering. I lead a study abroad program for UD CBE juniors and seniors, conducted biannually at the University of Melbourne (UM) during the January winter session. In January 2015, I co-led this program, which brought a group of 31 UD students to UM, and I also co-taught the UD students and UM students in a Senior Laboratory core course. I have assumed leadership of the program for January 2017 and onwards.
2. GO:LEAD (Graduate Opportunities: Learn, Engage, AND Discover) Program. I co-organized this program run annually at the University of Delaware. GO:LEAD aims to increase enrollment of students from underrepresented backgrounds in Ph.D. studies in the chemical sciences (across the U.S.) by informing and inspiring talented seniors from across the country on the benefits of a graduate education. The target areas in the initial year of the program are Chemistry/Biochemistry, Chemical Engineering, and Materials Science. The GO:LEAD activities include interactive workshops, presentations, and networking events held during a long weekend on the UD campus.

3. Delaware-CTR ACCEL – Accelerating Clinical and Translational Research. I am a faculty mentor, and provide additional junior faculty mentoring service in a variety of other roles (career and mentoring panels, lectures, etc.) through the DE-CTR ACCEL program.
4. Future Faculty Workshop. I will serve as a faculty mentor and participant in this program designed for late stage Ph.D. students and post-doctoral scholars interested in academic careers. The program will be held at the University of Delaware in August 2016.

RESEARCH SUPPORT

Completed

National Institutes of Health (NIGMS) 1 F32 GM073363

Project period: 08/01/2005 – 06/30/2006

“Hevin Regulation of Cell Migration”

Amount: \$41,330

National Institutes of Health (NCRR) 2 P20 RR016472-07

Project period: 03/21/2007 – 09/20/2007

“Characterization and Imaging of Polymeric Nanoparticles for Drug and Gene Delivery”

Amount: \$4,160 (INBRE Seed Funding)

National Institutes of Health (NCRR) 2 P20 RR016472-07

Project period: 06/11/2007 – 04/23/2008

“Characterization and Imaging of DNA Delivery from Tissue Engineering Hydrogels”

Amount: \$7,500 (INBRE Seed Funding)

University of Delaware Research Fund

Project period: 06/01/2007 – 05/31/2008

“Rational Design of Biodegradable Nanoparticles for Gene Delivery”

Amount: \$25,000

U.S. Army Research Office W911NF-08-1-0241

Project period: 06/03/2008 – 06/02/2009

“Particle Characterization Equipment for Shear Thickening Fluid Formulation” (DURIP)

PI: N. J. Wagner; Co-PI: M.O. Sullivan

Amount: \$73,000

National Science Foundation CBET – 0707583

Project period: 07/15/2007 – 06/30/2009

“NER: Rational Design of Biodegradable Nanoparticles for Gene Delivery”

Amount: \$115,200

National Science Foundation EEC – 0808662

Project period: 03/15/2008 – 03/14/2011

“Nature InSpired Engineering Research Experiences for Teachers – NISE-RET”

PI: K.E. Barner; Senior personnel: M.O. Sullivan

Amount: \$529,458 (Amount to Sullivan: \$4,250)

University of Delaware Research Fund

Project period: 12/01/2010 – 06/30/2012

“DNA-modified collagen scaffolds for improving acute wound repair”

Millicent O. Sullivan, University of Delaware

PI: M.O. Sullivan; Co-PI: K.L. Kiick
Amount: \$45,000 (Amount to Sullivan: \$22,500)

National Institutes of Standards and Technology 70NANB7H6178
Project period: 09/01/2007 – 08/31/2012
“Small Angle Neutron Scattering on Polymers and Complex Fluids”
PI: N.J. Wagner; Co-PIs: M.O. Sullivan, T.H. Epps III, K.L. Kiick, R.F. Lobo, D. Pochan, E.W. Kaler (Sullivan led one subproject)
Amount: \$7,108,585 (Amount to Sullivan: \$352,585)

National Institutes of Health (NCRR) 2P20RR017716-06A1
Project period: 09/15/2008 – 03/31/2013
“Molecular Design of Responsive Biomaterials” (COBRE)
PI: T. Beebe; Co-PIs: M.O. Sullivan, T.H. Epps, III, K.L. Kiick, X. Jia, D. Pochan, J. Schneider, Z. Zhuang, N. Zondlo, J. Fox, T. Polenova, S. Patel (Sullivan led one subproject)
Amount: \$10,500,000 (Amount to Sullivan: \$804,430)

National Science Foundation DMR – 0746458
Project period: 05/01/2008 – 04/30/2014
“CAREER: Histone-Mimetic Gold Nanoparticles as Self-activating and Tailorable Gene Delivery Scaffolds”
Amount: \$489,798

University of Delaware Research Fund
Project period: 12/01/2014 – 05/30/2016
“Multifunctional Collagen-mimetic Materials to Enhance Bone Repair After Fracture”
PI: A.M. Kloxin; Co-PI: M.O. Sullivan
Amount: \$45,000

Ongoing

National Science Foundation CBET – 1159466
Project period: 08/01/2012 – 07/31/2017
“Utilization of Collagen Remodeling Pathways to Control Gene Delivery”
PI: M.O. Sullivan; Co-PI: K.L. Kiick
Amount: \$420,199

National Institutes of Health (NIBIB) R01 EB017766
Project period: 05/01/2014 – 02/28/2018
“Histone Targeted Non-viral Growth Factor Gene Delivery to Enhance Bone Repair”
PI: M.O. Sullivan; Co-PI: T. Freeman
Amount: \$1,396,380

National Science Foundation DMR – 1507540
Project period: 08/15/2015 – 07/31/2018
“Design of RNA-triggered Disassembly Mechanisms in Multi-responsive Polymer Nanocapsules for Personalized Physiological Profiling and Tailored Therapeutics”
PI: M.O. Sullivan; Co-PIs: T.H. Epps, III, W. Chen
Amount: \$420,000

National Science Foundation CBET – 1510817
Project period: 08/01/2015 – 07/31/2018

Millicent O. Sullivan, University of Delaware

“Synthetic Multilayer Targeting DNA Devices for Detection of Specific Cancer Indicators and Programmed Assembly of Split yCD for Prodrug Activation”

PI: W. Chen; Co-PI: M.O. Sullivan

Amount: \$450,000

National Institutes of Health R01 (NIAMS/NIBIB) R01 AR067247

Project period: 04/01/2016 – 03/31/2020

“Collagen Turnover-stimulated Gene Delivery to Enhance Chronic Wound Repair”

PI: M.O. Sullivan; Co-PIs: K.L. Kiick, D. Margolis

Amount: \$1,368,068

Pending

National Science Foundation

“Collagen Turnover-stimulated Gene Delivery to Enhance Tissue Repair”

PI: M.O. Sullivan; Co-PI: K.L. Kiick

Amount: \$492,896

Recommended – pending award

National Science Foundation

“Design of Multi-Functional SplitCore HBV Capsids for Precisely Controlled Multi-siRNA Delivery in Cancer Therapeutics”

PI: W. Chen; Co-PI: M.O. Sullivan

Amount: \$555,188

Recommended – pending award

Department of Defense

“Targeting Heterogeneous Aggressive Breast Cancers: Using Smart DNA-Polymer Nanocapsules for Personalized Physiological Profiling and Tailored Therapeutics”

Lead PI: M.O. Sullivan; Partnering PI: K.L. van Golen; Co-PIs: W. Chen, T.H. Epps, III

Amount: \$641,451

RESEARCH ADVISING

Expected or actual graduation dates indicated

Graduate

Completed Ph.D. Theses (7)

Peter G. Millili, “Development of a Cancer Targeted Gene Therapy Delivery System,” May 2010 (Biotechnology IGERT Program) [with U.P. Naik] *now a Principal Engineer at Bristol-Myers Squibb

Kory M. Blocker, “Development of a Tailorable and Tunable Mechanism for Cell-Responsive Substrate-Mediated Gene Delivery,” August 2011 (Biotechnology IGERT Program) [with K.L. Kiick] *now a Scientist at Patheon Pharmaceuticals

Meghan J. Reilly, “Histone-Mimetic Polyplexes as Self-Activating and Tailorable Gene Delivery Vehicles: A Strategy for Enhancing Non-viral Transfection,” September 2011 (CBI Program)

John D. Larsen, “Non-viral Gene Delivery: an Inside-Out Approach,” November 2011 (Biotechnology IGERT Program) [with K.L. Kiick] *now a Research Manager at ABS Global

Abbygail A. Foster, “Improved Biomaterials for Gene Delivery: Polymer Carriers for Spatial and Temporal Control of Nucleic Acid Release,” April 2014

Elizabeth G. Kelley, "Synthesis, Solution Assembly, and Characterization of Amphiphilic Block Polymers," April 2014 [with T.H. Epps, III] *now an NRC Postdoctoral Research Fellow at NIST

Nikki Ross, "Improving Non-viral Gene Delivery with Histone-targeted Polyplexes: Uptake, Trafficking, and Nuclear Deposition," November 2015

Ongoing Ph.D. Theses (6)

Morgan Urello, "Utilization of Collagen Remodeling Pathways to Control Gene Delivery," May 2016 [with K.L. Kiick]

Chad Greco, "Controlled Release Polyplexes for mRNA Delivery," May 2017 [with T.H. Epps, III]

Erik Munsell, "Histone-targeted Growth Factor Gene Delivery for Tissue Repair," May 2017

Rashida Ruddock, "Design of RNA-triggered Disassembly Mechanisms in Multi-responsive Polymer Nanocapsules," May 2019 [with T.H. Epps, III]

Rachel Lieser, "Design of DNA-Based Devices for Split yCD Assembly and Prodrug Activation," May 2020 [with W. Chen]

Lucas Dunshee, "Collagen Turnover Stimulated Gene Delivery to Enhance Chronic Wound Repair," May 2020 [with K.L. Kiick]

Completed Master's Theses (1)

Ryan Murphy, "Chain Exchange in Aqueous Solutions of Amphiphilic Diblock Copolymer Micelles," July 2014 [with T.H. Epps, III]

Research Assistants (2)

Christina Marino (nee Russo), "Solution Self-assembly of Amphiphilic Macromolecules," 2007 – 2010 [with T.H. Epps, III] *now at Johnson & Johnson

Ingrid Spielman, "Collagen Mimetic Peptides for Collagen Modification," 2010 – 2012 [with K.L. Kiick] *now at Feinstein Institute for Medical Research

Ph.D. Research Rotations (8)

John D. Larsen – Biotechnology IGERT (January 2008)

Natalee Smith – CBI (February – March 2009)

Kyle Doolan – CBI (April – May 2010)

Morgan Urello – CBI (January 2012)

Christine Ott – CBI (November – December 2012)

Erik Munsell – CBI (March – April 2013)

Julia Petruzzo – CBI (March – April 2015)

Victoria Hunt – CBI (January 2016)

Thesis Committees: In-progress (19)

Emily Hartzell (W. Chen)

Kwame Heyward (A.S. Robinson and W. Chen)

Aaron Lee (N. Zondlo)

Millicent O. Sullivan, University of Delaware

Sergios Nicolaou (E.T. Papoutsakis)

Matthew Rehmann (A. Kloxin)

Jeffrey Swanberg (K.H. Lee)

Lisa Sawicki (A. Kloxin)

Olga Morozova (D. Colby)

Megan Smithmyer (A. Kloxin)

Rebecca Chen (W. Chen)

Elisa Ovadia (D. Colby and A. Kloxin)

Amber Hillenbrand (A. Kloxin)

Katherine Wiley (A. Kloxin)

Rachel Edelstein (E. Day)

Jilian Melamed (E. Day)

Paige LeValley (A. Kloxin)

Eden Ford (A. Kloxin)

Michael Gallucci (K.H. Lee)

Caitlyn Wood (C.J. Roberts)

Thesis Committees: Completed (14)

Armin Opitz (2008, N.J. Wagner)

Frances Spinelli (E.M. Furst and K.L. Kiick) (did not graduate)

Travis Larsen (2008, E.M. Furst)

Erik Welf (2009, B. Ogunnaike and U. Naik)

Michelle O'Malley (2009, A.S. Robinson)

David Johnson (2010, U. Naik and A. Beris)

Ohm Divyam-Krishna (2010, K.L. Kiick)

Kelly Schultz (2011, E.M. Furst)

Heather Unger (2011, K. van Golen)

Holt Bui (2012, T. Beebe)

Sameer Sathaye (2013, D.J. Pochan)

Jomnarong Lertsuwan (2014, R. Sikes)

Diane Wuest (2014, K.H. Lee)

Vinu Krishnan (2015, X. Jia and A. Rajasekharan)

Fellows and Visiting Scholars Postdoctoral Research (7)

Raghunath Roy, "Peptide-containing Block Copolymer Amphiphiles for Targeted Drug Delivery," 2009 – 2012 [with T.H. Epps, III] *now at Dow

Thomas Smart, "Neutron Scattering of Solution Assembly in Amphiphilic Block Copolymer Systems," 2010 – 2012 [with T.H. Epps, III] *now at Eastman Chemical

Vijay Taori, "Peptide-containing Block Copolymer Amphiphiles for Targeted Drug Delivery," 2010 – 2011 [with T.H. Epps, III] *now a postdoctoral researcher at University of Stuttgart

Jonathan Seppala, "Neutron Scattering of Solution Assembly in Amphiphilic Block Copolymer Systems," 2012 [with T.H. Epps, III] *now at NIST

Matthew Green, "Peptide-containing Block Copolymer Amphiphiles for Targeted Drug Delivery," 2012 – 2014 [with T.H. Epps, III] *now an Assistant Professor at Arizona State University

Bing Fang, "Histone Targeted Non-viral Growth Factor Gene Delivery to Enhance Bone Repair," 2015 – present

Tiffany Suekama, "Design of Multi-responsive Polymer Assemblies for Applications in Drug Delivery," 2015 – present [with T.H. Epps, III]

Visiting Scholars (1)

Kerstin Wiss, Ph.D. (visited during Ph.D. candidacy from Institute of Organic Chemistry, Johannes Gutenberg University of Mainz), August – November, 2008 [with K.L. Kiick]

Undergraduate

Senior Theses/Projects (9)

Vincent Buerger (senior project), "Design of Polymer Complexes for Controlled DNA Delivery," May 2007

Joshua A. Selekman (senior thesis), "Developing Nanoparticles for Controlled DNA Release," May 2008 *now at Bristol-Myers Squibb

Stephanie L. Myrick (senior thesis), "Design of a Cell-responsive DePEGylation DNA Delivery System," May 2009 *now a Resident Physician at Duke University Medical Center

Tejal U. Naik (senior thesis), "Development of a Peptide Nucleic Acid-Based siRNA Delivery System," May 2011 *now at the Wyss Institute for Biologically Inspired Engineering

Jennifer Devaney (senior project), "Formulation of a Customizable Scaffold for Targeted Non-viral Gene Delivery," May 2011 *now at KBI Biopharma

Robert Pagels (senior project), "Solution Self-Assembly of Amphiphilic Macromolecules," May 2012 [with T.H. Epps, III] *now a Ph.D. Candidate, Department of Chemical Engineering, Princeton University

Rachel Lehr (senior project), "New Synthetic Approaches for Peptide-containing Copolymers," May 2014 *now at Schneider Electric

Rebekah Dumm (senior thesis), "Incorporation of Non-Viral Gene Delivery into Resilin-Based Hydrogels for Mechanically Demanding Tissue Engineering Applications" May 2015 [with K.L. Kiick] *now a Ph.D. Candidate, Department of Biomedical Engineering, Duke University

Millicent O. Sullivan, University of Delaware

Daphne Collias (senior project), "Histone H3 Polyplex Uptake in Inflammatory Breast Cancer Cells," B.S. expected May 2016

Other Undergraduate Research (11)

Sarah Hann (B.S. 2012); 2011 – 2012 [with T.H. Epps, III] *now a Ph.D. Candidate, Department of Chemical and Biomolecular Engineering, University of Pennsylvania

Kameron Conforti (B.S. 2013); Summer 2010 (*2010 Russell Award*) *now a Ph.D. Candidate, Department of Chemical Engineering, MIT

Sean Mack (B.S. 2014); Summer 2012 *now a Ph.D. Candidate, Department of Chemical Engineering, University of Maryland

Christine Muzzelo (B.S. 2014); Summer 2013 *now a Ph.D. candidate, College of Engineering, Villanova University

Alexander Sadat (B.S. expected May 2016); Summer 2012

Emily Harvan (B.S. expected May 2016), Summer 2014

Seth Brynien (B.S. expected May 2016), 2015 – 2016

Lacey Perdue (B.S. expected May 2016), 2014 – present

Jason Andrechak (B.S. expected May 2017), 2015 – present [with T.H. Epps, III]

Victoria Muir (B.S. expected May 2018), 2015 – present [with T.H. Epps, III]

Connor Shannon (B.S. expected May 2018), 2015 – present

Research Experiences for Undergraduates (3)

YingYu (Daniel) Gao (Department of Chemical and Biological Engineering, Princeton University; BS 2012) – Summer 2010 and Summer 2011 REU *now an M.S. Candidate, Department of Chemical and Biomolecular Engineering, Cornell University

Lauren Keiser (Department of Chemical and Biochemical Engineering, Colorado School of Mines; BS 2012) – Summer 2010 NISE-REU *now a Ph.D. Candidate, Department of Chemical and Biomolecular Engineering, Rice University

Yanni Souroutzidis (Department of Chemical Engineering, Purdue University; BS 2012) – Summer 2010 NISE-REU *now at Merck & Co and an M.B.A./M.S. Candidate, Department of Bioengineering, Stanford University

Senior Thesis/Project Committees (10)

Michael Allerton (X. Jia; May 2008)

Rebecca Pagels (C. Roberts; May 2009)

Amy Chevalier (A. Robinson; May 2011)

Suneil Seetharam (S. Inamdar; May 2011)

Michael Dummeldinger (A. Kloxin; May 2014)

John Fillenwarth (A. Beris; May 2016)

Laurne Terasaki (J. Schwartz; May 2016)

Jenna Wilson (R. Dyer; May 2016)

Millicent O. Sullivan, University of Delaware

Laura Mumper (C. Kloxin; May 2017)

Ashwin Monian (M. Antoniewicz; May 2017)

High School Students

1. Emily Malafronti – Project SEED intern, Summer 2014
2. Megan Huber – Project SEED intern, Summer 2015
3. Qirun Li – Project SEED intern, Summer 2016

Research Awards by Students, Fellows, and Scholars

1. Peter G. Millili – Merck Fellowship for an externship at Merck Research Laboratories in West Point, PA, April – September 2008
2. Peter G. Millili – Travel award, Society for Biological Engineering 4th International Conference on Bioengineering and Nanotechnology, University College of Dublin, Dublin, Ireland, July 2008
3. Stephanie L. Myrick – 1st prize award, 11th Annual Undergraduate Research Symposium in the Chemical and Biological Sciences, University of Maryland, Baltimore County, Baltimore, MD, October 2008
4. Stephanie L. Myrick – Honorable mention, 13th Annual ASBMB Undergraduate Student Research Poster Competition, 2009 ASBMB Annual Meeting, Ernest N. Morial Convention Center, New Orleans, LA, April 2009
5. Peter G. Millili – Graduate division winner, International Society of Pharmaceutical Engineers Delaware Valley Poster Competition, Widener University, West Chester, PA, April 2009
6. Peter G. Millili – Second place winner of the Biochemical Engineering Student Poster Competition, Biochemical Engineering XVI Meeting, Sheraton Burlington Hotel and Conference Center, Burlington, VT, July 2009
7. Tejal U. Naik – 1st prize award, 12th Annual Undergraduate Research Symposium in the Chemical and Biological Sciences, University of Maryland, Baltimore County, Baltimore, MD, October 2009
8. Abbygail Palmer – National Organization of Black Chemists and Chemical Engineers (NOBCCChE) P&G Graduate Fellowship – October 2009
9. Meghan J. Reilly – Honorable mention for the Society for Biomaterials STAR award, March 2010
10. Tejal U. Naik – ASBMB 2010 Thematic Best Poster in Chemical Biology and Drug Discovery, ASBMB Annual Meeting, Anaheim, CA, April 2010
11. Elizabeth G. Kelley – National Defense Science and Engineering (NDSEG) Graduate Fellowship – 2010
12. Thomas P. Smart – Young Scientist Travel Award, American Conference on Neutron Scattering, Canadian Neutron Beam Centre, Ottawa, Ontario, Canada, June 2010
13. Elizabeth G. Kelley – ACS POLY Travel Award, ACS Spring National Meeting & Exposition, Anaheim Convention Center, Anaheim, CA, March 2011

14. Tejal U. Naik – ASBMB 2011 Thematic Best Poster in RNA, ASBMB Annual Meeting, Washington, D.C., April 2011
15. Elizabeth G. Kelley – *Journal of Materials Chemistry* Poster Award, Polymers Gordon Research Conference, Mount Holyoke College, South Hadley, MA, June 2011
16. Elizabeth G. Kelley – Excellence in Graduate Polymer Research Symposium, ACS Spring National Meeting & Exposition, San Diego Convention Center, San Diego, CA, March 2012
17. Sarah D. Hann – Undergraduate Research in Polymer Science Award Symposium, ACS Spring National Meeting & Exposition, San Diego Convention Center, San Diego, CA, March 2012
18. Elizabeth G. Kelley – Invited participant at the 63rd Lindau Nobel Laureate Meeting, Lindau, Germany, June 2013
19. Nikki L. Ross – Travel Award, ASGCT Annual Meeting, Hyatt Regency New Orleans, New Orleans, LA, May 2014
20. Abbygail Foster – Stanford Cardiovascular Institute Fellowship, July 2015
21. Abbygail Foster – Invited participant at the NextProf Workshop, University of Michigan College of Engineering, Ann Arbor, MI, September – October 2015
22. Abbygail Foster – Invited participant at the Third Arab-American Frontiers of Science, Engineering, and Medicine Symposium, December 2015
23. Victoria Muir – Second place in the Undergraduate Research in Polymer Science Symposium, ACS Spring National Meeting & Exposition, San Diego Convention Center, San Diego, CA, March 2016
24. Victoria Muir – 2016 Goldwater Scholarship

TEACHING

Instructor (Chemical Engineering, University of Delaware)

CHEG342 [70], Heat and Mass Transfer, co-taught with W. Chen, Spring 2016

CHEG648 [18], Biomaterials for Drug Delivery, Fall 2015

CHEG445 [11], Senior Laboratory Study Abroad, co-taught with S. Sandler, Winter 2015

CHEG667 [24], Biomaterials for Drug and Gene Delivery, Fall 2014

CHEG112 [159], Introduction to Chemical Engineering, co-taught with W. Chen, Spring 2013

CHEG667 [23], Biomaterials for Drug and Gene Delivery, Fall 2012

CHEG112 [138], Introduction to Chemical Engineering, co-taught with W. Chen and C.J. Roberts, Spring 2012

CHEG667 [23], Biomaterials for Drug and Gene Delivery, Fall 2011

CHEG112 [130], Introduction to Chemical Engineering, co-taught with W. Chen, Spring 2011

CHEG667 [22], Biomaterials for Drug and Gene Delivery, co-taught with S.K. Bhatia, Fall 2010

CHEG112 [96], Introduction to Chemical Engineering, co-taught with A.M. Lenhoff, Spring 2010

Administered leave (maternity), Fall 2009

Millicent O. Sullivan, University of Delaware

CHEG667 [12], Biomaterials for Drug and Gene Delivery, Spring 2009

CHEG620 [25], Biochemical Engineering, Fall 2008

CHEG620 [35], Biochemical Engineering, Fall 2007

CHEG650 [29], Biomedical Engineering, Spring 2007

CHEG620 [39], Biochemical Engineering, co-taught with A.S. Robinson, Fall 2006

Graduate Teaching Assistant (Chemical Engineering, Carnegie Mellon University)

Introduction to Chemical Engineering (2 semesters)

Introduction to Biomedical Engineering (1 semester)

PROFESSIONAL SERVICE

Editorial Boards

Scientific Reports (Nature Publishing Group)

2016 – 2018

Panel and Proposal Review

National Science Foundation

Engineering Directorate

Division of Chemical, Bioengineering, and Transport Systems (CBET)

2008 – present Panel reviewer

Mathematics and Physical Sciences Directorate

Division of Materials Research (DMR)

2009 – present Panel reviewer

Division of Chemistry (CHE)

2010 Mail reviewer

National Institutes of Health, Center for Scientific Review

Gene and Drug Delivery (GDD) Study Section

2015 – present *Ad hoc* member

Bioengineering, Technology, and Surgical Sciences (BTSS) Study Section

2016 – present *Ad hoc* member

Professional Societies

American Institute of Chemical Engineers (AIChE)

1994 – present Member

2007 – present Session organizer, chair/co-chair, and abstract review

Society for Biomaterials (SFB)

2008 – 2011 Member

American Chemical Society (ACS)

2008 – present Member

Society for Biological Engineering (SBE)

2008 – present Member

2016 – present Session organizer, chair/co-chair, and abstract review

American Society of Gene and Cell Therapy (ASGCT)

2009 – present Member

2010 – 2019 Chemical Gene & Cell Therapy Committee

Conference Organization

Organizing Committee, Frontiers at the Chemistry-Biology Interface Symposium, 2009 – 2017

Session Organization

1. Co-chair, "Micro- and Nanodevices for Targeted Therapeutics," AIChE Annual Meeting, Salt Palace Convention Center, Salt Lake City, Utah, November 4 – 9, 2007.
2. Co-chair, "Micro- and Nanodevices for Targeted Therapeutics," AIChE Annual Meeting, Pennsylvania Convention Center, Philadelphia, Pennsylvania, November 16 – 21, 2008.
3. Co-chair, "Gene Delivery I," AIChE Annual Meeting, Pennsylvania Convention Center, Philadelphia, Pennsylvania, November 16 – 21, 2008.
4. Co-chair, "Gene Delivery II," AIChE Annual Meeting, Pennsylvania Convention Center, Philadelphia, Pennsylvania, November 16 – 21, 2008.
5. Chair/Organizer, "Presentation of Biochemical Products in Medicine: the Cell-Material Interface," Biochemical Engineering XVI Meeting, Sheraton Burlington Hotel and Conference Center, Burlington, Vermont, July 5 – 9, 2009.
6. Chair, "Micro- and Nanodevices for Targeted Therapeutics," AIChE Annual Meeting, Gaylord Opryland Hotel, Nashville, Tennessee, November 8 – 13, 2009.
7. Co-chair, "Gene Delivery I," AIChE Annual Meeting, Gaylord Opryland Hotel, Nashville, Tennessee, November 8 – 13, 2009.
8. Co-chair, "Gene Delivery II," AIChE Annual Meeting, Gaylord Opryland Hotel, Nashville, Tennessee, November 8 – 13, 2009.
9. Chair/Organizer, "Engineering Therapeutic Delivery from Biomaterial Scaffolds for Cell Therapy," SFB Annual Meeting, Washington State Convention Center, Seattle, Washington, April 21 – 24, 2010.
10. Reviewer, "Chemical and Molecular Conjugates," ASGCT 13th Annual Meeting, Marriott Wardman Park, Washington, D.C., May 19 – 22, 2010.
11. Chair, "Micro- and Nanodevices for Targeted Therapeutics," AIChE Annual Meeting, Salt Palace Convention Center, Salt Lake City, Utah, November 7 – 12, 2010.
12. Chair, "Nucleic Acid Delivery I," AIChE Annual Meeting, Salt Palace Convention Center, Salt Lake City, Utah, November 7 – 12, 2010.
13. Co-chair, "Nucleic Acid Delivery II," AIChE Annual Meeting, Salt Palace Convention Center, Salt Lake City, Utah, November 7 – 12, 2010.
14. Chair/Organizer, "Engineering Therapeutic Delivery from Biomaterial Scaffolds for Cell Therapy," SFB Annual Meeting, Disney's Contemporary Resort, Orlando, Florida, April 13 – 16, 2011.
15. Co-chair, "Nucleic Acid Delivery," BMES Annual Meeting, Connecticut Convention Center, Hartford, Connecticut, October 12 – 15, 2011.
16. Chair, "Nucleic Acid Delivery I," AIChE Annual Meeting, Minneapolis Convention Center, Minneapolis, Minnesota, October 16 – 21, 2011.
17. Chair, "Nucleic Acid Delivery II," AIChE Annual Meeting, Minneapolis Convention Center, Minneapolis, Minnesota, October 16 – 21, 2011.
18. Chair, "Chemical and Molecular Conjugates," ASGCT 15th Annual Meeting, Pennsylvania Convention Center, Philadelphia, Pennsylvania, May 15 – 19, 2012.
19. Chair, "Nucleic Acid Delivery," AIChE Annual Meeting, Pittsburgh Convention Center, Pittsburgh, Pennsylvania, October 28 – November 2, 2012.

20. Session Moderator, "Bottom-up Design of the Next Generation of Biomaterials," ACS Spring National Meeting & Exposition, New Orleans Convention Center, New Orleans, Louisiana, April 7 – 11, 2013.
21. Chair/Organizer, "Drug Delivery," Northeast Bioengineering Conference, Northeastern University, Boston, Massachusetts, April 25 – 27, 2014.
22. Chair/Organizer, "Topical Review: Approaches to Achieve Persistent Gene Expression," ASGCT 17th Annual Meeting, Marriott Wardman Park, Washington, D.C., May 21-24, 2014.
23. Organizer, "Building Smarter Nanoparticles and Nanomaterials for Nucleic Acid Delivery," ASGCT 17th Annual Meeting, Marriott Wardman Park, Washington, D.C., May 21-24, 2014.
24. Reviewer, "Gene Targeting and Gene Corrections," ASGCT 17th Annual Meeting, Marriott Wardman Park, Washington, D.C., May 20 – 24, 2014.
25. Chair/Organizer, "Nanomaterials for Nucleic Acid Delivery," ASGCT 18th Annual Meeting, New Orleans, LA, May 13-16, 2015.
26. Chair/Organizer, "Educational Symposium – Chemical Gene & Cell Therapy," ASGCT 18th Annual Meeting, New Orleans, LA, May 13-16, 2015.
27. Organizer, "Scientific Symposium – Chemical Gene & Cell Therapy," ASGCT 18th Annual Meeting, New Orleans, LA, May 13-16, 2015
28. Chair, "Biomaterials: Faculty Candidates," AIChE Annual Meeting, Salt Palace Convention Center, Salt Lake City, UT, November 8-13, 2015
29. Chair/Organizer, "Educational Symposium – Chemical Gene & Cell Therapy," ASGCT 19th Annual Meeting, Washington, D.C., May 4-7, 2016
30. Organizer, "Scientific Symposium – Chemical Gene & Cell Therapy," ASGCT 19th Annual Meeting, Washington, D.C., May 4-7, 2016
31. Co-chair, "Gene and Drug Delivery," AIChE/SBE Bioengineering & Translational Medicine Conference, Hilton San Francisco Union Square, San Francisco, CA, November 12-13, 2016
32. Chair, "Biomaterials" AIChE Annual Meeting, Hilton San Francisco Union Square, San Francisco, CA, November 13-18, 2016

Journal Review

ACS Publications

ACS Nano

Bioconjugate Chemistry

Biomacromolecules

Biotechnology Progress

Chemistry of Materials

Langmuir

Molecular Pharmaceutics

ACS Biomaterials Science & Engineering

ACS Macro Letters

Cambridge University Press

MRS Proceedings

Elsevier

Advanced Drug Delivery Reviews

Biomaterials

Royal Society of Chemistry Publishing

Chemical Communications

Soft Matter

Journal of Materials Chemistry B

Wiley-Blackwell

Biotechnology and Bioengineering

Microscopy Research and Technique

Wound Repair and Regeneration

Other

Proceedings of the National Academy of Sciences

BioTechniques

Current Eye Research

Journal of Nanobiotechnology

Molecular Therapy

UNIVERSITY, COLLEGE, AND DEPARTMENTAL SERVICE

University

2010 – Advisor, Honors New Student Orientation
2008 – 2013 University Biosafety Committee
2008 – Chemistry-Biology Interface (CBI) Steering Committee
2015 Nanofabrication Search Committee
2015 – Senior Thesis Third Reader

College

2014 – Faculty Advisor, Project SEED
2014 – International Society for Pharmaceutical Engineering (ISPE) faculty advisor
2008 – 2014 Society for Women Engineers (SWE) faculty advisor
2008 – 2010 Faculty Advisor, NSF Research Experiences for Undergraduates (REU) Site
2007 – 2010 Faculty Advisor and Co-organizer, NSF Research Experiences for Teachers (RET) Site

Department

2014 – Graduate Recruiting Committee
2014 – Gore Chair Search Committee
2014 Heritage Committee
2012 Chair Search Committee
2011 Speaker, Departmental Recruiting YouTube feature
2010 – Ad hoc Diversity Committee
2008 – 2010 Facilities and Safety Committee
2008 Organizer/Speaker, Faculty Application Workshop
2007 – Undergraduate Advisor
2007 – 2008 Department Seminar Coordinator
2007 – 2008 Faculty Search Committee
2007 Laboratory Coordinator Search Committee
2007 Panelist, Newark High School Outreach

Other Outreach and External Service

2015 Speaker, Forum Seminar Series, Kendal-Crosslands Retirement Community
2015 Career Speaker, Wilmington Friends Lower School
2015 Career Panelist, Alpha Omega Epsilon Professional Sorority
2015 Research Feature, Argonne National Laboratory - Advanced Photon Source
May Newsletter
2014 Research Feature, WHYY/National Public Radio Newsworks
2014 Research Feature (2014, November), Erik Munsell, Science Rocks,
<http://www.sciencerocksradio.com/>
2014 Research Feature (2014, April), Morgan Urello, Science Rocks,
<http://www.sciencerocksradio.com/>
2007 Speaker, "High School Chemistry Teacher's Day"