

## *Curriculum Vitae*

### **XINQIAO JIA, Ph.D.**

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Department of Biomedical Engineering  
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#### **EDUCATION**

- 1995        B.S.; Applied Chemistry  
              Institution: Fudan University, Shanghai, P. R. China
- 1998        M.S.; Polymer Chemistry and Physics  
              Institution: Fudan University, Shanghai, P. R. China  
              Dissertation Title: Copolymerization of Maleimide with  $\alpha$ -Substituted Acrylates  
              Advisor: Prof. Junlian Huang
- 2002        Ph.D.; Polymer Science and Engineering  
              Institution: University of Massachusetts, Amherst, MA  
              Dissertation Title: Chemical Modification of Solid Surfaces and Interfaces and  
              Template-Assisted Fabrication of Surface Nanostructures  
              Advisor: Prof. Thomas J. McCarthy

#### **RESEARCH INTERESTS**

The development of polymeric nano- and micro-particles with varying diameter and mesh size, addressable functional groups and controlled payload release; the synthesis of protein-mimetic multiblock hybrid copolymers with robust mechanical properties, unique assembly characteristics and defined biological functions; the bioorthogonal construction of complex and hierarchical hydrogel networks that not only recapitulate critical features of natural extracellular matrices (ECM), but also exhibit tunability and reproducibility.

The use of synthetic extracellular matrices (sECM) for the studies of cell differentiation and cell signaling; the creation of functional tissues *via* the strategic combination of viable cells, biomimetic matrices, biologically relevant mechanical stimulations and spatially and temporally presented morphogenic signals; the application of these strategies in the engineering of healthy, replacement tissues such as cartilage, vocal fold and salivary gland, as well as pathological tissues, such as tumor tissues.

#### **ACADEMIC APPOINTMENTS**

- 2005–        Assistant Professor (tenure track)  
              Department of Materials Science and Engineering, University of Delaware
- 2005–        Affiliated Faculty  
              Delaware Biotechnology Institute, Newark, DE
- 2006–        Affiliated Faculty  
              Center for Translational Cancer Research (CTCR), University of Delaware

- 2010– Director, Graduate Program  
Department of Materials Science and Engineering, University of Delaware
- 2011– Associate Professor  
Department of Materials Science and Engineering, University of Delaware
- 2011–2013 Director, Graduate Program  
Biomedical Engineering Program, University of Delaware
- 2011– Associate Professor  
Department of Biomedical Engineering, University of Delaware
- 2011– Associate Professor  
Department of Biological Sciences, University of Delaware

### **OTHER PROFESSIONAL POSITIONS**

- 1995–1998 Research Assistant, Department of Macromolecular Science  
Fudan University, Shanghai, P. R. China
- 1998–2002 Research Assistant, Department of Polymer Science and Engineering University of  
Massachusetts, Amherst, MA
- 2002–2005 Postdoctoral Research Associate, Department of Chemical Engineering,  
Massachusetts Institute of Technology, Cambridge, MA  
Postdoctoral Mentors: Robert Langer and Steven Zeitels

### **ACADEMIC HONORS AND LEADERSHIP**

#### ***Faculty***

- 2006, 07, 11 University of Delaware Research Foundation Award
- 2007 National Science Foundation CAREER Award
- 2010 Outstanding Junior Faculty of Engineering, University of Delaware
- 2010 DuPont Young Professor Award
- 2011 Academic Award, Delaware BioScience Association
- 2012 Thematic Program Chair, 244<sup>th</sup> American Chemical Society National Meeting,  
“Materials for Health and Medicine”
- 2014 Invited Participation, National Cancer Institute (NCI) Strategic Workshop,  
“Biomimetic Tissue Engineered Systems for Advancing Cancer Research”
- 2015– Technical Program Co-Chair, Division of Polymeric Materials Science and  
Engineering (PMSE), American Chemical Society

#### ***Student***

- 1998–1999 Solutia Fellow, University of Massachusetts Amherst
- 2000–2001 Graduate School Fellowship, University of Massachusetts Amherst

### **PUBLICATIONS (\* Denotes corresponding author(s))**

1. Jiang, J.; **Jia, X.**; Pang, Y.; Huang, J.\* “Alternating Copolymerization of Maleimide and Ethyl Atropate without Initiator” *J. Macromol. Sci. Pure*, **1998**, A35, 781-792.

2. **Jia, X.**; Pang, Y.; Huang, J. \* “Copolymerization of Ethyl  $\alpha$ -(Hydroxymethyl)acrylate with Maleimide and Characterization of the Resulting Copolymer” *J. Polym. Sci. A1*, **1998**, *36*, 1291-1299.
3. **Jia, X.**; McCarthy, T. J. \* “Buried Interface Modification Using Supercritical Carbon Dioxide” *Langmuir*, **2002**, *18*, 683-687.
4. Ming, W. \*; Tian, M.; van de Grampel, R. D.; Melis, F.; **Jia, X.**; Loos, J.; van der Linde, R. “Low Surface Energy Polymeric Films from Solventless Liquid Oligoesters and Partially Fluorinated Isocyanates” *Macromolecules*, **2002**, *35*, 6920-6929.
5. **Jia, X.**; McCarthy, T. J. \* “Controlled Growth of Silicon Dioxide from “Nanoholes” in Silicon-Supported Tris(trimethylsiloxy)silyl Monolayers: Rational Control of Surface Roughness at the Nanometer Length Scale” *Langmuir*, **2003**, *19*, 2449-2457.
6. Kim, H. C.; **Jia, X.**; Stafford C. M.; Kim, D. H.; McCarthy, T. J.; Tuominen, M.; Hawker, C. J.; Russell, T. P. \* “A Route to Nanoscopic SiO<sub>2</sub> Posts via Block Copolymer Templates” *Adv. Mater.*, **2001**, *13*, 795-797.
7. Kim, D. H.; **Jia, X.**; Lin, Z.; Guarini, K.W.; Russell, T. P. \* “Growth of Silicon Oxide in Thin Film Block Copolymer Scaffolds” *Adv. Mater.*, **2004**, *16*, 702-706.
8. **Jia, X.**; Colombo, G.; Padera, R.; Langer, R.; Kohane, D. S. \* “Prolongation of Sciatic Nerve Blockade by in Situ Cross-Linked Hyaluronic Acid” *Biomaterials*, **2004**, *25*, 4797-4804.
9. **Jia, X.**; Burdick, J. A.; Kobler, J.; Clifton, R. J.; Rosowski, J. J.; Zeitels, S. M.; Langer, R. \* “Synthesis and Characterization of in Situ Cross-Linkable Hyaluronic Acid-Based Hydrogels with Potential Application for Vocal Fold Regeneration” *Macromolecules*, **2004**, *37*, 3239-3248.
10. Burdick, J. A.; Chung, C.; **Jia, X.**; Randolph, M. A.; Langer, R. \* “Controlled Degradation and Mechanical Behavior of Photopolymerized Hyaluronic Acid Networks” *Biomacromolecules*, **2005**, *6*, 386-391.
11. **Jia, X.** \*; Herrera-Alonso, M.; McCarthy T. J. “Nylon Surface Modification, Part 1: Targeting the Amide Groups for Selective Introduction of Reactive Functionalities” *Polymer*, **2006**, *47*, 4916-4924.
12. Herrera-Alonso, M.; McCarthy T. J.; **Jia, X.** \* “Nylon Surface Modification: 2, Nylon-Supported Composite Films” *Langmuir*, **2006**, *22*, 1646-1651.
13. **Jia, X.** \*; Yeo, Y.; Clifton, R. J.; Jiao, T.; Kohane, D. S.; Kobler, J. B.; Zeitels, S. M.; Langer, R. “Hyaluronic Acid-Based Microgels and Microgel Networks for Vocal Fold Regeneration” *Biomacromolecules*, **2006**, *7*, 3336-3344.
14. Goldberg, M.; Langer, R.; **Jia, X.** \* “Nanostructured Materials for Applications in Drug Delivery and Tissue Engineering” *J. Biomat. Sci.-Polym. E.*, **2007**, *18*, 241-268.
15. Ni, C. \*; Li, X.; Chen, Z.; Li, H.-Y. H.; **Jia, X.**; Shah, I.; Xiao, J. Q. “Oriented Polycrystalline Mesoporous CeO<sub>2</sub> with Enhanced Pore Integrity” *Micropor. Mesopor. Mat.*, **2008**, *115*, 247–252.

16. Sahiner, N.; Jha, A. K.; Nguyen, D.; **Jia, X.**\* “Fabrication and Characterization of Cross-Linkable Hydrogel Particles Based on Hyaluronic Acid: Potential Application in Vocal Fold Regeneration” *J. Biomat. Sci.- Polym. E.*, **2008**, *19*, 223-243.
17. Jha, A. K.; Hule, R. A.; Jiao, T.; Teller, S. S.; Clifton, R. J.; Duncan, R. L.; Pochan, D. J.; **Jia, X.**\* “Structural Analysis and Mechanical Characterization of Hyaluronic Acid-Based Doubly Cross-Linked Networks” *Macromolecules*, **2009**, *42*, 537-546.
18. Jiao, T.\*; Farran, A.; **Jia, X.**; Clifton, R. J. “High Frequency Measurements of Viscoelastic Properties of Hydrogels for Vocal Fold Regeneration” *Exp. Mech.*, **2009**, *49*, 235-246.
19. **Jia, X.**\*; Kiick, K. L.\* "Hybrid Multicomponent Hydrogels for Tissue Engineering" *Macromol. Biosci.*, **2009**, *9*, 140-156.
20. Grieshaber, S. E.; Farran, A. J. E.; Lin-Gibson, S.; Kiick, K. L.\*; **Jia, X.**\* “Synthesis and Characterization of Elastin-Mimetic Hybrid Polymers with Multiblock, Alternating Molecular Architecture and Elastomeric Properties” *Macromolecules*, **2009**, *42*, 2532–2541.
21. Gurski, L. A.; Jha, A. K.; Zhang, C.; **Jia, X.**; Farach-Carson, M. C.\* “Hyaluronic Acid Hydrogel as 3D Matrices for in vitro Evaluation of Chemotherapeutic Drugs Using Poorly Adherent Cells” *Biomaterials*, **2009**, *30*, 6076-6085.
22. Pradhan, S.; Zhang, C.; **Jia, X.**; Carson, D. D.; Witt, R.; Farach-Carson, M. C.\* “Perlecan Domain IV Peptide Stimulates Salivary Gland Cell Assembly *in vitro*” *Tissue Eng Part A.*, **2009**, *15*, 3309-3320.
23. Jha, A. K.; Yang, W.; Kirn-Safarn, C. B.; Farach-Carson, M. C.; **Jia, X.**\* “Perlecan Domain I-Conjugated, Hyaluronic Acid-Based Hydrogel Particles for Enhanced Chondrogenic Differentiation via BMP-2 Release” *Biomaterials*, **2009**, *30*, 6964-6974.
24. Farran, A. J. E.; Teller, S. S.; Jha, A. K.; Jiao, T.; Hule, R. A.; Clifton, R. J.; Pochan, D. J.; Duncan, R. L.; **Jia, X.**\* “Effects of Matrix Composition, Microstructure and Viscoelasticity on the Behaviors of Vocal Fold Fibroblasts Cultured in Three-Dimensional Hydrogel Networks” *Tissue Eng Part A*, **2010**, *16*, 1247-1261.
25. Gurski, L. A.; Petrelli, N. J.; **Jia, X.**; Farach-Carson, M. C.\* “3D Matrices for Anti-Cancer Drug Testing and Development” *Oncology Issues*, **2010**, *25*, 20-25.
26. Pradhan, S.; Liu, C.; Zhang, C.; **Jia, X.**; Farach-Carson, M. C.; Witt, R. L.\* “Lumen Formation in Three-Dimensional Cultures of Salivary Acinar Cells” *Otolaryngol. Head Neck Surg.*, **2010**, *142*, 191-195.
27. Luo, Y.\*; Kobler, J. B.; Heaton, J. T.; **Jia, X.**; Zeitels, S. M.; Langer, R. “Injectable Hyaluronic Acid-Dextran Hydrogels and Effects of Implantation in Ferret Vocal Fold” *J. Biomed. Mater. Res. B*, **2010**, *93B*, 386-393.
28. Jha, A. K.; Malik, M. S.; Farach-Carson, M. C.; Duncan, R. L.; **Jia, X.**\* “Hierarchically Structured, Hyaluronic Acid-Based Hydrogel Matrices *via* the Covalent Integration of Microgels into Macroscopic Networks” *Soft Matter*, **2010**, *6*, 5045-5055.
29. Xiao, L.; Liu, C.; Zhu, J.; Pochan, D. J.; **Jia, X.**\* “Hybrid, Elastomeric Hydrogels Crosslinked by Multifunctional Block Copolymer Micelles” *Soft Matter*, **2010**, *6*, 5293-5297.

30. Grieshaber, S. E.; Nie, T.; Yan, C.; Zhong, S.; Teller, S. S.; Clifton, R. J.; Pochan, D. J.; Kiick, K. L.\*; **Jia, X.\*** "Assembly Properties of Alanine-Rich, Lysine-Containing Peptide and the Formation of Peptide/Polymer Hybrid Hydrogels" *Macromol. Chem. Phys.*, **2011**, *212*, 229-239.
31. Jha, A. K.; Xu, X.; Duncan, R. L.; **Jia, X.\*** "Controlling the Adhesion and Differentiation of Mesenchymal Stem Cells Using Hyaluronic Acid-based, Doubly Crosslinked Networks" *Biomaterials*, **2011**, *32*, 2466-2478.
32. Wang, X.; Gurski, L. A.; Zhong, S.; Xu, X.; Pochan, D. J.; Farach-Carson, M. C.; **Jia, X.\*** "Amphiphilic Block Co-polyesters Bearing Pendant Cyclic Ketal Groups as Nanocarriers for Controlled Release of Camptothecin" *J. Biomat. Sci.-Polym. E*, **2011**, *22*, 1275-1298.
33. Greene, A. C.; Zhu, J.; Pochan, D. J.; **Jia, X.\***; Kiick, K. L.\* "Poly(Acrylic Acid-*b*-Styrene) Amphiphilic Multiblock Copolymers as Building Blocks for the Assembly of Discrete Nanoparticles" *Macromolecules*, **2011**, *44*, 1942-1951.
34. Li, L.; Teller, S.; Clifton, R. J.; **Jia, X.**; Kiick, K. L.\* "Tunable Mechanical Stability and Deformation Response of a Resilin-based Elastomer" *Biomacromolecules*, **2011**, *12*, 2302-2310.
35. Xu, X.; Jha, A. K.; Duncan, R. L.; **Jia, X.\*** "Heparin-Decorated, Hyaluronic Acid-Based Hydrogel Particles for the Controlled Release of Bone Morphogenetic Protein 2" *Acta Biomater*, **2011**, *7*, 3050-3059.
36. Krishna, O. D.; Jha, A. K.; **Jia, X.\***; Kiick, K. L.\* "Integrin-Mediated Adhesion and Proliferation of Human MSC Elicited by a Hydroxyproline-Lacking, Collagen-like Peptide" *Biomaterials*, **2011**, *32*, 6412-6424.
37. Tong, Z.; Sant, S.; Khademhosseini, A.\*; **Jia, X.\*** "Controlling the Fibroblastic Differentiation of Mesenchymal Stem Cell via the Combination of Fibrous Scaffolds and Connective Tissue Growth Factor" *Tissue Eng Part A*, **2011**, *17*, 2773-2785.
38. Srinivasan, P. P.; McCoy, S. Y.; Jha, A. K.; Yang, W.; **Jia, X.\***; Farach-Carson, M. C.; Kirn-Safran, C. B.\* "Injectable Perlecan Domain 1-Hyaluronan Microgels Potentiate the Cartilage Repair Effect of BMP2 in a Murine Model of Early Osteoarthritis", *Biomed. Mater.* **2012**, *7*, 024109.
39. Xu, X.; Jha, A. K.; Harrington, D. A.; Farach-Carson, M. C.; **Jia, X.\*** "Hyaluronic Acid-Based Hydrogels: from a Natural Polysaccharide to Complex Networks" *Soft Matter*, **2012**, *8*, 3280-3294.
40. Grieshaber, S. E.; Farran, A. J. E.; Bai, S.; Kiick, K. L.\*; **Jia, X.\*** "Tuning the Properties of Elastin Mimetic Hybrid Copolymers via a Modular Polymerization Method" *Biomacromolecules*, **2012**, *13*, 1774-1786.
41. Tong, Z.; **Jia, X.\*** "Biomaterials-Based Strategies for the Engineering of Mechanically Active Soft Tissues" *MRS Commun*, **2012**, *2*, 31-39.
42. Teller, S. S.; Farran, A. J. E.; Xiao, L.; Jiao, T.; Duncan, R. L.; Clifton, R. J.; **Jia, X.\*** "High Frequency Viscoelastic Shear Properties of Vocal Fold Tissues: Implications for Vocal Fold Tissue Engineering" *Tissue Eng Part A*, **2012**, *18*, 2008-2019.

43. Xiao, L.; Zhu, J.; Londono, D. J.; Pochan, D. J.; **Jia, X.\*** "Mechano-Responsive Hydrogels Crosslinked by Self-Assembled Block Copolymer Micelles" *Soft Matter*, **2012**, *8*, 10233–10237.
44. Xu, X.; Gurski, L. A.; Zhang, C.; Harrington, D. A.; Farach-Carson, M. C.; **Jia, X.\*** "Recreating the Tumor Microenvironment in a Bilayer, Hyaluronic Acid Hydrogel Construct for the Growth of Prostate Cancer Spheroids" *Biomaterials*, **2012**, *33*, 9049–9060.
45. Gurski, L. A.; Xu, X.; Labrada, L. N.; Nguyen, N. T.; Xiao, L.; van Golen, K. L.; **Jia, X.**; Farach-Carson, M. C.\* "Hyaluronan (HA) Interacting Proteins RHAMM and Hyaluronidase Impact Prostate Cancer Cell Behavior and Invadopodia Formation in 3D HA-Based Hydrogels" *PLoS One*, **2012**, *7*, e50075.
46. Grieshaber, S. E.; Paik, B. A.; Bai, S.; Kiick, K. L.; **Jia, X.\*** "Nanoparticle Formation from Hybrid, Multiblock Copolymers of Poly(acrylic acid) and a VPGVG Peptide" *Soft Matter*, **2012**, *9*, 1589–1599.
47. Li, L.; Tong, Z.; **Jia, X.**; Kiick, K. L.\* "Resilin-Like Polypeptide Hydrogels Engineered for Versatile Biological Functions" *Soft Matter*, **2013**, *9*, 665–673.
48. Krishnan, V.; Xu, X.; Barwe, S. P.; Yang, X.; Czymmek, K.; Waldman, S. A.; Mason, R. W.; **Jia, X.**; Rajasekaran, A. K.\* "Dexamethasone-Loaded Block Copolymer Nanoparticles Induce Leukemia Cell Death and Enhances Therapeutic Efficacy: A Novel Application in Pediatric Nanomedicine" *Mol. Pharm.*, **2013**, *10*, 2199–2210.
49. Pradhan-Bhatt, S.; Harrington, D. A.; Duncan, R. L.; **Jia, X.**; Witt, R. L.; Farach-Carson, M. C.\* "Implantable Three-Dimensional Salivary Spheroid Assemblies Demonstrate Fluid and Protein Secretory Responses to Neurotransmitters" *Tissue Eng Part A*, **2013**, *19*, 1610–1620.
50. Farran, A. J. E.; Teller, S. S.; Jia, F.; Clifton, R. J.; Duncan, R. L.; **Jia, X.\*** "Design and Characterization of a Dynamic Vibrational Culture System" *J. Tissue Eng Regen. M.*, **2013**, *7*, 213–225.
51. Tong, Z.; Duncan, R. L.; **Jia, X.\*** "Modulating the Behaviors of Mesenchymal Stem Cells via the Combination of High Frequency Vibratory Stimulations and Fibrous Scaffolds" *Tissue Eng Part A*, **2013**, *19*, 1862–1878.
52. Yang, X.; Cui, C.; Tong, Z.; Sabanayagam, C. R.; **Jia, X.\*** "Poly(epsilon-Caprolactone)-Based Copolymers Bearing Pendant Cyclic Ketals and Reactive Acrylates for the Fabrication of Photocrosslinked Elastomers" *Acta Biomaterialia*, **2013**, *9*, 8232–8244.
53. Xiao, L.; Tong, Z.; Chen, Y.; Pochan, D. J.; Sabanayagam, C. R.; **Jia, X.\*** "Hyaluronic Acid-Based Hydrogels Containing Covalently Integrated Drug Depots: Implication for Controlling Inflammation in Mechanically Stressed Tissues" *Biomacromolecules*, **2013**, *14*, 3808–3819.
54. Pradhan-Bhatt, S.; Harrington, D. A.; Duncan, R. L.; Farach-Carson, M. C.; **Jia, X.**; Witt, R. L.\* "A Novel *In Vivo* Model for Evaluating Functional Restoration of a Tissue Engineered Salivary Gland" *The Laryngoscope*, **2014**, *124*, 456–461.
55. Dicker, K. T.; Gurski, L. A.; Pradhan-Bhatt, S.; Witt, R. L.; Farach-Carson, M. C.; and **Jia, X.\*** "Hyaluronan: A Simple Polysaccharide with Diverse Biological Functions" *Acta Biomaterialia*, **2014**, *10*, 1558–1570.

56. Xu, X.; Sabanayagam, C. R.; Harrington, D. A.; Farach–Carson, M. C.; **Jia, X.\*** "A Hydrogel–Based Tumor Model for the Evaluation of Nanoparticle–Based Cancer Therapeutics" *Biomaterials*, **2014**, *35*, 3319–3330.
57. Tong, Z.; Zerdoum, A. B.; Duncan, R. L.; **Jia, X.\*** "Dynamic Vibration Cooperates with Connective Tissue Growth Factor to Modulate Stem Cell Behaviors" *Tissue Eng Part A*, **2014**, *20*, 1922–1934.
58. Zhang, H.; Dicker, K. T.; Xu, X.; **Jia, X.\***; Fox, J. M.\* "Interfacial Bioorthogonal Crosslinking" *ACS Macro Lett*, **2014**, *3*, 727–731.
59. Xu, X.; Farach–Carson, M. C.; **Jia, X.\*** "Three–Dimensional In Vitro Tumor Models for Cancer Research and Drug Evaluation" *Biotechnol Adv*, **2014**, *32*, 1256–1268.
60. Zerdoum, A. B.; Tong, Z.; Bachman, B.; **Jia, X.\*** "Construction and Characterization of a Novel Vocal Fold Bioreactor" *J. Vis. Exp.*, **2014**, *90*, e51594.
61. Gilkey, M. J.; Krishnan, V.; Scheetz L.; **Jia, X.**; Rajasekaran, A. K.; Dhurjati, P. S.\* "Physiologically Based Pharmacokinetic Modeling of Fluorescently Labeled Block Copolymer Nanoparticles for Controlled Drug Delivery in Leukemia Therapy" *CPT Pharmacometrics Syst Pharmacol*, **2015**, *4*, 167–174.
62. Liu, S.; Dicker, K. T.; **Jia, X.\*** "Modular and Orthogonal Synthesis of Hybrid Polymers and Networks" *Chem. Commun.*, **2015**, *51*, 5218–5237.  
*Feature article, 2015 Emerging Investigators issue.*
63. Paik, B. A.; Blanco, M. A.; **Jia, X.**; Roberts, C. J.; Kiick, K. L. "Aggregation of Poly(acrylic acid)–Containing Elastin–Mimetic Copolymers" *Soft Matter*, **2015**, *11*, 1839–1850.
64. Liu, S.; Zhang, H; Remy R. A.; Deng, F.; Mackay, M. E.; Fox, J. M.\*; **Jia, X.\*** "Meter–Long Multiblock Copolymer Microfibers via Interfacial Bioorthogonal Polymerization" *Adv Mater*, **2015**, *27*, 2783–2790.
65. Krishnan, V.; Xu, X.; Kelly, D; Snook, A.; Waldman, S. A.; Mason, R. W.; **Jia, X.**; Rajasekaran, A. K.\* "CD19–Targeted Nanodelivery of Doxorubicin Enhances Therapeutic Efficacy in B–cell Acute Lymphoblastic Leukemia" *Mol. Pharmaceutics*, **2015**, *12*, 2101–2111.
66. Li, L.; Zhang, P.; Wang, W.; Lin, H.; Zerdoum, A. B.; Geiger, S. J.; Liu, Y.; Xiao, N.; Zou, Y.; Ogbuu, O; Du, Q; **Jia, X.**; Li, J.; Hu, J.\* "Foldable and Cytocompatible Sol–gel TiO<sub>2</sub> Photonics", *Sci. Rep.*, **2015**, *5*, 13832.
67. Alalwiat, A.; Grieshaber, S. E.; Paik, B. A.; Kiick, K. L.; **Jia, X.**; Wesdemiotis, C.\* "Top–down Mass Spectrometry of Hybrid Materials with Hydrophobic Peptide and Hydrophilic or Hydrophobic Polymer Blocks" *Analyst*, **2015**, *140*, 7550–7564.
68. Li, L.; Mahara, A; Tong, Z; Levenson, E. A.; McGann, C. L.; **Jia, X.**; Yamaoka, T; Kiick, K. L.\* "Recombinant Resilin–based Bioelastomers for Regenerative Medicine Applications" *Adv. Healthcare Mater.*, **2016**, *5*, 266–275.
69. Ozdemir, T; Fowler, E. W.; Hao, Y.; Ravikrishnan, A.; Harrington, D. A.; Witt, R. L.; Farach–Carson, M. C.; Pradhan–Bhatt, S.\*; **Jia, X.\*** "Biomaterials–Based Strategies for Salivary Gland Tissue Regeneration" *Biomater. Sci.* **2016**, *4*, 592–604.

70. Han, Z.; Trout, W. S.; Liu, S.; Andrade, G. A.; Hudson, D. A.; Scinto, S. L.; Dicker, K. T.; Li, Y.; Lazouski, N.; Rosenthal, J.; Thorpe, C; **Jia, X.**; Fox, J. M.\* "Rapid Bioorthogonal Chemistry Turn-on through Enzymatic or Long Wavelength Photocatalytic Activation of Tetrazine Ligation" *J. Am. Chem. Soc.* **2016**, 38, 5978–5983.
71. Ravikrishnan, A.; Ozdemir, T.; Bah, M.; Baskerville, K. A.; Shah, S. I.; Ayyappan, R. K.; **Jia, X.**\* "Regulation of Epithelial-to-Mesenchymal Transition Using Biomimetic Fibrous Scaffolds" *ACS Appl. Mater. Interfaces* **2016**, 8, 17915–17926.
72. Srinivasan, P. P.; Patel, V.; Liu, S.; Harrington, D. A.; Hoffman, M. P.; Witt, R. L.; **Jia X.**; Farach–Carson, M. C.\*; Pradhan–Bhatt, S.\* "Primary Human Salivary Progenitor-Like Cells (hSPCs) Undergo Microenvironment Driven Differentiation in Hydrogel Culture" *Stem Cells Transl Med* **2016**, DOI: 10.5966/sctm.2016-0083.
73. Calero-Rubio, C.; Paik, B.; **Jia, X.** Kiick, K. L.; Roberts, C. J.\* "Predicting Unfolding Thermodynamics and Stable Intermediates for Alanine-Rich Helical Peptides with the Aid of Coarse-Grained Molecular Simulation, *Biophys. Chem.*, **2016**, doi: 10.1016/j.bpc.2016.07.002.

#### ***Submitted manuscripts under review***

74. Ozdemir, T.; Fowler, E. W.; Liu, S.; Harrington, D. A.; Witt, R. L.; Farach-Carson, M. C.; Pradhan-Bhatt, S.; **Jia, X.**\* "Sulfhydryl Oxidation Cooperates with Michael Addition to Promote the Assembly of Salivary Gland Spheroids in Synthetic Hydrogels" *Acta Biomater.* **2016**, *submitted*.
75. Hao, Y.; Zerdoum, A. B.; Stuffer, A. J.; Rajasekaran, A. K; **Jia, X.**\* "Biomimetic Hydrogels Incorporating Polymeric Cell-Adhesive Peptide to Promote the 3D Assembly of Tumoroids" *Biomacromolecules*, **2016**, *submitted*.
76. Li, L.; Stiadle, J. M; Lau, H. K.; Zerdoum, A. B.; **Jia, X.**; Thibeault, S. L; Kiick, K. L.\* "Tissue Engineering-based Therapeutic Strategies for Vocal Fold Repair and Regeneration" *Biomaterials*, **2016**, *submitted*.

#### **Book Chapters**

1. Grieshaber, S. E.; Jha, A. K.; Farran, A. J. E.; **Jia, X.**\* "Hydrogels in Tissue Engineering" in "Biomaterials for Tissue Engineering: A Review of the Past and Future Trends" Burdick, J. A.; Mauck, R. L. Eds., New York, NY, Springer, **2011**, 9-46 (ISBN: 978-3-7091-0384-5).
2. Farran, A. J. E.; Tong, Z.; Witt, R. L.; **Jia, X.**\* "Tissue Engineering Strategies for Vocal Fold Repair and Regeneration" in "Engineering Biomaterials for Regenerative Medicine: Novel Technologies for Clinical Applications" Bhatia, S. K. Ed., Springer, **2012**, 253-284 (ISBN: 978-1-4614-1080-5).
3. Pradhan-Bhatt S, Cannon K, Zakheim D, Harrington DA, Duncan RL, Jia X, Farach-Carson MC, Witt RL. (2014) "Salivary Gland Tissue Engineering and Repair" in Stem Cell Biology and Tissue Engineering in Dental Sciences, ed. Vishwakarma A; Sharpe, P; Shi, S; Ramalingham, M. Elsevier, 613-623. (ISBN number: 978-0-12-397157-9).

#### **Patents**



1. Farach-Carson, M. C.; Witt, R. L.; **Jia, X.**; Harrington, D. A.; Pradhan, S. "Implantable Modular Hydrogel for Salivary Gland Restoration" Application No. 14/305,424, filed June 6, **2014**.
2. Kirn-Safran, C. B.; Farach-Carson, M. C.; **Jia, X.**; Srinivasan, P. P.; Jha, A. K. "Injectable Delivery System for Heparin-Binding Growth Factors" Patent No. US 2014/0005111 A1 January 2, **2014**.

## **PRESENTATIONS AND POSTERS**

### **Invited Conference Presentations**

1. "Biomaterials for Vocal Fold Tissue Engineering", The 7th Annual Emerging Information & Technology Conference (EITC 2007), Princeton, NJ, August 9, 2007.
2. "Synthetic Extracellular Matrices with Controlled Architectures and Improved Mechanical Properties", Symposium-Responsive Biomaterials for Biomedical Applications, Materials Research Society Spring Meeting, San Francisco, CA, March 26, 2008.
3. "Elastin Mimetic Hybrid Copolymers for Tissue Engineering", The 21st International Symposium on Polymer Analysis and Characterization (ISPAC), Wilmington, Delaware, June 10, 2008.
4. "Advanced Biomaterials with Controlled Architecture and Tunable Viscoelasticity for Tissue Engineering Applications", Polymers in Life Sciences, University of Basel, Basel, Switzerland, September 5, 2008.
5. "Hyaluronic Acid-Based Doubly Crosslinked Networks for Vocal Fold Tissue Regeneration", Gordon Research Conference (GRC): Macromolecular Materials, Ventura, CA, January 14, 2009.
6. "Synthesis and Characterization of Elastin Mimetic Hybrid Polymers with Alternating Molecular Architecture and Elastomeric Properties", Materials Research Society (MRS) Spring Meeting, San Francisco, CA, April 14, 2009.
7. "Engineering Artificial Extracellular Matrices for Biomedical Applications" American Chemical Society National Meeting, Washington, DC, August 19, 2009.
8. "Molecular design of functional biomaterials for biomedical applications", International Symposium on Polymer Chemistry, Suzhou, China, June 3, 2010.
9. "Engineering Approaches for the Construction of Hyaluronic Acid-Based Hydrogel Particles and Doubly Crosslinked Networks", Pre-conference workshop "HA Biomaterials for Cell Therapy", Tissue Engineering and Regenerative Medicine Society (TERMIS) Annual Meeting, Orlando, FL, December 5-8, 2010.
10. "Biomimetic, Hybrid Hydrogels for Tissue Engineering", Symposium- Biomimetic Polymers, ACS National Meeting and Exposition, Denver, CO, August 28-September 1, 2011.
11. "Self-assembled nanoparticles derived from diblock and multiblock copolymers as modular drug delivery vehicles", Symposium- Function Through Macromolecular Assembly, ACS National Meeting and Exposition, Denver, CO, August 28-September 1, 2011.

12. "Tunable Elastin-Mimetic Multiblock Hybrid Copolymers for Biomedical Applications", PMSE Young Investigator Symposium, Division of Polymeric Materials, ACS National Meeting and Exposition, Philadelphia, PA, August 19-23, 2012.
13. "Engineered Matrices for Stem Cell Differentiation and Soft Tissue Regeneration", Polymeric Materials and Surfaces for Cell Differentiation, Division of Polymeric Materials, 244<sup>th</sup> ACS National Meeting and Exposition, Philadelphia, PA, August 19-23, 2012.
14. "Mechano-Responsive Hydrogels Crosslinked by Block Copolymer Micelles" 5th International Symposium on Polymer Chemistry (PC2012), Changchun, China, June 2–6, 2012
15. "Hydrogels crosslinked by Soft Particles" the 9th Mid-Atlantic Soft Matter workshop, University of Maryland, College Park, MD, July 20, 2012.
16. "Biomimetic Approaches for the in vitro Engineering of 3D Prostate Cancer Models" The 2nd EITC Bio Conference, Princeton University, Princeton, NJ, October 27-28, 2012.
17. "Complex and cell-instructive networks based on hyaluronic acid", 9th International Conference on Hyaluronan, Oklahoma City, OK, June 2-7, 2013.
18. "Interfacing Biology with Synthetic Matrices", ACS, Colloid and Surface Science Division, San Francisco, CA, August 10-14, 2014.
19. "Vocal fold mimetic microenvironment for the modulation of stem cell behaviors", EITA on New Media and Biomedical Research, Cambridge, MA, July 31-August 1 2014.
20. "Orthogonal and Modular Approaches for the Construction of Nanostructured Hybrid Polymers", TechConnect, Washington DC, June 15-18, 2014.
21. "Multiblock hybrid copolymers via interfacial bioorthogonal polymerization", 6th International Symposium on Polymer Chemistry (PC2014), Shanghai, China, June 4-7 2014.
22. "Biomimetic strategies for vocal fold repair and regeneration", Strategic directions in laryngeal tissue regeneration, Madison, Wisconsin, July 10 2014.
23. "Modular and Bioorthogonal Approaches for the Construction of Functional Biomaterials" Biomaterials & Tissue Engineering, Gordon Research Conference, Regenerative Engineering and Functional Materials Integration, Girona, Spain, July 19-24, 2015.
24. "Modular and orthogonal approaches for the construction of functional biomaterials" PMSE: PSE50, Celebrating 50 Years of Polymer Science and Engineering 250<sup>th</sup> ACS National Meeting & Exposition, Boston, MA, August 16-20, 2015.
25. "Hyaluronic Acid-Based Dynamic and Permissive Hydrogels for Tissue Repair and Regeneration", 251<sup>st</sup> ACS National Meeting & Exposition, San Diego, CA, March 13-17, 2016.
26. "Diffusion-Controlled Interfacial Bioorthogonal Polymerization", 251<sup>st</sup> ACS National Meeting & Exposition, San Diego, CA, March 13-17, 2016.

#### **Invited Academic and Industry Seminars**

27. "Surface Chemistry and Topography: Precise Control at Nanometer Scale", Department of Chemistry, City University of New York at Staten Island, December 19, 2001.

28. "Surface Chemistry and Topography: Precise Control at Nanometer Scale", Department of Chemistry, University of Vermont, January 17, 2002.
29. "Surface Chemistry and Topography: Precise Control at Nanometer Scale", Department of Chemistry, University of Rochester, January 10, 2002.
30. "Tissue Engineering for Vocal Fold Regeneration", Division of Engineering, Brown University, September 23, 2004.
31. "From Silicon Oxide Nanodots to Artificial Vocal Folds: Advanced Materials by Design", Department of Chemistry, University of Maine, December 2, 2004.
32. "From Silicon Oxide Nanodots to Artificial Vocal Folds: Advanced Materials by Design", Rowland Institute, Harvard University, December 8, 2004.
33. "From Silicon Oxide Nanodots to Artificial Vocal Folds: Advanced Materials by Design", Department of Materials Science and Engineering, University of Maryland, College Park, December 20, 2004.
34. "From Silicon Oxide Nanodots to Artificial Vocal Folds: Advanced Materials by Design", Department of Materials Science and Engineering, University of Illinois at Urbana-Champaign, January 18, 2005
35. "From Silicon Oxide Nanodots to Artificial Vocal Folds: Advanced Materials by Design", Department of Chemical Engineering, University of Florida, January 3 2005.
36. "From Silicon Oxide Nanodots to Artificial Vocal Folds: Advanced Materials by Design", Department of Materials Science and Engineering, University of Delaware, February 1, 2005.
37. "From Silicon Oxide Nanodots to Artificial Vocal Folds: Advanced Materials by Design", Polymer Program, University of Connecticut, February 11, 2005.
38. "From Silicon Oxide Nanodots to Artificial Vocal Folds: Advanced Materials by Design", Department of Polymer Science and Engineering, University of Massachusetts, Amherst, April 1, 2005.
39. "From Silicon Oxide Nanodots to Artificial Vocal Folds: Advanced Materials by Design", Nanomanufacturing Center of Excellence, University of Massachusetts, Lowell, April 8, 2005.
40. "From Silicon Oxide Nanodots to Artificial Vocal Folds: Advanced Materials by Design", Department of Biomedical Engineering, Cornell University, April 21, 2005.
41. "Development of Next Generation Functional Biomaterials", Delaware EPSCoR Annual Meeting, University of Delaware, January 20, 2006.
42. "Vocal Fold Tissue Engineering", National Institute of Standards and Technology (NIST), April 7, 2006.
43. "Vocal Fold Tissue Engineering", Department of Chemistry (CBI Program), University of Delaware, October 3, 2006.
44. "Vocal Fold Tissue Engineering", Department of Pharmacology, Temple University, December 13, 2006.

45. "Biomimetic Approaches for Vocal Fold Tissue Engineering" Center for Laryngeal Surgery and Voice Rehabilitation, Massachusetts General Hospital, Harvard Medical School, August 23, 2007.
46. "Biomimetic Approaches for Functional Tissue Engineering", Department of Physics and Astronomy, University of Delaware, September 18, 2007.
47. "Biomimetic Approaches for Vocal Fold Tissue Engineering" Delaware Biotechnology Institute (DBI), September 20, 2007.
48. "Biomimetic Approaches for Vocal Fold Tissue Engineering", Department of Industrial Engineering, University at Buffalo, October 19, 2007.
49. "Biomimetic Approaches for Vocal Fold Tissue Engineering", Division of Otolaryngology-Head and Neck Surgery, University of Wisconsin-Madison, November 20, 2007.
50. "Biomimetic Approaches for Vocal Fold Tissue Engineering", Sukant Tripathy Memorial Symposium, University of Massachusetts, Lowell, November 30, 2007.
51. "Functional Biomaterials for Tissue Engineering" Department of Chemistry, Bloomsburg University, February 1, 2008.
52. "Biomimetic Approaches for Vocal Fold Tissue Engineering", Department of Chemistry, The College of William and Mary, March, 21 2008.
53. "Biomimetic Approaches for Vocal Fold Tissue Engineering", Jefferson University Hospital, April 23, 2008.
54. "Synthetic Extracellular Matrices with Controlled Architectures and Improved Mechanical Properties for Tissue Engineering", Department of Biomedical Engineering, Peking University, China, June 13, 2008.
55. "Biomimetic Approaches for Vocal Fold Tissue Engineering", University of Pennsylvania, School of Veterinary Medicine, New Bolton Center, August 12, 2008.
56. "Development of Three-Dimensional Artificial Extracellular Matrices with Potentials for Studying Cancer Cell Biology" A.I. DuPont Children's Hospital, August 26, 2008.
57. "Biomimetic Approaches for Vocal Fold Tissue Engineering", Department of Materials, Imperial College, London, UK, September 3, 2008.
58. "Biomimetic Approaches for Vocal Fold Tissue Regeneration", Delaware Biotechnology Institute, September 20, 2008.
59. "Synthetic Extracellular Matrices with Controlled Architectures and Improved Mechanical Properties for Vocal Fold Tissue Engineering", Department of Chemistry, The College of New Jersey, November, 24, 2008.
60. "Engineering Artificial Extracellular Matrices for Biomedical Applications", Nemours Biomedical Research, Alfred I. duPont Hospital for Children, March 9, 2009.
61. "Engineering Artificial Extracellular Matrices for Biomedical Applications", Institutes of Chemical Physics and Life Sciences, University of Science and Technology of China, China, April 6, 2009.

62. "Functional Biomaterials for Regenerative Medicine", Weldon School of Biomedical Engineering, Purdue University, September 9, 2009.
63. "Creating Biomimetic Microenvironment for Vocal Fold Tissue Engineering", Department of Biomedical Engineering, Columbia University, October 2, 2009.
64. "Molecular Design of Functional Biomaterials for Regenerative Medicine", Materials Science and Engineering Colloquium, Boston University, October 16, 2009.
65. "From Soft Hydrogel Particles to Hybrid Elastomers: Functional Biomaterials by Design", Department of Chemistry, Rutgers, The State University of New Jersey, October 30, 2009.
66. "Molecular Design of Functional Biomaterials for Regenerative Medicine", Department of Chemical, Materials and Biomolecular Engineering, University of Connecticut, November 3, 2009.
67. "From Soft Hydrogel particles to Hybrid Matrices: Advanced Biomaterials by Design" Department of Materials Science and Engineering, Iowa State University, October, 22 2009.
68. "Biomimetic Materials for Tissue Regeneration", Department of Bioengineering, University of Pennsylvania, November 19, 2009.
69. "Engineered Matrices for Tissue Regeneration", Harvard-MIT Division of Health Sciences and Technology, December 10, 2009.
70. "Soft and Hybrid Materials for Tissue Engineering and Cancer Biology", Department of Polymer Science and Engineering, University of Massachusetts, Amherst, December 11, 2009.
71. "Biomimetic Materials for Tissue Regeneration", Department of Macromolecular Science and Engineering, Case Western Reserve University, January 15, 2010.
72. "Engineering the Biology-Materials Interface", Department of Bioengineering, Rice University, January 18, 2010.
73. "From Soft Hydrogel Particles to Hybrid Matrices: Advanced Biomaterials by Design" Department of Materials Science and Engineering, Department of Materials Science and Engineering, Johns Hopkins University, March 17, 2010.
74. "Molecular Design of Functional Biomaterials for Regenerative Medicine", Department of Chemistry, Drexel University, March 4, 2010.
75. "Molecular Design of Functional Biomaterials for Regenerative Medicine", Institute of Biomaterials and Biomedical Engineering, University of Toronto, Canada, March 30, 2010.
76. "Hybrid and Hierarchical Hydrogels for Tissue Engineering", Department of Chemical Engineering, University of Washington, Seattle, April 19, 2010.
77. "Molecular Design of Functional Biomaterials for Regenerative Medicine", Department of Materials Science and Engineering, Drexel University, May 5, 2010.
78. "Interfacing Biology with Synthetic Materials", Department of Biological Sciences, University of Delaware, October 6, 2010.
79. "Interfacing Biology with Synthetic Materials", Department of Medicine, Thomas Jefferson University, December 3, 2010.

80. "Self-Assembled Nanoparticles Derived from Diblock and Multiblock Copolymers as Modular Drug Delivery Vehicles", UD-Tsinghua Workshop on Nanotechnology, University of Delaware, April 27-28, 2011.
81. "Modular Approach for the Construction of Soft and Hybrid Biomaterials", Department of Polymer Science, University of Akron, December 19, 2011.
82. "Materials Approach for the Engineering of Functional Tissues", Department of Biomedical Engineering, Texas A&M University, March 22, 2012.
83. "Modular Approach for the Construction of Soft and Hybrid Biomaterials", Department of Chemical Engineering, Hong Kong University of Science and Technology, May 28, 2012.
84. "Modular Approach for the Construction of Soft and Hybrid Biomaterials", Department of Polymer Science and Engineering, Nanjing University, China, May 30, 2012.
85. "Modular Approach for the Construction of Soft and Hybrid Biomaterials", Department of Polymer Science and Engineering, Shanghai Jiao Tong University, China, May 31, 2012.
86. "Modular Approach for the Construction of Soft and Hybrid Biomaterials", Department of Polymeric Materials, Tong Ji University, China, May 31, 2012.
87. "Soft and Hybrid Hydrogels" Sinopec, Beijing, China, June 8 2012.
88. "Interfacing Biology with Synthetic Materials" Chemistry and Biochemistry Interface Program, University of Delaware, Newark, DE, October 31, 2012.
89. "Interfacing Biology with Synthetic Materials" DuPont Co., Wilmington, DE, October 19, 2012.
90. "Interfacing Biology with Synthetic Materials" Stevens Institute of Technology, Dept. of Chemical Engineering and Materials Science, February 1, 2013.
91. "Interfacing Biology with Synthetic Materials" Department of Chemistry, Georgetown University, Washington DC, March 14, 2013.
92. "Interfacing Biology with Synthetic Materials" Department of Chemistry, University of Massachusetts, Lowell, MA, March 21, 2013.
93. "Interfacing Biology with Synthetic Materials" University of Massachusetts Medical School, Worcester, MA, March 22, 2013.
94. "From Soft Hydrogel Particles to Elastomeric Scaffolds: Functional Biomaterial by Design" W. L. Gore & Associates Inc, Newark, DE, April 9, 2013.
95. "Cell-Instructive Environment for the Engineering of Functional Tissues", Chemical and Biomolecular Engineering, NYU-POLY, November 1, 2013.
96. "Orthogonal and Modular Approaches for the Construction of Functional Biomaterials", Department of Chemistry, The University of North Carolina, Chapel Hill, NC, January, 16, 2014.
97. "Multiblock Hybrid Copolymers with Tunable Composition and Diverse Biological Functions", Shanghai Institute of Organic Chemistry, Shanghai, China, June 9 2014.
98. "Engineering Cell-Instructive Environments for the Assembly of Functional Tissues", Biomedical Engineering, Tufts University, Medford, MA, September 15, 2014.

99. “Engineering Cell-Instructive Environments for the Assembly of Functional Tissues” The James Buchanan Brady Urological Institute and Department of Urology, Johns Hopkins University School of Medicine, Baltimore, MD, July 1, 2015.
100. “Modular and Orthogonal Approaches for the Construction of Functional Biomaterials” Center for Neurosciences and Cell Biology, University of Coimbra, Coimbra, Portugal, July 13, 2015.
101. “Modular and Orthogonal Approaches for the Construction of Functional Biomaterials” Adolphe Merkle Institute, University of Fribourg, Fribourg, Switzerland, July 15, 2015.
102. “Modular and Orthogonal Approaches for the Construction of Functional Biomaterials” CNRS et Institut Polytechnique de Grenoble, Université de Grenoble, Grenoble, France, July 17, 2015.
103. “Modular and Orthogonal Approaches for the Construction of Functional Biomaterials” Gordon Research Conference, Biomaterials & Tissue Engineering, Girona, Spain, July 19-24, 2015.
104. “Modular and Orthogonal Approaches for the Construction of Functional Biomaterials” Department of Materials, Imperial College, London, United Kingdom, July 27, 2015.
105. “Modular and Orthogonal Approaches for the Construction of Functional Biomaterials” Department of Chemistry, University of Warwick, Warwick, United Kingdom, July 29, 2015.
106. “Permissive and Cell-Instructive Matrices for the Assembly of Functional Tissues”, Department of Chemical Engineering, University of Illinois, Chicago, IL, February 11 2016.

**Contributed Oral Presentations and Posters** (*presented by Jia*)

1. **Jia, X.**; Huang, J. “Copolymerization Behavior of Maleimide and  $\alpha$ -Substituted Acrylates”, Oral Presentation, Chinese National Polymer Conference, Hefei, China, June, 1997.
2. **Jia, X.**; McCarthy, T. J. “Chemical Modification of Buried Interfaces Using Supercritical Carbon Dioxide” Poster Presentation, American Chemical Society (ACS) Annual Meeting, Washington, DC, August 19-24, 2000.
3. **Jia, X.**; McCarthy, T. J. “Controlled Growth of Silicon Dioxide from Tris(trimethylsiloxy)silyl Monolayers and the Study of Protein Adsorption on the Resulting Model Surfaces”, Oral Presentation, American Chemical Society (ACS) Annual Meeting, Chicago, IL, August 25-30, 2001.
4. **Jia, X.**; McCarthy, T. J. “Chemical Surface Modification of Nylon 6/6”, Oral Presentation, American Chemical Society (ACS) Annual Meeting, Boston, MA, August 18-22, 2002.
5. **Jia, X.**; Herrera-Alonso, M.; McCarthy, T. J. “Nylon Surface Modification: Targeting the Amide Groups for Selective Introduction of Reactive Functionalities”, Oral Presentation, American Chemical Society (ACS) National Meeting, San Diego, CA, March 13-17, 2005
6. **Jia, X.**; Kobler, J.; Clifton, R. J.; Jiao, T.; Zeitels, S. M.; Langer, R. “Synthesis and Characterization of Hyaluronic Acid-based Hydrogels for Vocal Fold Regeneration”, Oral Presentation, American Chemical Society (ACS) National Meeting, San Diego, CA, March 13-17, 2005

7. **Jia, X.**; Yeo, Y.; Clifton, R. J.; Jiao, T.; Kohane, D. S.; Kobler, J. B.; Zeitels, S. M.; Langer, R. “Hyaluronic Acid-Based Hydrogels for Vocal Fold Regeneration”, Poster Presentation, Celebrating Thirty Years of Robert Langer’s Science, Cambridge, MA, July 15, 2006.
8. **Jia, X.**; Yeo, Y.; Clifton, R. J.; Jiao, T.; Kohane, D. S.; Kobler, J. B.; Zeitels, S. M.; Langer, R. “Hyaluronic Acid-Based Microgels and Microgel Networks for Vocal Fold Regeneration”, Oral Presentation, American Chemical Society (ACS) National Meeting, San Francisco, CA September 10-14, 2006.
9. **Jia, X.**; Yeo, Y.; Clifton, R. J.; Jiao, T.; Kohane, D. S.; Kobler, J. B.; Zeitels, S. M.; Langer, R. “Hyaluronic Acid-Based Microgels and Microgel Networks for Vocal Fold Regeneration”, Poster Presentation, Biomedical Engineering Society (BMES) Annual Meeting, Chicago, IL, October 11-14, 2006.
10. **Jia, X.**; Yeo, Y.; Clifton, R. J.; Jiao, T.; Kohane, D. S.; Kobler, J. B.; Zeitels, S. M.; Langer, R. “Hyaluronic Acid-Based Hydrogels for Vocal Fold Regeneration”, Oral Presentation, Particles 2006, Orlando, FL, May 13-16, 2006.
11. **Jia, X.**; Sahiner, N.; Jha, A.; Yeo, Y. “Hyaluronan-Based Hybrid Hydrogels with Tunable Mechanical Properties for Soft Tissue Regeneration”, Oral Presentation, Materials Research Society Fall Meeting, Boston, MA, November 27-December 1, 2006.
12. **Jia, X.**; Sahiner, N.; Jha, A. “Biomaterials for Vocal Fold Tissue Engineering”, Poster Presentation, Gordon Research Conference on Polymers (Polymer West), Ventura, CA, January 7-12, 2007.
13. **Jia, X.** “Interfacial Interaction of Engineered Nanoparticles with Marine Organisms”, Delaware EPSCoR Annual Meeting, University of Delaware, January 22, 2007.
14. **Jia, X.**; Sahiner, N.; Jha, A. “Hyaluronic Acid-Based Microgel Systems with Tunable Viscoelasticity and Therapeutic Potentials for Soft Tissue Regeneration” Oral Presentation, Society for Biomaterials (SFB) Annual Meeting, Chicago, IL, April 18-21, 2007.
15. **Jia, X.**; Sahiner, N.; Jha, A.; Jiao, T.; Clifton, R. “Hyaluronic Acid Hydrogel Particles and Particle Containing Networks for Biomedical Applications” Oral Presentation, American Chemical Society (ACS) National Meeting, Boston, MA, August 19-22, 2007.
16. **Jia, X.** “Hyaluronan-Based Hydrogel Particles and Particle Crosslinked Networks with Tunable Mechanical Properties”, Oral Presentation, 81st Colloid & Surface Science Symposium, Newark, DE, June 24-27, 2007.
17. **Jia, X.**; Jha, A. K.; Grieshaber, S. E.; Farach-Carson, M. C.; Duncan, R. L.; Witt, R. “Biomimetic Approaches for Functional Tissue Engineering”, The Voice Foundation’s 37<sup>th</sup> Annual Symposium: Care of the Professional Voice, Philadelphia, PA, May 18-June 1, 2008.
18. Jha, A. J.; Grieshaber, S. E.; Farran, A. J. E.; Jia, F.; Woods, M.; **Jia, X.** “Tissue Engineering of Vocal Fold Lamina Propria”, Poster Presentation, GRC: Signal Transduction By Engineered Extracellular Matrices, Lewiston, MI, July 11-16, 2008.
19. Grieshaber, S. E.; Jha, A. K.; **Jia, X.** “Biomimetic Approaches for Vocal Fold Tissue Engineering”, Oral Presentation, American Chemical Society (ACS) National Meeting, Philadelphia, PA, August 17-21, 2008.



20. Jha, A. J.; Grieshaber, S. E.; Farran, A. J. E.; Jia, F.; Woods, M.; **Jia, X.** "Synthetic Extracellular Matrices with Controlled Architectures and Improved Mechanical Properties for Tissue Engineering", Poster Presentation, Biomedical Engineering Society (BMES) Annual Fall Meeting, St. Louis, MO, October 2-4, 2008.
21. Grieshaber, S. E.; Farran, A. J. E.; Lin-Gibson, S.; Kiick, K. L.; **Jia, X.** "Synthesis and Characterization of Elastin Mimetic Hybrid Polymers with Alternating Molecular Architecture and Elastomeric Properties", Poster Presentation, Gordon Research Conferences (GRC): Macromolecular Materials, Ventura, CA, January 11-15, 2009.
22. Grieshaber, S. E.; Kiick, K. L.; **Jia, X.** "Synthesis and Characterization of Elastin Mimetic Hybrid Copolymers with Alternating Molecular Architecture", Oral Presentation, American Chemical Society National Meeting, Salt Lake City, UT, March 22-26, 2009.
23. **Jia, X.** "Interfacing Biology with Engineered Matrices", Oral Presentation, Biomedical Engineering Society (BMES) Annual Fall Meeting, Pittsburg, PA, October 7-10, 2009.
24. **Jia, X.** "From Soft Hydrogels to Hybrid Elastomers: Advanced Biomaterials by Design", Oral Presentation, Materials Research Society (MRS) Fall Meeting, Boston, MA, November 30-December 2, 2009.
25. Jha, A. K.; Wang, X.; **Jia, X.** "Engineered Particles for Controlled Release of Therapeutically Active Molecules", Poster Presentation, 10<sup>th</sup> US-Japan Symposium on Drug Delivery, Lahaina, Maui, Hawaii, December 16-20, 2009.
26. Gurski, L. A.; Wang, X.; Jha, A. K.; Farach-Carson, M. C.; **Jia, X.** "Engineered Tumor as an in Vitro Platform for the Assessment of Nanoparticle Drug Delivery System", Oral Presentation, Society for Biomaterials (SFB) Annual Meeting, Seattle, WA, April 21-26, 2010.
27. Grieshaber, S. E.; Farran, A. J. E.; Kiick, K. L.; **Jia, X.** "Elastin Mimetic Hybrid Polymers for Vocal Fold Tissue Engineering", Poster Presentation, Society for Biomaterials (SFB) Annual Meeting, Seattle, WA, April 21-26, 2010.
28. Grieshaber, S. E.; Xiao, L.; Liu, X.; **Jia, X.** "Mechano-responsive hydrogels via biomimetic approaches", Oral Presentation, American Chemical Society (ACS) National Meeting, Boston, MA, August 22-26, 2010.
29. Grieshaber, S. E.; Farran, A. J. E.; Kiick, K. L.; **Jia, X.** "Elastin Mimetic Hybrid Polymers as Conductive Scaffolds for Tissue Engineering", Poster Presentation, Biomedical Engineering Society (BMES) Annual Fall Meeting, Austin, TX, October 6-9, 2010.
30. Jha, A. K.; **Jia, X.**; Controlling the Adhesion and Differentiation of Mesenchymal Stem Cells Using Cell Responsive, Hyaluronic Acid-Based, Doubly-Crosslinked Networks", Poster Presentation, Society for Biomaterials Annual Meeting and Exposition, Orland, FL, April 13-16, 2011.
31. Xiao, L.; Greene, A. C.; Kiick, K. L.; **Jia, X.** "Multifunctional Block Copolymer Nanoparticles for Controlled Release of Bone Morphogenetic Protein 2", Poster Presentation, Society for Biomaterials Annual Meeting and Exposition, Orland, FL, April 13-16, 2011.

32. Jha, A. K.; Tong, Z.; Sant, S.; Khademhosseini, A.; **Jia, X.** "Controlling Stem Cell Differentiation Using Micro/Nano-Structured Synthetic Matrices" Poster Presentation, Biomedical Engineering Society (BMES) Annual Fall Meeting, Hartford, CT, October 12-15, 2011.
33. Jha, A. K.; **Jia, X.** "Controlling Cell Function Using Engineered, Hyaluronic Acid-Based Hydrogel Matrices", Oral Presentation, Materials Research Society (MRS) Fall Meeting, Boston, MA, November 28-December 2, 2011.
34. **Jia, X.** "Dexamethasone-Releasing Nanoparticles Assembled from Amphiphilic Block Copolyesters Bearing Pendant Cyclic Ketals", Oral Presentation, Materials Research Society (MRS) Fall Meeting, Boston, MA, November 28-December 2, 2011.
35. Xu, X.; **Jia, X.** "Testing Nanoparticle-Based Drug Delivery Systems Using an Engineered Tumor Model", Poster Presentation, Gordon Research Conferences: Biomaterials & Tissue Engineering-Inductive Signals for Tissue Regeneration and Clinical Challenges, Holderness School, Holderness, NH, July 28 - August 2, 2013.
36. **Jia, X.** "Interfacing Biology with Synthetic Materials", Oral Presentation, 5th North East Regional IDeA Conference, University of Delaware, Newark, DE, August 15-16, 2013
37. **Jia, X.** "Microscopy and Mechanical Testing Core in Support of the Biomaterials Research at the University of Delaware", Poster Presentation, 5th North East Regional IDeA Conference, University of Delaware, Newark, DE, August 15-16, 2013.
38. **Jia, X.** "Mechano-Responsive Hydrogels with Elastomeric Properties", Poster Presentation, Polymers GRC, Mount Holyoke College, MA, June 9-14, 2013.
39. **Jia, X.** "Mechano-Responsive Hydrogels for Tissue Repair and Regeneration", Oral Presentation, Biomedical Engineering Society (BMES) Annual Meeting, Seattle, WA, September 25-28, 2013.
40. Xu, X.; Xiao, L.; Zhang, H.; Dicker, K. T.; Liu, S.; Fox J. M.; **Jia, X.** "Orthogonal and Modular Approaches for the Construction of Functional Biomaterials" Oral Presentation, 247th ACS National Meeting & Exposition, Dallas, TX, March 16-20, 2014.
41. **Jia, X.** "Vocal Fold Mimetic Environment for the Modulation of Stem Cell Behaviors", Poster Presentation, Signal Transduction by Engineered Extracellular Matrices, Gordon Research Conference, Enhancing Complexity in Cellular Microenvironments, Bentley University, Waltham, MA, July 6-11, 2014.
42. Liu, S.; Zhang, H.; Fox, J. M.; **Jia, X.** "Directing Cell Functions Using Bioorthogonally Clicked Multiblock Hybrid Copolymers", Biomedical Engineering Society (BMES) Annual Meeting, San Antonio, TX, on October 22-25, 2014.
43. **Jia, X.** "Tunable Multiblock Hybrid Copolymers as Protein Mimetics", Oral Presentation, 248th ACS National Meeting & Exposition, San Francisco, CA, August 10-14, 2014.
44. Xu, X.; Zhang, H.; Dicker, K. T.; Liu, S.; Fox J. M.; **Jia, X.** "Engineering Cell-Instructive Environments for the Assembly of Functional Tissues", Oral Presentation, 249<sup>th</sup> ACS National Meeting & Exposition, Denver, CO, March 22-26, 2015.

45. **Jia, X.** “Hyaluronic Acid-Based Dynamic and Permissive Hydrogels for Tissue Repair and Regeneration”, Oral Presentation, Delaware IDeAs 2016, University of Delaware, Newark, DE, February 24-25, 2016.
46. **Jia, X.** “Microscopy and Mechanical Testing Core in Support of the Biomaterials Research at the University of Delaware”, Poster Presentation, Delaware IDeAs 2016, University of Delaware, Newark, DE, February 24-25, 2016.

## **RESEARCH MENTORING**

### **Doctoral Students (17 advised, 8 graduated)**

2005–2010	Amit Jha (current position: Lead Chemist, Dentsply, DE)
2005–2111	Alexandra Farran (current position: Scientist, L'Oreal, NJ)
2006–2012	Sarah Grieshaber (co-advised with Prof. Kristi Kiick, current position: Scientist, Product Development, SABIC, IN)
2007–2013	Longxi Xiao (current position: Senior Chemist, Jordi Labs, MA)
2007–2012	Lisa Gurski (co-advised with Prof. Mary C. Farach-Carson, current Position: Educator, Synergy Medical Education, PA)
2008–2013	Zhixiang Tong (current position: Scientist, Novartis, CA)
2008–2013	Xian Xu (current position: Senior Scientist, NAL Pharma, NJ)
2009–2015	Vinu Krishnan (co-advised with Prof. Ayyappan K. Rajasekaran, current position: Postdoctoral scientist, University of California, Santa Barbara)
2011–	Kevin Dicker
2011–	Bradford Paik (co-advised with Prof. Kristi Kiick)
2012–	Aidan Zerdoum
2013–	Sarah Geiger (co-advised with Prof. Juejun Hu)
2013–	Eric Fowler
2014–	He Zhang (co-advised with Prof. Joseph Fox)
2014–	Anitha Ravikrishnan
2015–	Jiyeon Song
2015–	Olivia George

### **Masters Students (3 total, 2 graduated)**

2010–2012	Xinyi Wang (current position: Chemist, General Separation Technologies, Inc. DE)
2010–2013	Xiaowei Yang (current position: Researcher, Alphasense Inc. DE)
2015–	Alexander Stuffer

### **Undergraduate Students (18 total, 2 honors theses)**

2006 Muhammad M. Hussain, Biological Sciences, University of Delaware

2007–2008 Michael Allerton, Chemical Engineering, University of Delaware

2007–2009 Meghan Woods, Chemistry and Biochemistry, University of Delaware  
Senior thesis: Synthesis and Characterization of Hybrid Hydrogels for Use in Vocal Fold Tissue Engineering

2008 Christie Brandt, Chemistry and Biochemistry, University of Delaware

2008–2010 Aditya Bose, Chemistry and Biochemistry, University of Delaware  
Senior thesis: Synthesis and Characterization of Block Copolymer Nanoparticles for Controlled Release of Cancer Therapeutics

2009 Michael R. Ruggieri, Mechanical Engineering, Drexel University

2009 Christine L. Lummer, Chemistry and Biochemistry, University of Delaware

2009 Kathryn Barber, Engineering Science, The Pennsylvania State University

2009, 2010 Lamoyne M. Habimana-Griffin, Biomedical Engineering, Rose-Hulman Institute of Technology

2011 Eric Levi, Chemical Engineering, University of Delaware

2011 James Thomason, Biomedical Engineering, University of Delaware

2013-2014 Patrick Crane Biomedical Engineering, University of Delaware

2013 Rachel Boedeker Biomedical Engineering, University of Delaware

2014-2016 Dakota Kelly, Biomedical Engineering, University of Delaware

2015- Mark Kai Leung Ho, Chemical Engineering, University of Delaware

2015-2016 Rachel Owrutsky, Chemistry and Biochemistry, University of Delaware

2016 Grant Halleran, Mechanical Engineering, University of Delaware

2016- Mark Christian, Mechanical Engineering, University of Delaware

#### **High School Teachers (2 advised)**

2010 Paris Crockett, Science Teacher, Caesar Rodney High School

2010 Bart Fennemore, Science teacher, Caesar Rodney High School

#### **High School Students (1 advised)**

2012 Naman Agrawal

#### **Visiting Professors (3 sponsored)**

2009–2010 Prof. Jianhao Zhao, Jinan University, China

2016 Prof. Wenjun Du, Central Michigan University, USA

2016-2017 Prof. Jie Li, North University of China

#### **Postdoctoral Researchers (12 Sponsored)**

2005–2007	Dr. Nurettin Sahiner (current position: Canakkale Onsekiz Mart University, Turkey)
2007–2009	Dr. Fang Jia (current position: Tsinghua University, China)
2008–2009	Dr. Ting Nie (current position: Evonik Stockhausen, LLC)
2008–2010	Dr. Xiaoying Wang (current position: Jinan University, China)
2008–2011	Dr. Chao Liu (current Position: Xiamen University, China)
2009–2011	Dr. Anna Greene (current position: Dartmouth College)
2010–2011	Dr. Chengzhong Cui (current position: Solvay)
2013–2014	Dr. Samuel H. Lahasky (current position: SciGenesis)
2015–2016	Shivshankar R. Mane (current position: Karlsruhe Institute of Technology, Germany)
2013-2014	Dr. Shuang Liu (current Position: University of Delaware)
2014-	Dr. Tugba Ozdemir
2014-	Dr. Ying Hao

## TEACHING

Fall 2005	MSEG630-010	Introduction to Science and Engineering of Polymer Systems
Fall 2006	MSEG667-011	Biopolymeric Materials
Fall 2006	MSEG667-010	Materials Science Seminar
Fall 2006	MSEG630-010	Introduction to Science and Engineering of Polymer Systems
Spring 2007	MSEG633-010	Polymer Synthesis and Characterization Laboratory
Fall 2007	MSEG630-010	Introduction to Science and Engineering of Polymer Systems
Spring 2008	MSEG667-011 MSEG467-011	Tissue Engineering: the Convergence of Engineering and Biology
Fall 2008	MSEG632-010	Principles of Polymerization
Fall 2009	MSEG630-010 CHEG600-010	Introduction to Science and Engineering of Polymer Systems
Spring 2010	MSEG667-011 MSEG467-011	Tissue Engineering: the Convergence of Engineering and Biology
Fall 2010	MSEG630-010	Introduction to Science and Engineering of Polymer Systems

CHEG600-010

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Spring 2011	MSEG302-010	Materials Science for Engineers
Fall 2011	MSEG832-010	Principles of Polymerization

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Spring 2012	MSEG833-010	Polymer Synthesis and Characterization Laboratory
Fall 2012	MSEG460-010	Biomaterials and Tissue Engineering
	MSEG660-010	

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Spring 2013	MSEG832-010	Principles of Polymerization
Fall 2013	MSEG460-010	Biomaterials and Tissue Engineering
	MSEG660-010	

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Spring 2014	MSEG460-010	Biomaterials and Tissue Engineering
	MSEG660-010	
Fall 2014	MSEG833-010	Polymer Synthesis and Characterization Laboratory

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Spring 2015	MSEG832-010	Principles of Polymerization
Fall 2015	MSEG460-010	Biomaterials and Tissue Engineering
	MSEG660-010	

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Spring 2016	MSEG832-010	Principles of Polymerization
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**PROFESSIONAL SERVICE**

**Scientific Meetings Chaired and Organized**

- 2007      Session chair  
            “Biomaterials and Microscale Technologies for Biomedical Applications IV”  
            Annual Meeting of the Society for Biomaterials, Chicago, IL, April 18-21, 2007
- 2007      Abstract reviewer (35 total)  
            “Polysaccharide-Based Biomaterials”  
            Annual Meeting of the Society for Biomaterials, Chicago, IL, April 18-21, 2007
- 2008      Session chair  
            “Responsive Biomaterials for Biomedical Applications”  
            Materials Research Society National Meeting, San Francisco, CA, March 24-28, 2008
- 2008      Symposium Organizer and session chair  
            “Controlling Cellular Behavior with Polymer Synthesis and Engineering”  
            American Chemical Society National Meeting, New Orleans, LA, April 6-10, 2008
- 2009      Symposium Organizer and Session Chair  
            “Nanostructured Materials for Future Therapy”

- American Chemical Society (ACS) National Meeting, Salt Lake City, UT, March 23-24, 2009
- 2009 Session Chair:  
 “Synthesis of Bio-inspired Hierarchical Soft and Hybrid Materials”  
 Materials Research Society (MRS) Spring Meeting, San Francisco, CA, April 13-17, 2009
- 2009 Session chair:  
 “Engineering Biomaterials for Regenerative Medicine”  
 Materials Research Society Annual Meeting, Boston, MA, November 30 - December 4, 2009
- 2010 Symposium Organizer and Session Chair  
 “Glycosaminoglycan Biomaterials in Medicine”,  
 2010 Society for Biomaterials Annual Meeting, Seattle, WA, April 21-24, 2010
- 2010 Abstract Reviewer (total of 35)  
 “Polymeric Biomaterials for Tissue Engineering”  
 2010 Society for Biomaterials Annual Meeting, Seattle, WA, April 21-24, 2010
- 2011 Symposium Organizer and Session Chair  
 “Biomaterials for Tissue Regeneration”  
 2011 Materials Research Society Annual Meeting, Boston, MA, November 28-December 2, 2011
- 2012 Theme Organizer  
 “Materials for Health and Medicine”  
 244<sup>th</sup> American Chemical Society Annual Meeting, Philadelphia, PA, August 19-23, 2012
- 2011 Symposium Organizer and Session Chair  
 “Polymeric Biomaterials”  
 2012 American Chemical Society Annual Meeting, Philadelphia, PA, August 19-23, 2012
- 2013 Discussion Leader  
 “Biomimetic Polymers”  
 Gordon Research Conference, Polymers (East), June 9-14, 2013
- 2013 Abstract Reviewer (total of 22)  
 “Biomaterials”, “Tissue Engineering”  
 2013 Annual BMES meeting, Seattle, WA, September 25-28, 2013.
- 2013 Session Chair  
 “Biomaterials”  
 Annual BMES meeting, Seattle, WA, September 25-28, 2013.
- 2015 Symposium Organizer and Session Chair  
 “Polymeric Biomaterials”  
 249<sup>th</sup> American Chemical Society Annual Meeting, Denver, CO, March 22-26, 2015.

### **Memberships in Professional Organizations**

- 1998– Member, American Chemical Society (ACS)
- 2005– Member, Materials Research Society (MRS)
- 2006– Member, Biomedical Engineering Society (BMES)
- 2007– Member, Society for Biomaterials (SFB)

## **Review Activities**

### ***Proposal Reviews***

National Institutes of Health (NIH, R21, 2006); National Science Foundation (NSF, DMR, 2007); American, Chemical Society (ACS, PRF, 2007); Ontario Centers of Excellence (OCE, 2008); NSF (DMR, 2008); NIH (Special Emphasis Panel, 2008); Natural Sciences and Engineering Research Council of Canada (NSERC, 2008); NSF (DMR, 2008); NIH (R01, 2008); NIH (Challenge Grants, 2009); NSF (DMR, 2009); NSF (MPS, 2009); NIH (National Centers, 2010); ACS (PRF, 2010); NIH (Loan Payment Applications, 2011); US Army (2011); NSF (PREM, 2012); NIH (National Research Service Fellowship, 2012); NIH (P30, 2013); NSF (DMR, 2013); NSF (DMR, 2014); NSF (MPS, 2014); NIH (Special Emphasis Panel, 2015); NIH (Enabling and Bioanalytical and Imaging Technologies, 2015); NSF/FDA (2015); NSF (DMR, 2016); NIH (R21, R13, 2016)

### ***Journal Reviews***

ACS Applied Materials & Interfaces; ACS Biomaterials Science & Engineering; ACS Macro Letters; ACS Nano, Acta Biomaterialia; Advanced Functional Materials; Advanced Healthcare Materials; Advanced Materials; Angewandte Chemie International Edition; Annals of Biomedical Engineering; Applied Surface Science; Bioconjugate Chemistry; Bioinspiration & Biomimetics; Biomacromolecules; Biomaterials; Biomaterials Science; Biotechnology Advances, Biotechnology Progress; Chemical Communications; Chemistry of Materials; Current Opinion in Chemical Engineering; Industrial & Engineering Chemistry Research; Journal of the American Chemical Society; Journal of Biomedical Materials Research; Journal of Biomechanics; Journal of Fluorine Chemistry; Journal of Materials Chemistry; Journal of Biomaterial Science Polymer Edition; Journal of Controlled Release; Journal of Orthopaedic Research; Journal of Polymer Science; Journal of Tissue Engineering and Regenerative Medicine; Journal of Visualized Experiments; Lab on a Chip; Langmuir; Macromolecules; Macromolecular Bioscience; Macromolecular Chemistry & Physics; Macromolecule Rapid Communication; Microscopy Research and Technique; Molecular Pharmaceutics; Nanotechnology; Nano Today; Nature Communication; Nature Materials; Nature Protocols; PLoS One; Polymer; Polymer Chemistry; RSC Advances; Recent Patent on Nanotechnology; Small; Soft Matter; Tissue Engineering; Wound Repair and Regeneration

## **UNIVERSITY SERVICE**

- 2005– Member of UD WISE (women in Science and Engineering)
- 2006–2010 Graduate Student Recruitment Committee, Department of Materials Science and Engineering, University of Delaware
- 2006–2007 Departmental Seminar Organizer, Department of Materials Science and Engineering, University of Delaware
- 2007 Senior Thesis Reader, University of Delaware



- 2008–2010 College of Engineering Ad Hoc Election Committee, University of Delaware
- 2009– Award Committee, Department of Materials Science and Engineering, University of Delaware
- 2009–2011 University Senate Committee on Faculty Welfare and Privileges, University of Delaware
- 2008 Department Faculty Search Committee, Materials Science and Engineering, University of Delaware
- 2008, 12, 14 Department Staff Search Committee, Materials Science and Engineering, University of Delaware
- 2009– Director, MSEG Cell Culture Facility
- 2009– Director, MSEG Polymer Characterization Facility
- 2010–2012 Dean’s Advisory Committee, School of Engineering, University of Delaware
- 2010–2015 Member of the Executive Committee, Biomedical Engineering Program, University of Delaware
- 2010 Faculty Search Committee, Department of Chemistry and Biochemistry, University of Delaware
- 2010-2011 Faculty Search Committee, Soft Cluster Hire, Department of Chemistry and Biochemistry and Department of Materials Science and Engineering, University of Delaware
- 2010– Director, Graduate Program, Department of Materials Science and Engineering, University of Delaware
- 2011 Panel Member, Academic Program Review, Department of Chemistry and Biochemistry, University of Delaware
- 2011– 2013 Director, Graduate Program, Biomedical Engineering Program, University of Delaware
- 2013 Member of the Search Committee, Vice Provost for Graduate and Professional Education, University of Delaware
- 2014 – Director, Morphology and Mechanical Testing (MMT) Core, NIH-COBRE: Molecular Design of Advanced Biomaterials
- 2014 Department Chair Search Committee, Materials Science and Engineering, University of Delaware
- 2015 Chair, Committee on Tenure and Promotion, Department of Biomedical Engineering, University of Delaware
- 2015 Reviewer and Panelist, Center for Biomechanical Engineering Research (CBER) Research Retreat, University of Delaware
- 2016-present Mentor, University of Delaware Faculty Mentoring Program

**COMMUNITY SERVICE**

- 1999–2001 Outreach program coordinator and participant, Department of Polymer Science and Engineering, University of Massachusetts, Amherst
- 2002–2005 Outreach program coordinator and participant, The Langer Lab, Massachusetts Institute of Technology
- 2006 Organizer and participant, Hands-on lab demonstration, Lego League Teams, University of Delaware
- 2007 Organizer and participant, Hands-on lab demonstration, Engineering Cool Stuff Summer Camp, University of Delaware
- 2008 Organizer and participant, Hands-on lab demonstration, St. Mark’s High School, University of Delaware
- 2009 Mentor and host, NSF-supported Nature InSpired Engineering (NISE) Program for REU and RET, University of Delaware
- 2010 Organizer and participant, Hands-on lab demonstration, Governor’s School, University of Delaware
- 2010 Panel Member, National Workshop for Postdocs, Senior Graduate Students and New Faculty in Engineering, University of Delaware
- 2010-2015 Faculty volunteer, General commencement ceremony, University of Delaware
- 2011 Organizer and participant, Hands-on lab demonstration, DeCastle High School, University of Delaware
- 2011, 2012 Reviewer and Judge, Siemens Competition in Math, Science and Technology, National Recognition and Scholarship Programs
- 2011-2016 Hands-on lab demonstration, Blue & Gold Recruitment Weekend, University of Delaware
- 2014, 2015 Organizer and participant, Weekend minority recruitment: GOLEAD – Graduate Opportunities Learn, Engage, And Discover, University of Delaware