Melissa A. Grunlan, Ph.D.

Curriculum Vitae

Holder of the Charles H. and Bettye Barclay Professorship in Engineering
Texas A&M University Presidential Impact Fellow
Fellow – American Institute for Medical and Biological Engineering (AIMBE)
Fellow – American Chemical Society (ACS)
Texas A&M University
Department of Biomedical Engineering
5030 Emerging Technologies Building; 3120 TAMU
College Station, Texas 77843-3120
Office: +1 979 845 2406 Mobile: +1 626 298 0342
e-mail: mgrunlan@tamu.edu **website:** grunlanlab.tamu.edu

EDUCATION

August 2001- August 2004	**Ph.D., Chemistry** UNIVERSITY OF SOUTHERN CALIFORNIA (Los Angeles, CA) *Advisor: Prof. William P. Weber* *Dissertation Title: Crosslinked Siloxanes: Preparation and Properties*
August 1995- May 1997	**M.S., Polymers and Coatings** NORTH DAKOTA STATE UNIVERSITY (Fargo, ND) *Advisor: Prof. J. Edward Glass* *Thesis Title: Carbohydrate Polymers in Coatings*
August 1991- August 1995	**B.S., Chemistry** NORTH DAKOTA STATE UNIVERSITY (Fargo, ND)

ACADEMIC RESEARCH & PROFESSIONAL EXPERIENCE (post-graduate school)

September 1, 2017 - present	**Full Professor** **TEXAS A&M UNIVERSITY** (College Station, TX) Dept. of Biomedical Engineering Dept. of Materials Science & Engineering (courtesy) Dept. of Chemistry (courtesy)
September 1, 2011- August 31, 2017	**Associate Professor** (with tenure) **TEXAS A&M UNIVERSITY** (College Station, TX) Dept. of Biomedical Engineering Dept. of Materials Science & Engineering (courtesy)
August 15, 2005- August 31, 2011	**Assistant Professor** **TEXAS A&M UNIVERSITY** (College Station, TX) Dept. of Biomedical Engineering Dept. of Materials Science & Engineering (courtesy)
October 2013 - Present	**Director of Undergraduate of Programs** **TEXAS A&M UNIVERSITY** (College Station, TX) Dept. of Biomedical Engineering
Sept.15, 2004- August 12, 2005	**Post-doctoral Research Associate** **TEXAS A&M UNIVERSITY** (College Station, TX) Dept. of Chemistry *Advisor: Prof. David E. Bergbreiter* *Polymer-supported catalysts*

INDUSTRIAL RESEARCH & PROFESSIONAL EXPERIENCE:

June 1997- August 2001 — **Senior Chemist**
H.B. FULLER COMPANY (St. Paul, MN)
Latex emulsion polymers

ACADEMIC RESEARCH & PROFESSIONAL EXPERIENCE (other)

January 2002- August 2004 — **Research Assistant** (Ph.D. Thesis Research)
UNIVERSITY OF SOUTHERN CALIFORNIA (Los Angeles, CA)
Dept. of Chemistry (with Prof. William P. Weber)
Synthesis and characterization of silicon-containing polymers & coatings

January 1996- May 1997 — **Research Assistant** (M.S. Thesis Research)
NORTH DAKOTA STATE UNIVERSITY (Fargo, ND)
Dept. of Polymers & Coatings (with Prof. J. Edward Glass)
Synthesis and coating rheology of cellulose-based associative thickeners

August 1993 to December 1994 — **Undergraduate Research Assistant** (Undergraduate Research)
NORTH DAKOTA STATE UNIVERSITY (Fargo, ND)
Dept. of Chemistry (with Prof. Mukund P. Sibi)
Synthesis of chiral liquid crystalline mesogens and natural products

June 1993 to August 1993 — Undergraduate Research Assistant (Undergraduate Research)
NORTH DAKOTA STATE UNIVERSITY (Fargo, ND)
Dept. of Chemistry (with Prof. Stephen Castellino)
Synthesis of aluminum cations in chelated structures.

MAJOR FUNDED RESEARCH PROJECTS:

CURRENT:

"TAMU X-Grant: Mastering Friction to Reduce Current and Future Energy Demands"
Texas A&M University
Lead: J. Batteas
Co-Leads: J. Felts, C. Hipwell, G. Pharr, K. Wooley
Team Members: S. Banerjee, M. Brenckman, M. Green, M. Grunlan, R. Lester, H. Liang, A. Polycarpou, M. Radovic, Ziaofen Qian
7/1/2018 – 6/30/2020
Total costs: $500,000

"Transformative and Affordable Medical Technologies and Systems: Toward Improved Diabetes Health for Underserved Populations"
The Kleberg Foundation
PI: G. Coté
Co-PI's: M. Grunlan, E. Flores, F. Sasangohar, M. Lawley, R. Guitierrez-Osuna
1/1/2018 – 12/31/2021
Total costs: $957,789

Engineering Research Center for Precise Advanced Technologies & Health Systems for Underserved Populations (PATHS-UP)
NSF – EEC-1648451
PI: G. Coté (TAMU),
Co-PI's: M. Grunlan, M. Lawley, B. Haridas, A. Vedlitz, K. Maitland, R. Jafari, J. Jo, R. Guitierrez-Osuna, L. Hudson, N. Deutz (TAMU); A. Sabharwal (Rice); J. Ramella-Roman (FIU); Aydogan Ozcan (UCLA)
10/1/2017 – 9/30/2022
Total costs (awarded to date): $3.5M

"Bioactive, 'Self-fitting' Shape Memory Polymer (SMP) Scaffolds to Treat Cranial Bone Defects"
National Institute of Health (NIH) - 1R01DE025886-01A1
PI: M. Grunlan
Co-Is: W.B. Saunders (TAMU), R. Pool, Jr. (TAMU), M. Moreno (TAMU), M.S. Hahn (RPI)
2/1/2017 – 1/31/2021
Total costs: $1,906,953

"Evaluating and Comparing the Regenerative Potential of Different Stem/Multiprogenitor Cell Types Seeded on a Novel Shape Memory Polymer Scaffold for Craniomaxillofacial Critical Size Bone Defects"
Naval Medical Logistics Command (NAVY) and Naval Medical Research and Development - San Antonio (NMRC-SA)
PI: Lt. Col. W. Lien, Co-PI: CDR F. Sheppard (NAMRU-SA), Assoc. Investigators: CAPT J. Stahl, A. Burdette (NAMRU-SA), Consultant: M. Grunlan
9/30/2016 – 9/30/2019
Total costs: $2,140,150

"Pre-clinical Bone Scaffold Study"
Industrial Sponsor
PIs: M. Grunlan, Co-PI: W.B. Saunders (TAMU Vet School)
1/1/2016 - 12/31/2019
Total costs: $44,830

COMPLETED:

"Development of Silicone-based Materials and Useful Components using Additive Manufacturing"
Los Alamos National Lab (LANL)
PI: M. Grunlan
11/1/2017 – 9/31/2018
Total costs: $125,000

"A Self-Cleaning Membrane to Extend the Lifetime of an Implanted Glucose Biosensor"
National Institute of Health (NIH) - 1R01DK095101-01A1
PI: M. Grunlan
Co-Is: G. Coté (TAMU), F. Clubb, Jr. (TAMU)
9/30/2012 - 8/31/2018
Total costs: $1,532,310

"Development of Silicone-based Materials and Useful Components using Additive Manufacturing"
Los Alamos National Lab (LANL)
PI: M. Grunlan
10/1/2016 – 9/31/2017
Total costs: $125,000

"Development of Silicone-based Materials and Useful Components using Additive Manufacturing"
Los Alamos National Lab (LANL)
PI: M. Grunlan
1/1/2016 – 9/31/2016
Total costs: $150,000

"Regenerative Osteochondral Plugs (ROPs) for the Treatment of Osteochondral Defects in Dogs"
American Kennel Club
PIs: W.B. Saunders (TAMU Vet School) and M Grunlan
1/1/2013 - 12/31/2016
Total costs: $120,872

"Mucoadhesive Spray"
Industrial Sponsor
PI: M. Grunlan
12/1/2014 - 3/30/2016
Total costs: $100,000

"Hybrid Inorganic-Organic Hydrogel Scaffolds for Osteochondral Regeneration"
National Institute of Health (NIH) - 1R03EB015202
PIs: M. Grunlan and M. Hahn (RPI)
4/1/2012 - 3/31/2014
Total costs: $141,599

Industrial Sponsor
PI: M. Grunlan
8/1/2013-7/31/2014
Total costs: $100,000

"Micropatterned Thermoresponsive Nanocomposite Hydrogel Surfaces with Self-Cleaning Behavior"
National Science Foundation (NSF) 854462
PI: M. Grunlan
Co-PIs: A. Han (TAMU), M. Hahn (TAMU, RPI)
9/1/2009 - 8/31/2013
Total costs: $300,000

"Self-Cleaning Sensor Membranes to Improve Glucose Monitoring In Vivo"
National Institute of Health - 1R21DK082930-01
PI: M. Grunlan
Co-Is: G. Coté (TAMU), M. Pishko (TAMU)
7/17/2009 - 6/30/2012
Total costs: $385,748

"Novel Star-PDMS/PEO Hydrogel Scaffolds with Tunable Properties for Tissue Engineered Vascular Grafts (TEVGs)"
National Institute of Health - 1R21HL089964-01
PIs: M. Grunlan and M. Hahn (TAMU)
7/1/2008 – 6/30/2011
Total costs: $376,837

PATENTS:

Corresponding author[+] II Advised post-doc[#] II Advised graduate student*II
Co-advised graduate student [(*)] II Advised UG student**

Patents:

4. "Amphiphilic Siloxane Materials to Reduce Adhesion Events in Medical, Marine and Industrial Applications," **Melissa A. Grunlan**, Ranjini Murthy*. US Utility Application filed; **10/16/2016**.
3. "Implant-based Repair of Osteochondral Articular Defects," **Melissa A. Grunlan**, William B. Saunders, Mariah S. Hahn. PCT Application filed; **9/3/2016**.
2. "Self-Cleaning Membranes for Medical Devices," **Melissa A. Grunlan**, Gerard L. Coté, Alexander A. Abraham[(*)], Ruochong Fei*. PCT Application filed; **1/26/2016**.
1. "Shape Memory Polymer Scaffolds for Tissue Defects," **Melissa A. Grunlan**, Dawei Zhang*, Cody A. Schoener*, William B. Saunders. US 9,925,297 B2; issued **3/24/2018**.

PEER-REVIEWED JOURNAL PUBLICATIONS:

Corresponding author[+] II Advised post-doc[#] II Advised graduate student*II
Co-advised graduate student [(*)] II Advised UG student**

67. Dogbevi, K.S.; Ngo, B.K.D.*; Blake, C.W.; **Grunlan, M.A.**[+]; Coté, G.L[+] "Pumpless, 'self-driven' microfluidic channels with controlled blood flow using an amphiphilic silicone," *in review*.
66. Frassica, M.T.*; Jones, S.K.**; Diaz-Rodriguez, P.; Hahn, M.S.; **Grunlan, M.A**.[+] "Incorporation of a silicon-based polymer to PEG-DA templated hydrogel scaffolds for bioactivity and osteoinductivity," *in revision*.
65. Kim, D.S.; Suriboot, J.;[#] **Grunlan, M.A.**; Tai, B.L.[+] "Silicone 3D printing with an optically created dead zone," *Addit. Manuf*., **2019**, *accepted*.
64. Means, A.K.*; Dong, P.*; Clubb, Jr, F.J.; Friedemann, M.C.; Colvin, L.E.; Shrode, C.A.**; Coté, G.L; **Grunlan, M.A.**[+] "Thermoresponsive, self-cleaning double network hydrogels exhibit reduced foreign body reaction and superior mechanical properties over PEG," *J. Mater. Sci. Mater. Med.* **2019**, *30*, 79.
63. Means, A.K.*; **Grunlan, M.A.**[+] "Modern strategies to achieve tissue-mimetic, mechanically robust hydrogels," *ACS Macro Lett.,* **2019**, *8*, 705-713.
62. Means, A.K.*; Shrode, C.A.**; Whitney, L.V.**; Ehrhardt, D.A.;** **Grunlan, M.A.**[+] "Double network hydrogels that mimic the modulus, strength and lubricity of cartilage," *Biomacromolecules*, **2019**, *20*, 2034-2042.
61. Zouaghi, S.; Frémiot, J.; André, C.; **Grunlan, M.A.**; Gruescu, C.; Delaplace, G.; Duquesne, S.; Jimenez, M.[+] "Investigating the effect of an antifouling surface modification on the environmental impact of pasteurization process: An LCA study," *ACS Sustainable Chem. Eng.,* **2019**, *7*, 9133-9142.
60. Ngo, B.K.D.*; Lim, K.K.**; Stafslien, S.J.; **Grunlan, M.A.**[+] "Stability of silicones modified with PEO-silane amphiphiles: Impact of structure and concentration, *Polym. Degrad. Stab.*, **2019**, *163*, 136-142.
59. Woodard, L.N.;* **Grunlan, M.A.**[+] "Hydrolytic degradation of PCL-PLLA semi-IPNs exhibiting rapid, tunable degradation," *ACS Biomater. Sci. Eng.,* **2019**, *5*, 498-508.
58. Diaz-Rodriguez, P.; Erndt-Marino, J.; Munoz-Pinto, D.J.; Samavedi, S.; Beardon, R.; **Grunlan, M.A.**; Saunders, W.; Hahn, M.S.[+] "Toward zonally-tailored scaffolds for osteochondral differentiation of synovial mesenchymal stem cells," *J. Biomed. Mater. Res. Part B: Appl. Biomat.,* **2019**, 107B, 2019-2029.

57. Locke, A.K.; Means, A.K.*; Dong, P.*; Nichols, T.J.; Coté, G.L.; **Grunlan, M.A.**[+] "A layer-by-layer (LbL) approach to retain an optical glucose sensing assay within the cavity of a hydrogel membrane," *ACS Applied Bio Mater.,* **2018**, *1*, 1319-1327. *(ACS Editors' Choice Selection)*

56. Abraham, A.A.[(*)]; Means, A.K.*; Clubb, Jr, F.J.; Fei, R.*; Locke, A.K.; Gacasan, E.G.**; Coté, G.L; **Grunlan, M.A.**[+] "Foreign body reaction to a subcutaneously implanted self-cleaning, thermoresponsive hydrogel membrane for implanted glucose biosensors," *ACS Biomater. Sci. Eng.,* **2018**, *4*, 4104-4111.

55. Zouaghi, S.; Barry, M.E.**; Bellayer, S.; Lyskawa, J.; André, C.; Delaplace, G.; **Grunlan, M.A.**[+]; Jimenez, M.[+] "Antifouling amphiphilic silicone coatings for dairy fouling mitigation on stainless steel," *Biofouling*, **2018**, *34*, 769-783.

54. Woodard, L.N.;* **Grunlan, M.A.**[+]; "Hydrolytic degradation and erosion of polyester biomaterials," *ACS Macro Lett*., **2018**, *7*, 976-982.

53. Gharat, T.P.; Diaz-Rodriguez, P.; Erndt-Marino, J.D.; Jimenez Vergara, A.C.; Munoz Pinto, D.J.; Beardon, R.N.; Huggins, S.S.; **Grunlan, M.;** Saunders, W.B.; Hahn, M.S.[+] "A canine *in vitro* model for evaluation of marrow-derived mesenchymal stromal cell-based bone scaffolds," *J. Biomed. Mater. Res. Part A,* **2018**, *106*, 2382-2393.

52. Woodard, L.N.*; Kmetz, K.T.**; Roth, A.A.**; Page, V.M.**; **Grunlan, M.A.**[+] "Porous poly(ε-caprolactone)-poly(L-lactic acid) semi-interpenetrating networks as superior, defect-specific scaffolds with potential for cranial bone defect repair," *Biomacromolecules,* **2017***, 18,* 4075-4083.

51. Means, A.K.*; Ehrhardt, D.A.**; Whitney, L.V.**; **Grunlan, M.A.**[+] "Thermoresponsive double network hydrogels with exceptional mechanical properties," *Macromol. Rapid Comm.,* **2017***, 38,* 1700351-1700357.

50. Ngo, B.K.D.*; **Grunlan, M.A.**[+] "Protein resistant polymeric biomaterials," *ACS Macro Lett.*, **2017**, *6*, 992-1000.

49. Hawkins, M.L.[#]; Schott, S.S.**; Grigoryan, B.**; Rufin, M.A.*; Ngo, B.K.D.*; Vanderwal, L.; Stafslien, S.J.; **Grunlan, M.A.**[+] "Anti-protein and anti-bacterial behavior of amphiphilic silicones," *Polym. Chem.*, **2017**, *8*, 5239-5251.

48. Gacasan, E.G**; Sehnert, R.M.**; Ehrhardt, D.A.**; **Grunlan, M.A.**.[+] "Templated, macroporous PEG-DA hydrogels as tissue engineering scaffolds," *Macromol. Mater. Eng.,* **2017**, 302, 16000512 – 16000518.

47. Rufin, M.A.*; Ngo, B.K.D.*; Barry, M.E.**; Page, V.M.**; Hawkins, M.L.[#]; Stafslien, S.J.; **Grunlan, M.A.**.[+] "Antifouling silicones based on surface-modifying additive (SMA) amphiphiles," *Green Mater.,* **2017**, *5,* 4-13.

46. Woodard, L.N.*; Page, V.M.**; Kmetz, K.T.**; **Grunlan, M.A.**.[+] "PCL-PLLA semi-IPN shape memory polymers (SMPs): Degradation and mechanical properties," *Macromol. Rapid Comm.,* **2016**, *37*, 1972-1977.

45. Rufin, M.A.*; Barry, M.E.**; Adair, P.A.**; Hawkins, M.L.[#]; Raymond, J.E.; **Grunlan, M.A.**.[+] "Protein resistance efficacy of PEO-silane amphiphiles: Dependence on PEO-segment length and concentration in silicone," *Acta Biomaterialia,* **2016**, *41*, 247-252.

44. Fei, R.*, Means, A.K.*, Abraham, A.A.(*); Locke, A.K.; Coté; G.L.; **Grunlan, M.A.**.[+] "Self-cleaning, thermoresponsive P(NIPAAm-*co*-AMPS) double network membranes for implanted glucose biosensors," *Macromol. Mater. Eng.*, **2016**, *301*, 935-943.

43. Faÿ, F.; Hawkins, M.L.[#]; Réhel, K.; **Grunlan, M.A.**[+]; Linossier, I.[+] "Non-toxic, anti-fouling silicones with variable PEO-silane amphiphiles content," *Green Mater.,* **2016**, *4*, 53-62.

42. Erndt-Marino, J.D.; Munoz-Pinto, D.J.; Samavedi, S.; Jimenez-Vergara, A.C.; Woodard, L.*; Zhang, D.*; **Grunlan, M.A.**.; Hahn, M.S.[+] "Evaluation of the osteoinductive capacity of polydopamine-coated poly(ε-caprolactone) diacrylate shape memory foams," *ACS Biomat. Sci. Eng.,* **2015**, *1,* 1220-1230.

41. Nail, L.N.*; Zhang, D.*; Reinhardt, J.L.**; **Grunlan, M.A.**.[+] "Fabrication of a bioactive, PCL-based 'self-fitting' shape memory polymer scaffold," *J. of Visualized Experiments (JOVE)*, **2015**, *104,* e52981.

40. Rufin, M.A.*; Gruetzner, J.A.**; Hurly, M.J.**; Hawkins, M.L.[#]; Raymond, E.S.; Raymond, J.E.; **Grunlan, M.A.**.[+] "Enhancing the protein resistance of silicone via surface-restructuring PEO-silane amphiphiles with variable PEO length," *J. Mater. Chem. B.* **2015**, *3,* 2816-2825.

39. Yu, Y.-J.; Infanger, S.; **Grunlan, M.A.**; Maitland, D.J.[+] "Silicone membranes to inhibit water uptake into thermoset polyurethane shape-memory polymer conductive composites," *J. Appl. Polym. Sci.* **2015**, *132*, 41226-41234.

38. Zhang, D.*; George, O.J.**; Petersen, K.M.**; Jimenez-Vergara, A.C.; Hahn, M.S. **Grunlan, M.A.**[+] "A bioactive "self-fitting" shape memory polymer (SMP) scaffold with potential to treat craniomaxillofacial (CMF) bone defects," *Acta Biomaterialia,* **2014**, *10*, 4597-4605.

37. Fei, R.*; Hou, H.; Munoz-Pinto, D.; Han, A.; Hahn, M.S.; **Grunlan, M.A.**[+] "Thermoresponsive double network micropillared hydrogels for cell release," *Macromol. Biosci.;* **2014**, *14*, 1346-1352.

36. Hawkins, M.L.[#]; Rufin, M.A.*; Raymond, J.E.[+]; **Grunlan, M.A.**[+] "Direct observation of the nanocomplex reorganization of antifouling silicones containing a highly mobile PEO-silane amphiphile," *J. Mater. Chem. Part B,* **2014***, 2*, 5689-5697.

35. Hawkins, M.L.[#]; Fav, F.; E. Cheverau; Linossier, I.[+]; **Grunlan, M.A.**[+] "Bacteria and diatom resistance of silicone modified with PEO-silane amphiphiles," *Biofouling,* **2014***, 30,* 247-258.

34. Abraham, A.A.[(*)]; Fei, R.*; Coté, G.L.; **Grunlan, M.A.**[+] "A self-cleaning membrane to extend the lifetime of an implanted glucose biosensor," *ACS Appl. Mater. & Interfaces,* **2013**, *5*, 12832-12838.

33. Bailey, B.M.*; Nail, L.N.**; **Grunlan, M.A.**[+] "Continuous gradient scaffolds for rapid screening of cell-material interactions and interfacial tissue engineering," *Acta Biomaterialia*, **2013**, *9*, 8254-8261.

32. Fei, R.*; George, J.T.**; Park, J.**; Means, A.K.**; **Grunlan, M.A.**[+] "Ultra strong thermoresponsive hydrogels," *Soft Matter*. **2013**, *9*, 2912-2919.

31. Zhang, D.*; Petersen, K.M.*; **Grunlan, M.A.**[+] "PDMS-PCL shape memory polymer (SMP) foams," *ACS Appl. Mater. & Interfaces*. **2012**, *5*, 186-191.

30. Bailey, B.M.*; Fei, R.*; Munoz-Pinto, D.; Hahn, M.S.; **Grunlan, M.A.**[+] *"*$PDMS_{star}$-PEG hydrogels prepared via solvent-induced phase separation (SIPS) and their potential utility as tissue engineering scaffolds," *Acta Biomaterialia,* **2012**, *8,* 4324-4333.

29. Munoz-Pinto, D.; Grigoryan, B.; Long, J.; **Grunlan, M.A.;** Hahn, M.S.[+] "An approach for assessing hydrogel hydrophobicity," *J. Biomed. Mater. Res. Part A*, **2012**, 100, 2855-2860.

28. Hawkins, M.L.*; **Grunlan, M.A.**[+] "Protein resistance of silicones prepared with a PEO-silane amphiphile," *J. Mater. Chem.* **2012**, *22,* 19540-19546.

27. Munoz-Pinto, D.; Jimenez-Vergara, A.; Hou, Y.*; Hayenga, H.N., **Grunlan, M.A**.; Hahn, M.S.[+] "Osteogenic potential of poly(ethylene glycol)-poly(dimethylsiloxane) hybrid hydrogels," *Tissue Eng. Part A* **2012***, 18*, 1710-1719.

26. Zhang, D.*; Burkes, W.L.**; Schoener, C.A.*; **Grunlan, M.A.**[+] "Porous inorganic-organic shape memory polymers," *Polymer* **2012**, *53*, 2935-2941.

25. Fei, R.*; George, J.T.**; Park, J.**, **Grunlan, M.A.**[+] *"*Thermoresponsive nanocomposite double network hydrogels," *Soft Matter* **2012**, *8,* 481-487. *Top 10 Most-Read Soft Matter Articles in Nov. 2011.*

24. Bailey, B.M.*; Hui, V.**; Fei, R.*, **Grunlan, M.A.**[+] *"*Tuning PEG-DA hydrogel properties via solvent-induced phase separation (SIPS)," *J. Mater. Chem.* **2011**, *21,* 18776-18782.

23. Hou, Y.*; Fei, R.*; Burkes, J.C.**; Lee, S.D.**, Munoz-Pinto, D.; Hahn, M.S.; **Grunlan, M.A.**[+] **"**Thermoresponsive nanocomposite hydrogels: Transparency, rapid deswelling and cell release," *J. Biomat. Tissue Eng.* **2011***, 1*, 93-100.

22. Zhang, D.*; Giese, M.L.**; Prukop, S.L.**; **Grunlan, M.A.**[+] "Polycaprolactone-based shape memory polymers with variable polydimethylsiloxane soft segments," *J. Polym. Sci., Part A: Polym. Chem.,* **2011***, 49,* 754-761*.*

21. Murthy, R.*; Bailey, B.M.*; Valentin-Rodriguez, C.; Ivanisevic, A.; **Grunlan, M.A.**[+] "Amphiphilic silicones prepared with branched PEO-silanes with siloxane tethers," *J. Polym. Sci., Part A: Polym. Chem.,* **2010***, 48,* 4108-4119.

20. Hou, H.; Hou, Y.*; **Grunlan, M.A.**; Munoz-Pinto, D.J.; Hahn, M.S.; Han, A.[+] "Micropatterning of poly(*N*-isopropylacrylamide) PNIPAAm hydrogels: Effects of thermosensitivity and cell release behavior," *Sensors and Material,* **2010***, 22,* 109-120.

19. Gant, R.[(*)]; Abraham, A.[(*)]; Hou, Y.*; **Grunlan, M.A.**[+]; Coté, G.L. "Design of a self-cleaning thermoresponsive nanocomposite hydrogel membrane for implantable biosensors," *Acta Biomaterialia,* **2010***, 6,* 2903-2910.

18. Munoz-Pinto, D.J.; McMahon, R.E.; Kanzelberger, M.A.; Jimenez-Vergara, A.C.; **Grunlan, M.A.**; Hahn, M.S.[+] "Inorganic-organic hybrid scaffolds for osteochondral regeneration," *J. Biomed. Mater*. Res. Part A, **2010***, 94,* 112-121.

17. Hou, Y.*; Schoener, C.A.*; Regan, K.R.**; Munoz-Pinto, D.; Hahn, M.S.; **Grunlan, M.A.**[+] "Photo-crosslinked $PDMS_{star}$-PEG hydrogels: Synthesis, characterization, and potential application for tissue engineering scaffolds," *Biomacromolecules* **2010***, 11*, 648-656.

16. Schoener, C.A.*; Weyand, C.B.[**]; Murthy, R.M.*; **Grunlan, M.A.**[+] "Shape memory polymers with silicon-containing segments," *J. Mater. Chem.* **2010**, *20*, 1787-1793.

15. Hou, H.; Kim, W.; **Grunlan, M**.; Han, A.[+] "A thermoresponsive hydrogel poly(*N*-isopropylacrylamide) micropatterning method using microfluidics techniques," *J. Micromech. Microeng*. **2009**, *19*, 127001-127007.

14. Gant, R.[(*)]; Hou, Y.*; **Grunlan, M.A.**, Coté, G.L.[+] "Development of a self-cleaning sensor membrane for implantable biosensors," *J. Biomed. Mater. Res.* **2009**, 90A, 695-701

13. Pierce, L.M.[+]; **Grunlan, M.A.**; Hou Y.*; Baumann, S.S.; Kuehl, T.J.; Muir, T.W. "Biomechanical properties of synthetic and biologic graft materials following long-term implantation in the rabbit abdomen and vagina," *Am. J. Obstet. Gynecol.* **2009**, *200*, 549.e1-e8.

12. Murthy, R.*; Shell, C.E.**; **Grunlan, M.A.**[+] "The influence of poly(ethylene oxide) grafting via siloxane tethers on protein adsorption" *Biomaterials* **2009***, 30,* 2433-2439*.*

11. Hahn, M.S.[+]; Liao, H; Munoz-Pinto, D.; Xin, Q.; Hou, Y.*; **Grunlan, M.A.**; "Influence of hydrogel mechanical properties and mesh size on vocal fold fibroblast extracellular matrix production," *Acta Biomaterialia* **2008**, *4*, 1161-1171.

10. Hou, Y.*; Matthews, A.R.**; Smitherman, A.M.**; Bulick, A.S.; Hahn, M.S.; Hou, H.; Han, A.; **Grunlan, M.A.**[+] "Thermoresponsive nanocomposite hydrogels with cell-releasing behavior," *Biomaterials* **2008**, *29*, 3175-3184.

9. Murthy, R.*; Cox, C.D.**; Hahn, M.S.; **Grunlan, M.A.**[+] "Protein-resistant silicones: Incorporation of poly(ethylene oxide) via siloxane tethers," *Biomacromolecules,* **2007***, 8,* 3244-3252.

8. **Grunlan, M.A.**; Regan, K.R.; Bergbreiter, D.E.[+] "Liquid/liquid separation of polysiloxane-supported catalysts," *Chem. Comm.* **2006***, 1715-1717. Selected as HOT TOPIC article.*

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3. **Grunlan, M.A.;** Lee, N.S.; Weber, W.P.[+] "Synthesis of 1,9-bis[glycidyloxypropyl]penta-(1'H,1'H,2'H,2'H-perfluoroalkylmethylsiloxane)s and their copolymerization with piperazine," *Polymer* **2004**, *45*, 2517-2523.

2. **Grunlan, M.A**.; Mabry, J.M.; Weber, W.P.[+] "Synthesis of fluorinated copoly(carbosiloxane)s by Pt-catalyzed hydrosilylation copolymerization," *Polymer* **2003**, *44*, 981-987.

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BOOK CHAPTERS:

Corresponding author[+] **II** Advised post-doc[#] **II** Advised graduate student*[**II**]
Co-advised graduate student [(*)] **II** Advised UG student**

4. Rufin, M.A.*; **Grunlan, M.A**.[+] "Surface-Grafted Polymer Coatings: Preparation, Characterization, and Antifouling Behavior," in Functional Polymer Coatings: Principles, Methods, and Applications, First Edition. Wu, L.; Baghdachi, J., Eds. John Wiley & Sons, Inc., **2015**, pp. 218-238.

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PRESENTATIONS (by M. Grunlan):

127. "Orthopedic biomaterials enabled by network architecture," presented at the ***University of Zagreb,*** Zagreb, Croatia, June 6, 2019. [talk - INVITED]

127. "Orthopedic biomaterials enabled by network architecture," presented at the ***Ss. Cyril and Methodius University,*** Skopje, North Macedonia, May 30, 2019. [talk - INVITED]

126. "Functional polymeric biomaterials enabled by network architecture," presented at the ***University of Arkansas,*** Fayetteville, AR, USA, April 19, 2019. [talk - INVITED]

125. "Orthopedic biomaterials enabled by network architecture," presented at the ***University of Cincinnati***, Cincinnati, OH, USA, April 12, 2019. [talk - INVITED]

124. "Self-cleaning, thermoresponsive membranes for implanted glucose biosensors," presented at the ***Florida International University***, Miami, FL, USA, March 11, 2019. [talk - INVITED]

123. "Amphiphilic silicones with broad-spectrum anti-fouling behavior," presented at the ***University of Lille***, Lille, France, March 11, 2019. [talk - INVITED]

122. "Orthopedic biomaterials enabled by network architecture," presented at the ***University of Fribourg, Adolphe Merkle Institute,*** Fribourg, Switzerland, February 19. 2019. [talk - INVITED]

121. "Functional polymeric biomaterials enabled by network structure," presented at ***Georgia Tech University, Georgia Tech Polymer Network***, Atlanta, GA, January 24, 2019. [talk - INVITED]

120. "Non-toxic amphiphilic silicones with broad-spectrum anti-fouling behavior," presented at the ***Frontiers in Green Materials*** symposium, London, United Kingdom, December 17, 2018. [talk - INVITED]

119. "Biomaterials for regeneration and replacement of orthopedic tissues," presented at ***The University of Bristol***, Department of Materials Science & Engineering, Bristol, United Kingdom, December 15, 2018. [talk - INVITED]

118. "Self-cleaning, thermoresponsive double network hydrogels for implantable glucose biosensors," presented at ***National Biomedical Engineering Society (BMES) Meeting***, Atlanta, GA, USA, Octoober17-20, 2018. [talk]

117. "Self-fitting shape memory polymer scaffolds to treat craniomaxillofacial (CMF) bone defects," presented at ***Polymers in Medicine and Biology Meeting***, Napa, CA, USA, September 9-12, 2018. [talk – INVITED]

116. "Shape memory polymer scaffolds based on PCL-PLLA semi-IPNs," presented at the 256th ***American Chemical Society (ACS) National Meeting***, Boston, MA, USA, August 19-23, 2018. [talk – INVITED]

115. "Amphiphilic silicones with broad-spectrum anti-fouling behavior," presented at the 256th ***American Chemical Society (ACS) National Meeting***, Boston, MA, USA, August 19-23, 2018. [talk – INVITED]

114. "Amphiphilic silicones with broad-spectrum anti-fouling behavior," presented at the ***19th International Conference on Marine Corrosion and Fouling***, Melbourne, FL, USA, June 24-29, 2018. [talk – INVITED KEYNOTE]

113. "Amphiphilic silicones with broad-spectrum anti-fouling behavior," presented at the ***4th Functional Polymeric Materials Conference***, Nassau, Bahamas, June 5-8, 2018. [talk - INVITED]

112. "Amphiphilic silicones with broad-spectrum anti-fouling behavior," presented at the ***101st Canadian Chemical Conference: 49th Silicon Symposium***, Edmonton, Alberta, Canada, May 30, 2018. [talk - INVITED]

111. "Degradable, 'Self-fitting' shape memory polymer scaffolds for cranial bone defect repair," presented at the ***Society for Biomaterials (SFB) National Meeting***, Atlanta, GA, United States, April 12, 2018. [talk]

110. "Double network hydrogels with high stiffness and ultra-high strength," presented at the 255th ***American Chemical Society (ACS) National Meeting***, New Orleans, LA, United States, March 21, 2018. [talk]

109. "Self-fitting shape memory polymer (SMP) scaffolds based on PCL-PLLA semi-IPNs with unique degradation behavior," presented at ***Milan Polymer Day***s, Milan, Italy, February 14-16, 2018. [talk - INVITED]

108. "Biomaterials designed to heal bone tissue," presented as the ***Ethel-Ashworth-Tsutsui Memorial Lecture***, February 8, 2018. [talk - INVITED]

107. "Shape memory polymer scaffolds based on PCL-PLLA semi-IPNs," presented at the ***Polymers & Nanotechnology Workshop,*** San Diego, CA, United States, December 17-20, 2017. [talk - INVITED]

106. "Broad spectrum anti-biofouling behavior of non-toxic amphiphilic silicones," presented at the ***Frontiers in Green Materials Symposium,*** London, United Kingdom, December 11, 2017. [poster]

105. "Self-cleaning membranes to control biofouling on implanted glucose biosensors," presented at the ***Tsinghua-US Polymer Symposium****, Tsinghua University, Dept. of Chemistry,* Beijing, China, October 16, 2017. [talk - INVITED]

104. "Self-cleaning membranes to control biofouling on implanted glucose biosensors," presented at the ***Joint Symposium on Frontiers in Polymer Science and Engineering with the Chinese Chemical Society Polymer Division (CCS-PD)***, Chengdu, China, October 13, 2017. [talk - INVITED]

103. "Self-fitting shape memory polymers (SMP) scaffolds based on PCL-PLLA semi-IPNs," presented at the ***3rd Functional Polymeric Materials,"*** Rome, Italy, June 14-19, 2017. [talk - INVITED]

102. "Self-fitting shape memory polymers (SMP) scaffolds to treat craniomaxillofacial (CMF) bone defects," presented at the ***6th Int'l Conference on Tissue Engineering in conjunction with the 3rd Int'l Conference on Regenerative Biomedical Materials***, Heraklion, Crete, Greece, June 14-19, 2017. [talk]

101. "Self-fitting shape memory polymers (SMP) scaffolds to treat craniomaxillofacial (CMF) bone defects," presented at ***Biomaterials Day Meeting***, Austin, TX, United States, June 2, 2017. [talk - INVITED]

100. "Amphiphilic silicones to control biofouling," presented at the ***University of South Brittany*** – Morbihan, France, June 1, 2017. [talk – INVITED]

99. "Self-fitting" shape memory polymer (SMP) scaffolds based on PCL-PLLA semi-IPN shape memory polymers (SMPs)," presented at the 253rd ***American Chemical Society (ACS) National Meeting***, San Francisco, CA, United States, April 2, 2017. [talk - INVITED]

98. "Self-fitting" shape memory polymer (SMP) scaffolds to treat craniomaxillofacial (CMF) bone defects," presented to the ***Dept. of Biomedical Engineering, Case Western Reserve University***, Cleveland, OH, USA, February 20, 2017. [talk – INVITED]

97. "Amphiphilic silicones to control biofouling," presented at the ***Frontiers in Green Materials*** symposium, London, United Kingdom, December 12, 2016. [talk - INVITED]

96. "Amphiphilic silicones to control marine and medical biofouling," presented at the 252nd ***American Chemical Society (ACS) National Meeting***, Philadelphia, PA, United States, August 22, 2016. [talk - INVITED]

95. "A bioactive 'self-fitting' shape memory polymer (SMP) scaffold to treat craniomaxillofacial (CMF) bone defects," presented at the 252nd ***American Chemical Society (ACS) National Meeting***, Philadelphia, PA, United States, August 22, 2016. [talk - INVITED]

94. "Amphiphilic silicones to control biological adhesion," presented at ***Los Alamos National Lab (LANL)***, Los Alamos, NM, United States, August 17, 2016. [talk - INVITED]

93. "Amphiphilic silicones to control biological adhesion," presented at the ***5th Zing Polymer Chemistry Conference***, Dublin, Ireland, August 7, 2016. [talk - INVITED]

92. "Hydrogel design and cell/materials interactions," presented at the ***NSF Workshop on Biomaterials for NSF DMR MIP Program***, Washington, DC, United States, August 2-3, 2016. [talk - INVITED]

91. "Thermoresponsive Nanocomposite hydrogels as self-cleaning membranes for implanted glucose biosensor," presented at the ***Polymer Composites and High Performance Materials Workshop***, Santa Rosa, CA, United States, July 26, 2016. [talk - INVITED]

90. "Custom silicones with high thermal and radiation stability for direct ink write and hydrostatic LOPP additive manufacturing," presented at the ***43rd Polymeric Materials Adhesives and Composites Conference (polyMAC) (Unclassified)***, National Security Campus (NSC), Kansas City, United States, June 15, 2016. [talk - INVITED]

89. "A bioactive 'self-fitting' shape memory polymer (SMP) to treat craniomaxillofacial (CMF) bone defects," presented at the ***CIMTEC 2016 Conference***, Perugia, Italy, May 24, 2016 [talk - INVITED]

88. "Amphiphilic silicones to control biological adhesion," presented to the ***Society of Plastic Engineers (SPE) Annual Technical Conference (ANTEC)***, Indianapolis, IN, United States, May 24, 2016. [talk - INVITED]

87. "Amphiphilic silicones to control biological adhesion," presented to the National Graduate School of Engineering Chemistry of Lille (École Nationale Supérieure de Chimie, ENSCL), ***University of Lille Nord de France***, Lille, France, May 3, 2016. [talk - INVITED]

86. "Amphiphilic silicones to reduce biological adhesion," presented at the ***Polymer Technology Industrial Consortium (PTIC) Meeting***, Texas A&M University, College Station, TX, United States; April 8, 2016. [talk - INVITED]

85. "Anti-fouling amphiphilic silicones: Efficacy against marine biofouling," presented at the 251st ***American Chemical Society (ACS) National Meeting***, San Diego, CA, United States, March 13-17, 2016. [talk – INVITED]

84. "Anti-fouling silicones prepared with PEO-silane amphiphiles," presented at the 251st ***American Chemical Society (ACS) National Meeting***, San Diego, CA, United States, March 13-17, 2016. [talk – INVITED]

83. "Thermoresponsive hydrogels as self-cleaning membranes for implanted glucose biosensors," presented at the 251st ***American Chemical Society (ACS) National Meeting***, San Diego, CA, United States, March 13-17, 2016. [talk – INVITED]

82. "Silicon-containing hydrogels and shape memory polymers for tissue regeneration," presented to the Dept. of Chemical Engineering, ***University of Puerto Rico Mayagüez***, March 3, 2016 [talk - INVITED]

81. "Amphiphilic silicones with resistance to biological adhesion," presented to the Dept. of Materials Science & Engineering, ***Johns Hopkins University***, February 24, 2016 [talk - INVITED]

80. "Amphiphilic silicones with resistance to biological adhesion," presented to the Dept. of Chemistry, ***University of Southern California***, January 28, 2016 [talk - INVITED]

79. "Thermally-driven, self-cleaning membranes: Extending the lifetime of an implanted glucose biosensor," ***Pacifichem***, Honolulu, HI, United States, December 15 – 20, 2015. [talk]

78. "Self-cleaning, ultra-strong membranes for implanted glucose biosensors" presented at the Fall 2015 ***Material Research Society (MRS) National Meeting***, Boston, MA, United States, November 29 – December 4, 2015. [talk]

77. "Thermoresponsive hydrogels as self-cleaning membranes for implanted glucose biosensors" presented to the College of Engineering, Mathematics & Physical Science, ***University of Exeter,*** Exeter, United Kingdom, November 11, 2015. [talk-INVITED]

76. "Silicon-containing hydrogels and shape memory polymers for tissue regeneration," presented to the Dept. of Materials, ***Imperial College London****, London, United Kingdom,* November 6, 2015. [talk-INVITED]

75. "Polymeric biomaterials for next generation medical devices and tissue engineering scaffolds," presented at the ***National Institute of Materials Science and Engineering (NIMS)***, Tsukuba, Japan, September 16, 2015. [talk-INVITED]

74. "Antifouling marine and medical technology," presented at the 250th ***American Chemical Society (ACS) National Meeting***, Boston, MA, United States, August 16-20, 2015. [talk – INVITED]

73. "Antifouling silicones prepared with PEO-silane amphiphiles: Impact of structure and concentration," presented at the 250th ***American Chemical Society (ACS) National Meeting***, Boston, MA, United States, August 16-20, 2015. [talk – INVITED]

72. "Overcoming the poor ability of PEO to reduce protein adsorption onto silicone," presented at the ***Gordon Research Conference (GRC) on Polymers*** – Mount Holyoke, MA, United States, June 15, 2015. [talk – INVITED]

71. "PEO-silane amphiphiles to decrease biofouling on silicones," presented at the ***University of South Brittany*** – Morbihan, France, June 1, 2015. [talk – INVITED]

70. "PEO-silane amphiphiles to reduce biological adhesion," presented at the *Dept.of Materials Engineering,* ***Technion Israel Institute of Technology*** – Haifa, Israel, May 3, 2015. [talk – INVITED]

69. "PEO-silane amphiphiles to reduce biological adhesion," presented at the *Dept. of Chemical Engineering,* ***Ben-Gurion University of the*** **Negev** – Beer Sheeva, Israel, April 28, 2015. [talk – INVITED]

68. "Silicon-containing hydrogels and shape memory polymers for tissue regeneration," presented at the *Dept. of Mechanical Science and Engineering,* ***University of Illinois at Urbana-Champaign*** – Champaign, IL, United States, April 21, 2015. [talk – INVITED]

67. "Self-cleaning membranes for implanted glucose biosensors," presented at the ***Deformation, Yield and Fracture of Polymers (DYFP2015)***, Kerkade, Netherlands, March 29 – April 2, 2015. [talk – INVITED]

66. "Silicon-containing hydrogels and shape memory polymers for tissue regeneration," presented at the 248th ***American Chemical Society (ACS) National Meeting***, Denver, CO, United States, March 22-26, 2015. [talk – INVITED]

65. "Self-cleaning membranes for implanted glucose biosensors," presented at the ***Silicon-Containing Polymers and Composites Meeting 2014***, San Diego, CA, United States, December 14-17, 2014. [talk – INVITED]

64. "PEO-silane amphiphiles to decrease biofouling on silicones," presented at the ***4th Zing Polymer Chemistry***, Cancun, Mexico; December 10 – 13, 2014. [talk – INVITED]

63. "Reducing biofouling on silicones with PEG-silane amphiphile additives: Marine and medical applications," presented at the ***Silicone Elastomers World Summit 2014***, Vienna, Austria, December 3-4, 2014. [talk – INVITED]

62. "Silicon-containing hydrogels and shape memory polymers for tissue regeneration," presented to the *Department of Materials Engineering,* ***Purdue University***, Lafayette, IN, United States; October 10, 2014. [talk - INVITED]

61. "A self-fitting shape memory polymer (SMP) scaffold with potential to treat craniomaxillofacial (CMF) bone defects," presented at the 248th ***American Chemical Society (ACS) National Meeting***, San Francisco, CA, United States, August 10-14, 2014. [talk – INVITED]

60. "Inorganic-organic hydrogel scaffolds for osteochondral tissue engineering," presented at the Spring 2014 ***Material Research Society (MRS) National Meeting***, San Francisco, CA, United States, April 21-25, 2014. [talk]

59. "Silicon-containing hydrogels and shape memory polymers for tissue regeneration," presented to the *Dept. of Bioengineering*, ***Imperial College London***; November 28, 2013. [talk - INVITED]

58. "Nanocomposite self-cleaning membranes for implanted glucose biosensor," presented at the ***Composites at Lake Louise Meeting***, Lake Louise, Alberta, Canada; November 5, 2013. [talk - INVITED]

57. "Silicones with hydrophilicity and resistance to fouling," presented at the ***Polymer Technology Industrial Consortium (PTIC) Meeting***, Texas A&M University, College Station, TX, United States; October 25, 2013. [talk - INVITED]

56. "Silicon-containing hydrogels and shape memory polymers for tissue regeneration," presented to the School of Polymers and High Performance Materials, ***University of Southern Mississippi***, Hattiesburg, MS, United States; October 2, 2013. [talk - INVITED]

55. "Silicon-containing hydrogels and shape memory polymers for tissue regeneration," presented to the Dept. of Chemistry and Chemical Biology, ***McMaster University***, Hamilton, Ontario, Canada; September 12, 2013. [talk - INVITED]

54. "Nanocomplex anti-fouling coatings based on PEO-silane amphiphiles," presented at the ***MRS-Singapore ICMAT Conference***, Singapore; June 30 - July 5, 2013 [talk - INVITED].

53. "Self-cleaning membranes for implanted glucose biosensors," presented at the ***MRS-Singapore ICMAT Conference***, Singapore; June 30 - July 5, 2013 [talk].

52. "Self-cleaning membranes for implanted glucose biosensors," presented at the ***European Polymer Conference***, Pisa, Italy; June 16-21, 2013 [talk].

51. "Anti-fouling behavior of coatings based on PEO-silane amphiphiles," presented at the 2013 ***Gordon Research Conference (GRC) on Polymers***, Mount Holyoke College, South Hadley, MA, United States; June 9-14, 2013 [poster].

50. "Nanocomplex anti-fouling coatings," presented at the ***Society of Plastics Engineers (SPE) ANTEC® Meeting***, Cincinnati, OH, United States; April 21-25, 2013 [talk - INVITED].

49. "High strength thermoresponsive double network," presented at the 245th ***American Chemical Society (ACS) National Meeting***, New Orleans, LA, United States; April 7-11, 2013 [talk].

48. "Gradient $PDMS_{star}$-PEG hydrogel scaffolds for osteochondral tissue engineering," presented at the 245th ***American Chemical Society (ACS) National Meeting***, New Orleans, LA, United States; April 7-11, 2013 [talk].

47. "Self-cleaning membranes for implanted glucose biosensors," presented to the *Department of Chemistry and Biochemistry,* ***Cal Poly San Luis Obispo***, San Luis Obispo, CA; United States, April 4, 2013 [talk - INVITED].

46. "Nanocomplex anti-fouling coatings based on PEO-silane amphiphiles," presented at the ***ACS Silicon-Containing Polymer Conference***; San Diego, CA, United States; December 9-12, 2012. [talk]

45. "Medical and marine anti-fouling coatings prepared with amphiphilic PEG-silanes," presented at the ***Zing Polymer Chemistry Conference***, Xcaret, Mexico; November 12-16, 2012. [talk - INVITED]

44. "$PDMS_{star}$-PEG hybrid scaffolds for bone tissue engineering," presented at the ***65th OMICS Group Conference*** – International Conference on Tissue Science and Engineering, Chicago, IL, United States; October 1-3, 2012. [talk - INVITED]

43. "Anti-fouling medical and marine coatings prepared with amphiphilic PEG-silanes," presented at the PMSE Young Investigator Symposium, 244rd ***American Chemical Society (ACS) National Meeting***, Philadelphia, PA, United States; August 19-23, 2012. [talk - INVITED]

42. "Anti-fouling coatings prepared with PEG-silane amphiphiles – Medical and marine applications," presented at **3M**; Maple Grove, MN, United States; April 15, 2012. [talk-INVITED]

41. "Nanocomposite hydrogels," presented at ***2012 IPRIME (Industrial Partnership for Research in Interfacial and Materials Engineering)***; Minneapolis, MN, United States; May 30, 2012. [talk-INVITED]

40. "Anti-fouling coatings for medical and marine applications," presented at the ***American Coatings Conference***, Indianapolis, IN, United States, May 7-9, 2012. [talk - INVITED]

39. "Silicon-containing polymeric biomaterials," presented to ***Southwest Research Institute***, San Antonio, TX, United States, April 20, 2012. [talk - INVITED]

38. "Self-cleaning membranes for implanted glucose biosensors," presented to the Dept. of Chemistry, ***University of Minnesota***, Minneapolis, MN, United States, April 12, 2012. [talk - INVITED]

37. "Porous inorganic-organic PDMS-PCL shape memory polymers," presented at the 243rd ***American Chemical Society (ACS) National Meeting***, San Diego, CA, United States, March 25-29, 2012. [talk]

36. "Anti-fouling coatings prepared with PEG-silane amphiphiles – Marine and medical applications," presented at the 243rd ***American Chemical Society (ACS) National Meeting***, San Diego, CA, United States, March 25-29, 2012. [talk]

35. "Anti-fouling coatings prepared with PEG-silane amphiphiles – Marine and medical applications," presented at the ***Smart Coatings Symposium***; Orlando, FL, United States; February 22-24, 2012. [talk-INVITED]

34. "Anti-fouling coatings prepared with amphiphilic PEG-silanes containing siloxane tethers," presented at the 242nd ***American Chemical Society (ACS) National Meeting***, Denver, CO, United States, August 28-September 1, 2011. [talk-INVITED]

33. "$PDMS_{star}$-PEG hydrogels as tissue engineering scaffolds," presented at the ***4th International Conference on Tissue Engineering***, Chania, Crete, Greece, May 31 – June 5 2011. [talk]

32. "Inorganic-organic shape memory polymers for bone defects," presented at the ***Summer Forum on Materials and Nanotechnology***, North Dakota State University (NDSU), Fargo, ND, United States, June 9, 2011. [talk-INVITED]

31. "Self-cleaning sensor membranes based on thermoresponsive nanocomposite hydrogels," presented at the Fall 2010 ***Material Research Society (MRS) National Meeting***, Boston, MA, United States, November 29 – December 3, 2010. [talk]

30. "Thermoresponsive nanocomposite hydrogels as self-cleaning membranes for glucose biosensors," presented at the ***Zing Polymer Chemistry Conference***, Puerto Morelos, Mexico, November 19-22, 2010. [talk]

29. "Thermoresponsive nanocomposite hydrogels as self-cleaning membranes for glucose biosensors," presented at the ***National Biomedical Engineering Society (BMES) Meeting***, Austin, TX, United States, October 7-9, 2010. [talk]

28. "Amphiphilic silicones with enhanced blood compatibility," presented at the ***15th International Society of Coatings Science and Technology Meeting***, Minneapolis, MN, United States, September 13-15, 2010. [talk-INVITED]

27. "Photo-crosslinked $PDMS_{star}$-PEG hydrogels: Fabrication and use as tissue engineering scaffolds," presented at the 239th ***American Chemical Society (ACS) National Meeting***, Washington, D.C, United States, March 21-25, 2010. [talk]

26. "Enhancing the blood-compatibility of PEO-modified biomaterials," presented to the *Dept. of Chemistry,* ***University of Houston***, Houston, TX, United States, March 20, 2010. [talk - INVITED]

25. "Enhancing the blood compatibility of PEG: Introducing siloxane tethers," by **Grunlan, M.A.** Presented at the ***Society for Biomaterials (SFB) Day at Texas A&M University Meeting***, College Station, TX, United States, February 22, 2010. [talk]

24. "Photo-crosslinked PEO-$PDMS_{star}$ hydrogels: Synthesis, characterization, and potential application for tissue engineering," presented at the ***Material Research Society (MRS) National Meeting***, Boston, MA, United States, December 1-5, 2009. [talk]

23. "Shape memory polymers with Si-containing segments," presented to the *Dept. of Coatings and Polymeric Materials,* ***North Dakota State University***, Fargo, ND, United States, October 23, 2009. [talk - INVITED]

22. "Si-Containing polymeric biomaterials: From controlling biological adhesion to shape memory polymers," presented to *the Dept. of Polymer Science and Engineering,* ***University of Massachusetts - Amherst***, Amherst, MA, United States, September 18, 2009. [talk-INVITED]

21. "Photocurable Si-containing shape memory polymer," presented at the 237th ***American Chemical Society (ACS) National Meeting***, Washington, D.C, United States, August 16-21, 2009. [talk-INVITED]

20. "Enhancing the blood-compatibility of PEO-modified biomaterials," presented at the ***American Chemical Society (ACS) 6th Annual Polymers in Medicine and Biology***, Santa Rosa, CA, United States, June 14-17, 2009. [talk-INVITED]

19. "Si-Containing blood compatible coatings and hydrogel scaffolds: Going beyond PEO," presented at the ***National Institute of Standards and Technology (NIST)***, Gaithersburg, MD, United States, May 1, 2009. [talk-INVITED]

18. "Thermoresponsive nanocomposite hydrogels with cell-releasing behavior," presented at the 237th ***American Chemical Society (ACS) National Meeting***, Salt Lake City, UT, United States, March 22-25, 2009. [talk]

17. "Enhancing the blood-compatibility of PEO-modified biomaterials," presented to the *Dept. of Chemistry,* ***University of Texas - Dallas***, Dallas, TX, United States, March 20, 2009 [talk - INVITED].

16. "Grafting of PEO via siloxane tethers for improved blood protein resistance," presented at the ***Gordon Research Conference (GRC) on Macromolecular Materials***, Ventura, CA, United States, January 11-16, 2009. [poster]

15. "Development of a self-cleaning membrane for implantable glucose biosensors," presented at the ***Material Research Society (MRS) National Meeting***, Boston, MA, United States, December 1-5, 2008. [talk]

14. "Protein-resistant biomaterials: grafting of PEO via flexible siloxane tethers," presented at the 236th ***American Chemical Society (ACS) National Meeting***, Philadelphia, PA, United States, August 17-21, 2008. [talk]

13. "Design and characterization of inorganic-organic biomaterials," presented at the ***NaTex (Texas and Southwest section of the North American Thermal Analysis Society) Meeting***, Dallas, TX, United States, May 13th, 2008. [talk-INVITED]

12. "Protein-resistant silicones: grafting of poly(ethylene oxide) via siloxane tethers"," presented at the ***Biomedical Engineering Society (BMES) National Meeting***, Hollywood, CA, United States, Sept. 28, 2007. [poster]

11. "Inorganic-organic hydrogel scaffolds based on polydimethylsiloxane and poly(ethylene oxide)," presented at the ***Biomedical Engineering Society (BMES) National Meeting***, Hollywood, CA, United States, Sept. 28, 2007. [poster]

10. "Inorganic,-organic hydrogels with tunable properties," presented at the 232nd ***American Chemical Society (ACS) National Meeting***, Boston, MA, United States, August 19-23, 2007. [talk]

9. "Non-adhesive polymer surfaces from novel amphiphilic block copolymers," presented at the 62nd ***Southwest Regional Meeting of the American Chemical Society (ACS***), Houston, TX, United States, October 19-22, 2006. [talk-INVITED]

8. "Regioselective synthesis of crosslinkable α-$(EtO)_3$Si-oligosiloxane-*block*-oligo(oxyethylene)s," presented at the 232nd ***American Chemical Society (ACS) National Meeting***, San Francisco, CA, United States, Sept. 10-14, 2006. [talk]

7. "Liquid/liquid separation of polysiloxane-supported catalysts," presented at the 38th ***Central Regional Meeting of the American Chemical Society (ACS)***, Frankenmuth, MI, United States, May 16-20, 2006. [talk]

6. "Minimally adhesive siloxane and fluorosiloxanes surfaces," presented at the 38th ***Central Regional Meeting of the American Chemical Society (ACS)***, Frankenmuth, MI, United States, May 16-20, 2006. [talk]

5. "Hybrid networks generated from star polysiloxanes/linear PDMS: Preparation of minimally adhesive polymer surfaces," presented at the 229th ***American Chemical Society (ACS) National Meeting***, San Diego, CA, United States, March 13-17, 2005. [talk]

4. "Synthesis of 1,9-bis[Glycidyloxypropyl]penta-(1H',1H',2H',2H'-perfluoroalkylmethylsiloxane)s and their copolymerization with piperazine," presented at the 227th ***American Chemical Society (ACS) National Meeting***, Anaheim, CA, United States, March 28-April 1, 2004. [poster]

3. "Crosslinking of α,ω-(epoxy)fluorosiloxanes with α,ω-diaminoalkanes: Cure behavior and properties," presented at the 227th ***American Chemical Society (ACS) National Meeting***, Anaheim, CA, United States, March 28-April 1, 2004. [talk]

2. "Preparation of copoly[methyldimethylphosphonopropylsiloxane/dimethylsiloxane] by Arbuzov reaction and its properties," presented at the 226th ***American Chemical Society (ACS) National Meeting***, New York, NY, United States, September 7-11, 2003. [poster]

1. "Synthesis of fluoroalkylsiloxane copolymers by Pt-catalyzed hydrosilylation polymerization," presented at the 224th ***American Chemical Society (ACS) National Meeting***, Boston, MA, United States, August 18-22, 2002. [poster]

CONFERENCE PROCEEDINGS (not peer-reviewed):

Corresponding author+ II Advised post-doc # II Advised graduate student* II
Co-advised graduate student (*) II Advised UG student**

(Note: ACS Divisions no longer required or accepted pre-prints after ~2012)

35. **Grunlan, M.A.+**; Hawkins, M.L.*; Rufin, M.A.*; Murthy, R.; Linossier, I. "Anti-fouling medical and marine coatings prepared with amphiphilic PEG-silanes," *PMSE Preprints* (Amer. Chem. Soc., Div. Poly. Mater. Sci. Eng.), **2012**, *107*, 6.

34. Bailey, B.M.*; Fei, R.*; **Grunlan, M.A.+** "$PDMS_{star}$-PEG hydrogel scaffolds prepared via solvent-induced phase separation," *PMSE Preprints* (Amer. Chem. Soc., Div. Poly. Mater. Sci. Eng.), **2012**, *107*, 24.

33. Zhang, D.*; Petersen, K.M.**; **Grunlan, M.A.+** "PCL-based shape memory polymer foams with variable PDMS segment lengths," *PMSE Preprints* (Amer. Chem. Soc., Div. Poly. Mater. Sci. Eng.), **2012**, *107*, 72.

33. Fei, R.*; George, J.T.**; Mean, A.K.**; **Grunlan, M.A.+** "Ultra strong, thermoresponsive double-network hydrogels," *PMSE Preprints* (Amer. Chem. Soc., Div. Poly. Mater. Sci. Eng.), **2012**, *107*, 230.

32. George, J.T.**; Fei, R.*; Park, J.**; **Grunlan, M.A.+** "Thermoresponsive double network hydrogels with improved mechanical properties," *POLY Preprints* (Amer. Chem. Soc., Div. Poly. Chem.), **2012**, *53*(1), 705.

31. Rufin, M.A.*; Hawkins, M.L.*; Hahn, M.S.; Jayaraman, A.; **Grunlan, M.A.+** "Amphiphilic PEG-silane to prevent thrombosis on polycarbonate-polyurethane (PCU)," *POLY Preprints* (Amer. Chem. Soc., Div. Poly. Chem.), **2012**, *53*(1), 508.

30. Hawkins, M.L.*; Rufin, M.*; Murthy, R.*; Linossier, I.; **Grunlan, M.A.+** "Enhancing the anti-fouling properties of silicones," *POLY Preprints* (Amer. Chem. Soc., Div. Poly. Chem.), **2012**, *53*(1), 507.

29. Zhang, D.*; Burkes, W.L.**; Schoener, C.A.*; **Grunlan, M.A.+** "Porous inorganic-organic PDMS-PCL shape memory polymers," *POLY Preprints* (Amer. Chem. Soc., Div. Poly. Chem.), **2012**, *53*(1), 483.

28. Hawkins, M.L.*; Rufin, M.*; Murthy, R.*; Linossier, I.; **Grunlan, M.A.+** "Anti-fouling coatings prepared with amphiphilic PEG-silanes," *POLY Preprints* (Amer. Chem. Soc., Div. Poly. Chem.), **2012**, *53*(1), 480.

27. Bailey, B.M.*; Hou, Y.*; **Grunlan, M.A.+** "Tailoring the properties of PDMS-PEG hydrogel scaffolds," *POLY Preprints* (Amer. Chem. Soc., Div. Poly. Chem.), **2012**, *53*(1), 54.

26. Giese, M.L.*; Rufin, M.*; Murthy, R.*; Linossier, I.; **Grunlan, M.A.**[+] "Anti-fouling coatings prepared with amphiphilic PEG-silanes containing siloxane tethers," *POLY Preprints* (Amer. Chem. Soc., Div. Poly. Chem.), **2011**, *52(2),*1029.

25. Zhang, D.*; Burkes, W.L.**; Schoener, C.A.*; **Grunlan, M.A.**[+] "Porous inorganic-organic shape memory polymers," *PMSE Preprints* (Amer. Chem. Soc., Div. Poly. Mater. Sci. Eng.), **2011**, *105,* 1115.

24. Bailey, B.M.*; Hou, Y.*; **Grunlan, M.A.**[+] "Photo-crosslinked $PDMS_{star}$-PEG hydrogels: Fabrication and use as tissue engineering scaffolds," *POLY Preprints* (Amer. Chem. Soc., Div. Poly. Chem.), **2010**, *51,* 18-19.

23. Murthy, R.*; Bailey, B.M.*; Valentin-Rodriguez, C.; Ivanisevic, A.; **Grunlan, M.A.**[+] "Amphiphilic silicones prepared with branched PEO-silanes with siloxane tethers," *POLY Preprints* (Amer. Chem. Soc., Div. Poly. Chem.), **2010**, *51,* 45-46.

22. Munoz-Pinto, D.J.; Schoener, C.*; Hou, Y.*; **Grunlan, M.A.**; Hahn, M.S.[+] "$PDMS_{star}$-PEG hydrogels for directed mesenchymal stem cell differentiation," *POLY Preprints* (Amer. Chem. Soc., Div. Poly. Chem.), **2010**, *51,* 76-77.

21. Fei, R.*; George, J.T.**; **Grunlan, M.A.**[+] "Thermoresponsive nanocomposite double network hydrogels," *POLY Preprints* (Amer. Chem. Soc., Div. Poly. Chem.), **2010**, *51,* 415-416.

20. Zhang, D.*; Prukop, S.L.**; Giese, M.L.**; **Grunlan, M.A.**[+] "Shape memory polymers with PDMS soft segments," *POLY Preprints* (Amer. Chem. Soc., Div. Poly. Chem.), **2010**, *51,* 614-615.

19. Bailey, B.M.*; Hou, Y.*; **Grunlan, M.A.**[+] "Photo-crosslinked $PDMS_{star}$-PEG hydrogels: Fabrication and use as tissue engineering scaffolds," *POLY Preprints* (Amer. Chem. Soc., Div. Poly. Chem.), **2010**, *51,* 84-85.

18. Schoener, C.A.*; Charanya, T.**; Weyand, C.B.**; **Grunlan, M.A.**[+] "Photocurable Si-containing shape memory polymer," *POLY Preprints* (Amer. Chem. Soc., Div. Poly. Chem.), **2009**, *50,* 843-844.

17. Bailey, B.M.**; Murthy, R.*; **Grunlan, M.A.**[+] "Protein resistant silicones prepared with branched PEO-silanes," *POLY Preprints* (Amer. Chem. Soc., Div. Poly. Chem.), **2009**, *50(1)*, 535-536.

16. Murthy, R.*; Shell, C.E.**; Bailey, B.M.**; **Grunlan, M.A.**[+] "Grafting of linear and branched PEO via siloxane tethers for enhanced protein resistance," *POLY Preprints* (Amer. Chem. Soc., Div. Poly. Chem.), **2009**, *50(1)*, 43-44.

15. Hou, Y.*; Burkes, J.C.**; Lee, S.D.**; Bullick, A.S.; Hahn, M.S.; **Grunlan, M.A.**[+] "Thermoresponsive nanocomposite hydrogels with cell-releasing behavior," *POLY Preprints* (Amer. Chem. Soc., Div. Chem.), **2009**, *50 (1),* 21-22.

14. Murthy, R.*; Shell, C.**; **Grunlan, M.A.**[+] "Protein-resistant biomaterials: Grafting of PEO via flexible siloxane tethers," *PMSE Preprints* (Amer. Chem. Soc., Div. Poly. Mater. Sci. Eng.), **2008**, *99*, 174-175.

13. Murthy, R.*; Cox, C.D.[**]; Hahn, M.S.; **Grunlan, M.A.**[+] "Enhancing the protein-resistance of silicones," *PMSE Preprints* (Amer. Chem. Soc., Div. Poly. Mater. Sci. Eng.), **2008**, *99*, 522-524.

12. Xin, Q.; Bulick, A.; Schoener, C.*; Munoz, D.; Hou, Y.*; **Grunlan, M.A.**; Hahn, M.S.[+] "Modulating smooth muscle cell response with tunable inorganic-organic hydrogels," *PMSE Preprints* (Amer. Chem. Soc., Div. Poly. Mater. Sci. Eng.), **2008**, *98*, 328.

11. Hou, Y.*; Regan, K.R.**; Schoener, C.A.**; Hahn, M.S.; **Grunlan, M.A.**[+] "Inorganic-organic hydrogels with tunable properties," *POLY Preprints (*Amer. Chem. Soc., Div. Poly. Chem.), **2007**, *48*(2), 900-901.

10. Regan, K.R.**; Hou, Y.*; Hahn, M.S.; Huimin, L.; **Grunlan, M.A.**[+] "Tunable hydrogels prepared from star PDMS and linear PEO," *PMSE Preprints* (Amer. Chem. Soc., Div. Poly. Mater. Sci. Eng.), **2007**, *96*, 730-731.

9. Murthy, R.*; **Grunlan, M.A.**[+] "Regioselective synthesis of crosslinkable α-$(EtO)_3$-Si-oligodimethylsiloxane-*block*-oligo(oxyethylene)s," *POLY Preprints (*Amer. Chem. Soc., Div. Poly. Chem.), **2006**, *47*(2), 1189-1190.

8. Regan, K.R.; **Grunlan, M.A.**; Bergbreiter, D.E.[+] "Polysiloxanes as inorganic soluble polymer supports in synthesis," *POLY Preprints (*Amer. Chem. Soc., Div. Poly. Chem.), **2006**, *47* (1), 596-597.

7. **Grunlan, M.A.**; Lee, N.S.; Weber, W.P.[+] "Hybrid networks generated from star polysiloxanes/linear PDMS: Preparation of minimally adhesive polymer surfaces," *POLY Preprints (*Amer. Chem. Soc., Div. Poly. Chem.), **2005**, *46 (1)*, 407-408.

6. **Grunlan, M.A.**; Lee, N.S.; Weber, W.P.[+] "Crosslinking of α,ω-(epoxy)fluorosiloxanes with α,ω-diaminoalkanes: Cure behavior and properties," *POLY Preprints (*Amer. Chem. Soc., Div. Poly. Chem.), **2004**, *45 (1)*, 581-582.

5. **Grunlan, M.A.**; Lee, N.S.; Weber, W.P.[+] "Synthesis of 1,9-bis[Glycidyloxypropyl]penta-(1H',1H',2H',2H'-perfluoroalkylmethylsiloxane)s and their copolymerization with piperazine," *POLY Preprints* (Amer. Chem. Soc., Div. Poly. Chem.), **2004**, *45(1)*, 712-713.

4. **Grunlan, M.A.**; Weber, W.P.[+] "Preparation of copoly[methyldimethylphosphonopropylsiloxane/ dimethylsiloxane] by Arbuzov reaction and its properties," *PMSE Preprints* (Amer. Chem. Soc., Div. Poly. Mater. Sci. Eng.), **2003**, *89*, 470-471.

3. **Grunlan, M.A**.; Mabry, J.M.; Weber, W.P.[+] "Synthesis of fluoroalkylsiloxane copolymers by Pt-catalyzed hydrosilylation polymerization," *POLY Preprints* (Amer. Chem. Soc., Div. Poly. Chem.), **2002**, *43* (2), 1079-1080.

2. **Grunlan, M.A**.[+] "Advances in latex modification of urea formaldehyde resins," Conference Proceedings - International Nonwovens Technical Conference, Baltimore, MD, United States, Sept. 5-7, **2001**; pp. 573-580.

1. **Grunlan, M.A**.; Glass, J.E.[+] "Influence of spacer length on the rheology of HMHEC coatings rheology," *PMSE Preprints* (Amer. Chem. Soc., Div. Poly. Mater. Sci. Eng.), **1997**, *76*, 120-121.

COURSES TAUGHT:

BMEN 343: Introduction to Biomaterials
BMEN 482/682: Polymeric Biomaterials (new course; introduced Spring 2006)
BMEN 345: Biomaterials Laboratory (new course; introduced Fall 2012)

RESEARCH ADVISING:

CURRENT STUDENTS AND POST-DOCS (all as sole chair)**:**

7. **Alec Marmo:** Ph.D. student, Materials Science and Engineering; *8/2018 - present*
6. **Conner Demmot:** Ph.D. student, Biomedical Engineering; *8/2018 - present*
5. **Felipe Beltran:** Ph.D. student, Materials Science and Engineering; *1/2017 - present*
4. **Ping Gong:** Ph.D. student; Biomedical Engineering; *8/2016 - present*
3. **Michael Frassica:** Ph.D. student; Biomedical Engineering; *8/2016 - present*

2. **Michaela Pfau:** Ph.D. student; Biomedical Engineering; *8/2016 - present*
1. **Bryan Ngo:** Ph.D. student; Biomedical Engineering; *8/2015 – present*

8. **Jessica Johnson:** undergraduate, Biomedical Engineering; *1/2019 – 5/2019, 8/2019 - present*
7. **Esteban Ramirez:** undergraduate, Biomedical Engineering; *1/2019 - present*
6. **Emily Clark:** undergraduate, Biomedical Engineering; *1/2019 - 5/2019, 8/2019 - present*
5. **Emily Rayer:** undergraduate, Biomedical Engineering; *8/2018 - 5/2019, 8/2019 - present*
4. **Rabia Ali:** undergraduate, Biomedical Engineering; *8/2018 - present*
3. **Christopher Houk:** undergraduate, Biomedical Engineering; *4/2018 - present*
2. **Sarah Jones:** undergraduate, Biomedical Engineering; *8/2017 - 5/2019, 8/2019 - present*
1. **Kelly McKinzey:** undergraduate, Biomedical Engineering; *1/2017 – 5/2018, 8/2019 - present*

FORMER POST-DOCS AND STUDENTS:

As Sole Chair – Post-doc

1. **Jakkrit Suriboot:** Post-doctoral fellow; *6/2016 – 7/2019*
2. **Melissa Giese Hawkins:** Post-doctoral fellow; *1/2015 – 5/2016*

As Sole Chair - (Ph.D. Students)

9. **A. Kristen Means:** Ph.D.; Materials Science and Engineering; *8/2014 – 5/2019*. Current – Post-doc with Prof. Jordan Miller, Rice University.
8. **Lindsay Nail Woodard:** Ph.D; Biomedical Engineering; *7/2013 – 5/2018*. Currently – R&D Scientist at Luna Innovations, Inc. (Charlottesville, VA)
7. **Marc Rufin**: Ph.D.; Biomedical Engineering (12/2015). Currently – R&D Design Engineer at Medtronic (Minneapolis, MN).
6. **Melissa Giese Hawkins:** Ph.D.; Biomedical Engineering (12/2013).
5. **Ruochong Fei:** Ph.D.; Biomedical Engineering (12/2013). Currently - Application Engineer at Hermes-Microvision (San Jose, CA).
4. **Brennan Bailey:** Ph.D.; Materials Science and Engineering (08/2013). Post-doctoral research associate at École Polytechnique Fédérale de Lausanne (EPFL); Switzerland, (Prof. Veronique Michaud). Currently - Medical writer at nspm.ltd (Luzern, Switzerland).
3. **Dawei Zhang:** Ph.D.; Materials Science and Engineering (5/2013). Currently - Assistant Professor; University of Science & Technology (Beijing, China).
2. **Yaping Hou:** Ph.D.; Materials Science and Engineering; (12/2009). Post-doc with Prof. Mariah Hahn (Dept. of Chemical Engineering, TAMU), post-doc with Prof. Min Lee (College of Dentistry, UCLA). Currently – Business development manager, North America at Ziamen Sinopeg Biotech, Inc. (San Francisco, CA).
1. **Ranjini Murthy:** Ph.D.; Materials Science and Engineering (5/2009). Currently - Business Development Manager, Wacker Chemical Corporation (Allentown, PA).

As Sole Chair - (Visiting Ph.D. Students)

1. **Guillaume Gillet:** Visiting Ph.D. student, U. of Southern Brittany (France); *3/2018 – 5/2018.*

As Sole Chair - (M.S. Students)

1. **Cody A. Schoener:** M.S.; Biomedical Engineering (08/2009) – Ph.D. in Chemical Engineering at University of Texas – Austin; Chair - Prof. Nicholas Peppas. Currently - Senior Engineer, The Dow Chemical Company (Midland, TX).

As Co-Chair – (Ph.D. Students)

2. **Alexander Abraham:** Ph.D.; Biomedical Engineering; (8/2015) – Currently - Clinical Chemistry Technical Product Development Engineer, Abbott Laboratories (Dallas, TX).
1. **Rebecca Gant:** Ph.D.; Biomedical Engineering; (5/2009) – Currently - Scientist, PROFUSA, Inc. (Houston, TX).

Advisor – (B.S. Students)

54. **Kendrick Lim:** B.S. Biomedical Engineering; *8/2016 – 12/2016*; *7/2017 – 7/2019*
53. **Abigail Roth:** B.S. Biomedical Engineering; *1/2017 – 5/2019*
52. B**radley Schott:** B.S. Biomedical Engineering; *8/2017 – 5/2019*
51. **Courtney Shrode:** B.S. Biomedical Engineering; *8/2016 – 8/2018*
50. **Andrea Brunal:** B.S. Biomedical Engineering; *8/2016 – 7/2017*
49. **Lauren Whitney:** B.S. Biomedical Engineering; *6/2015 – 7/2017*
48. **Mikayla Barry:** B.S. Biomedical Engineering; *6/2014 – 7/2017*
47. **Vanessa Page:** B.S. Biomedical Engineering; *6/2015 – 5/2015; 8/2016 – 6/2017*
46. **Mallory Taylor:** B.S. Biomedical Engineering; *1/2017 – 5/2017*
47. **Bristin Rusenbeck:** B.S. Biomedical Engineering; *5/2015 – 6/2017*
46. **Kevin Kmetz:** B.S. Biomedical Engineering; *1/2016 – 5/2015; 8/2016 – 5/2017*
45. **Luke Oaks:** B.S. Biomedical Engineering (5/2016); *1/2015 – 5/2016*
44. **Daniel Ehrhardt:** B.S. Biomedical Engineering (5/2016); *1/2015 – 5/2016*
43. **Rebecca Sehnert:** B.S. Biomedical Engineering (5/2016); *06/2013 – 5/2016*
42. **Erica Gacasan:** B.S. Biomedical Engineering (5/2016); *01/2013 – 5/2016*
41. **Abigail Advincula:** undergraduate, Biomed. Eng. (Case Western Reserve U.); *5/2015 – 8/2015*
40. **Tyler Nichols:** undergraduate: Biomedical Engineering; *1/2015 – 5/2015*
39. **Ala Yaser Tobeh:** B.S. Biomedical Engineering (5/2015); *1/2014 – 5/2015*
38. **Paige Adair:** B.S. Biomedical Engineering (5/2015); *1/2014 – 5/2015*
37. **Alexandra Herrick:** B.S. Biomedical Engineering (5/2015); *1/2014 – 5/2015*
36. **Jessica Reinhard:** B.S. Biomedical Engineering (5/*2015*); *1/2014 – 12/2014*
35. **Hanna Glidewell:** B.S. Biomedical Engineering (5/2014); *1/2014 – 5/2014*
34. **Robert Hunt:** undergraduate, Biomedical Engineering; *08/2013-12/2013; 8/2014 - 12/2014*
33. **Berkay Basagaoglu:** undergraduate, Biomedical Engineering; *6/2013-5/2014*
32. **Matthew Hurly:** B.S. Biomedical Engineering (5/2014); *1/2013-5/2014*
31. **Samantha Schott:** B.S. Biomedical Engineering (5/2015); *1/2013-5/2014*
30. **Olivia George:** B.S. Biomedical Engineering (5/2015); *8/2012-5/2014*
29. **Daniel Callahan:** B.S. Biomedical Engineering (5/2014); *8/2013-12/2013*
28. **Ryan Ng:** B.S. Chemical Engineering (5/2014; UC Santa Barbara); 7/2013-8/2013
27. **Dedeepya Puvvada:** B.S. Biomedical Engineering (5/2014); *1/2013-5/2013*
26. **Alex Quante:** B.S. Biomedical Engineering (5/2014); *1/2013-5/2013*
25. **Bagrat Grigoryan:** B.S. Biomedical Engineering (5/2013); *8/2012-5/2013*
24. **John Gruetzner:** B.S. Biomedical Engineering (5/2013); *1/2012-5/2013*
23. **A. Kristen Means:** B.S. Biomedical Engineering (5/2014); *8/2011-5/2014*
22. **Lindsay Nail:** B.S. Biomedical Engineering (5/2013); *8/2011-5/2013*
21. **Keri Petersen:** B.S. Biomedical Engineering (5/2013); *8/2011-5/2013*

20. **Julie Strope:** B.S. Bioengineering Engineering (5/2012; University of Missouri); *5/2011-8/2011*
19. **William Burkes:** B.S. Biomedical Engineering (5/2012); *8/2010-05/2011*
18. **Jeehyun Park:** B.S. Biomedical Engineering (5/2011); *5/2010-5/2011*
17. **Jason George:** B.S. Biomedical Engineering (5/2012); *8/2009-5/2012*
16. **Vivian Hui:** B.S. Biomedical Engineering (5/2011); *8/2009-12/2010*
15. **Rachel Unruh:** B.S. Biomedical Engineering (Baylor University) (5/2011); *6/2010-8/2010*
14. **Stacy Prukop:** B.S. Biomedical Engineering (5/2010); *6/2009-5/2010*
13. **Melissa Giese:** B.S. Biomedical Engineering (5/2010); *1/2009 – 5/2010*
12. **Chris Weyand:** Biomedical Engineering (5/2010); *1/2009 – 12/2009*
11. **Shin Duk Lee:** B.S. Biomedical Engineering (5/2009); *8/2008 – 5/2009*
10. **Tauseef Charanya:** B.S. Biomedical Engineering (5/2010); *8/2008 – 5/2009*
9. **Brennan Bailey:** B.S. Biomedical Engineering (5/2009); *1/2008 – 5/2009*
8. **Jonathan Burkes:** B.S. Biomedical Engineering (5/2010); *1/2008 – 5/2009*
7. **Christopher Perry:** B.S. Biomedical Engineering (5/2009); *1/2008 –5/2008*
6. **Cody Schoener:** B.S. Biomedical Engineering (5/2008); *1/2008 – 05/2008*
5. **Courtney Shell:** B.S. Biomedical Engineering (5/2010); *5/2007-5/2008*
4. **Ashley Smitherman:** B.S. Biomedical Engineering (12/2007); *1/2007 – 12/2007*
3. **Casey Cox:** B.S. Biomedical Engineering (05/2007); *6/2006 – 12/2006*
2. **Andrew Matthews:** B.S. Biomedical Engineering (5/2008); *5/2006-8/2006*
1. **Katherine Regan:** B.S. Chemistry (05/2007); *01/2006-12/2006*

Notable distinctions of advised UG students: ***"(#)" = total number of students***

- NSF GRFP: **(4)**: Mikayla Barry, Erica Gacasan, Lindsay (Nail) Woodard and Kristen Means.
- Beckman Scholars Program **(1):** *Mikayla Barry*
- Goldwater Scholars Program **(1):** *Erica Gacasan*
- Astronaut Scholarship Foundation Program scholarship **(1):** *Mikayla Barry*
- TAMU USRG Program **(12)**: *Abigail Advincula, Rebecca Sehnert, Erica Gacasan, Ryan Ng, Lindsay Nail, Julie Strope, Rachel Unruh, Stacy Prukop, Brennan Bailey, Jonathan Burkes, Courtney Shell and Andrew Matthews*
- TAMU LSAMP Program **(6)**: *Lindsay Nail, Keri Petersen, Jeehyun Park, Melissa (Giese) Hawkins, Brennan Bailey, Ashley Smitherman*
- TAMU ROE Program **(3)**: *Lindsay Nail, John Gruetzner, Olivia George*
- TAMU Aggie Scholars **(3)**: *Erica Gacasan, Rebecca Sehnert, Berkay Basagaoglu*
- Undergraduate Research Theses Programs:
    - TAMU Undergraduate Research Scholars (UGRS) Program **(9):** *Sarah Jones, Kelly McKinzey, Bradley Schott, Courtney Shrode, Abigail Roth, Rebecca Sehnert, Mikayla Barry, Erica Gacasan, Olivia George*
    - TAMU Undergraduate Research Fellows Program **(1)**: *Jason George*
- Presented work at national-level conference **(9)**
- Co-authored peer-reviewed journal article (in press or accepted) **(33)**
- TAMU Undergraduate Research Ambassadors **(2)**: *Erica Gacasan, Mikayla Barry*

SIGNIFICANT SERVICE ACTIVITIES:

Deputy Director, NSF ERC "PATHS-UP", October 1, 2017 – May 31, 2019.

Member (representing Engineering), TAMU Council of Principal Investigators (CPI), 2017 – present. Member of the CPI Executive Committee of CPI.

Member, NIH Bioengineering, Technology and Surgical Science Study Section (7/1/2019 – 6/30/2023)

"Past-Chair" American Chemical Society (ACS) Polym. Mater. Sci. and Eng. Division (2019)

"Chair" American Chemical Society (ACS) Polym. Mater. Sci. and Eng. Division (2018)

"Chair-Elect" American Chemical Society (ACS) Polym. Mater. Sci. and Eng. Division (2017)

"Vice Chair, Program Chair" American Chemical Society (ACS) Polym. Mater. Sci. and Eng. Division (2016)

"Secretary" American Chemical Society (ACS) Polym. Mater. Sci. and Eng. Division (2014, 2015)

"Member-at-Large" American Chemical Society (ACS) Polym. Mater. Sci. and Eng. Division (2013 - 2014)

Director of the Undergraduate Program, Dept. of Biomedical Engineering, TAMU, October 2013 – September 2017

Member, CoE/CoS *ad hoc* Committee on Engineering Curriculum Introductory Courses (August 2016 – June 2017)

Member, TAMU Honors and Undergraduate Research Advisory Committee (HURAC) (2015 – 2017)

Editorial advisory board member: *International Journal of Polymeric Materials* (Taylor and Francis) [2014 – present]

Editorial board member, *Journal of Biomaterials and Tissue Engineering* (American Scientific Publishers [2011-present]

Editorial advisory board member (2019), *Macromolecules*

Editorial advisory board member (2019), *Biomacromolecules*

Co-Organizer for International- and National-level Meetings & Symposia: **(1)** Polymers for Advanced Technologies (PAT) International Meeting, College Station, TX, United States, August 8-10, 2019. **(2)**"PMSE Future Faculty Symposium" American Chemical Society (ACS) National Meeting, Boston, MA, United States, August 19-22, 2018, **(3)** "Biomaterials for Regenerative Engineering," Materials Research Society (MRS) National Meeting, Boston, MA, United States, Nov. 29 – Dec. 4, 2015, **(4)** "Polymeric Biomaterials" American Chemical Society (ACS) National Meeting, Denver, CO, United States, March 22-26, 2015, **(5)** "Polymeric Biomaterials" American Chemical Society (ACS) National Meeting, Philadelphia, PA, United States, August 19-23, 2012, and **(6)** "Bioactive Polymer and Polymer Surfaces" American Chemical Society (ACS) National Meeting, Boston, MA, United States, August 22-26, 2010.

Co-Organizer for Local-level Meetings: Co-organizer of annual "Society for Biomaterials: Biomaterials Day at (Texas A&M University, Rice University, University of Texas at Austin and University of Texas as San Antonio)," – Annual conference (2010 - 2016) [rotating between universities]. Co-organizer of event in 2018 at TAMU.

Chair, Faculty Search Committee; Department of Biomedical Engineering, TAMU (Fall 2015 – Spring 2016; Fall 2016 – Spring 2017).

Member, Faculty Search Committee; Department of Biomedical Engineering, TAMU (Fall 2017 - present).

Member, Department Head Search Committee; Department of Biomedical Engineering, TAMU (Fall 2014 – Spring 2015; Fall 2017 – Spring 2018).

Member, Facilities Committee; Department of Biomedical Engineering, TAMU (2011- 2017).

Member, Research Committee; Department of Biomedical Engineering, TAMU (Fall 2017 - present).

Member, Promotion and Tenure Committee; Department of Biomedical Engineering, TAMU (Fall 2017 - present).

Member, Honors and Undergraduate Research Advisory Committee (HURAC) [reporting committee to the TAMU Faculty Senate to advise on standards and policies related to Honors and Undergraduate Research at TAMU], (2015 – 2017).

SELECTED AWARDS, HONORS & DISTINCTIONS:

Holder of the Charles H. and Bettye Barclay Professorship in Engineering, 2018 - present

Fellow, American Institute for Medical and Biological Engineering (AIMBE) (Inducted 2018)

Engineering Outstanding Contributions Award (William O. and Montine P. Head Memorial Research Fund) – (Texas A&M University, College of Eng.; 2018)

Guest Professor (University of South Brittany, Lorient, France; May 15-19, 2017)

Presidential Impact Fellow (Inaugural Class) (Texas A&M University; 2017-2019)

Dean of Engineering Excellence Award – Assoc. Prof. Level (Texas A&M University; 2016-2017)

Royal Academy of Engineering Distinguished Visiting Fellowship (Imperial College London; November 2015)

Short-term Visiting Scientist Fellowship (National Institute for Materials Science; Tsukuba, Japan; September 2015)

Association of Former Students Distinguished University Level Award in Teaching (Texas A&M University; 2015-2016)

Association of Former Students Distinguished College Level Award in Teaching (Texas A&M University, College of Eng.; 2009-2010 and 2015-2016)

Texas A&M Engineering Experiment Station (TEES) Faculty Fellow – (Texas A&M University, College of Eng.; 2013-2014)

British Petroleum (BP) Teaching Excellence Award – (Texas A&M University, College of Eng.; 2012-2013)

Herbert H. Richardson Faculty Fellow Award – (Texas A&M University, College of Engineering; 2010-2011)

Doctoral Research Award (University of Southern California, College of Letters, Arts & Sciences; 2005)

SOCIETY MEMBERSHIPS:

American Chemical Society (ACS), [1997-present]: *POLY and PMSE divisions*

Materials Research Society (MRS), [2007-present]

Society for Biomaterials (SFB), [2009-present]

Biomedical Engineering Society (BMES), [2010-present]