

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

Texas A&M University Chancellor EDGES Fellow

Fellow – American Institute for Medical and Biological Engineering (AIMBE)

Fellow – American Chemical Society (ACS)

Fellow - ACS Division of Polymeric Materials Science & Engineering (PMSE)

Fellow – Biomedical Engineering Society (BMES)

Senior Member – National Academy of Inventors (NAI)

Associate Editor – ACS Macro Letters

Texas A&M University

Department of Biomedical Engineering

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College Station, Texas 77843-3120

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EDUCATION

August 2001-

Ph.D., Chemistry

August 2004

UNIVERSITY OF SOUTHERN CALIFORNIA (Los Angeles, CA)

Advisor: Prof. William P. Weber

Dissertation Title: Crosslinked Siloxanes: Preparation and Properties

August 1995-

M.S., Polymers and Coatings

May 1997

NORTH DAKOTA STATE UNIVERSITY (Fargo, ND)

Advisor: Prof. J. Edward Glass

Thesis Title: Carbohydrate Polymers in Coatings

August 1991-

B.S., Chemistry

August 1995

NORTH DAKOTA STATE UNIVERSITY (Fargo, ND)

ACADEMIC EXPERIENCE

September 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 2011 -
August 2017

Associate Professor (with tenure)

TEXAS A&M UNIVERSITY (College Station, TX)

Dept. of Biomedical Engineering

Dept. of Materials Science & Engineering (courtesy)

August 2005 -
August 2011

Assistant Professor

TEXAS A&M UNIVERSITY (College Station, TX)

Dept. of Biomedical Engineering

Dept. of Materials Science & Engineering (courtesy)

September 2004 -
August 2005

Post-doctoral Research Associate

TEXAS A&M UNIVERSITY (College Station, TX)

Dept. of Chemistry (with Prof. David E. Bergbreiter)

ACADEMIC ADMINISTRATIVE EXPERIENCE

September 2020 - August 2022	Associate Department Head TEXAS A&M UNIVERSITY (College Station, TX) Dept. of Biomedical Engineering
August 2019 - August 2020	Research Director TEXAS A&M UNIVERSITY (College Station, TX) Dept. of Biomedical Engineering
October 2017 - May 2019	Deputy Director , NSF ERC “PATHS-UP”
October 2013 - September 2017	Director of Undergraduate of Programs TEXAS A&M UNIVERSITY (College Station, TX) Dept. of Biomedical Engineering

INDUSTRIAL RESEARCH EXPERIENCE:

June 1997- August 2001	Chemist, and Senior Chemist H.B. FULLER COMPANY (St. Paul, MN)
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RESEARCH TRAINING EXPERIENCE

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)
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)
August 1993 to December 1994	Undergraduate Research Assistant (Undergraduate Research) NORTH DAKOTA STATE UNIVERSITY (Fargo, ND) Dept. of Chemistry (with Prof. Mukund P. Sibi)
June 1993 to August 1993	Undergraduate Research Assistant (Undergraduate Research) NORTH DAKOTA STATE UNIVERSITY (Fargo, ND) Dept. of Chemistry (with Prof. Stephen Castellino)

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MAJOR FUNDED RESEARCH PROJECTS:

CURRENT:

Diversity Supplement - Synthetic Cartilage-Capped Regenerative Osteochondral Plugs to Heal Osteochondral Defects

National Institute of Health (NIH) - 1R01AR082652-01A1S1

PI/Mentor: M. Grunlan (TAMU); Trainee: D. Dixon (TAMU)

Dates: 6/15/2024 – 12/31/2026; total costs \$352k

Synthetic Cartilage-Capped Regenerative Osteochondral Plugs to Heal Osteochondral Defects

National Institute of Health (NIH) - 1R01AR082652-01A1

PI: M. Grunlan (TAMU); Co-PI: W.B. Saunders (TAMU), M. Moreno (TAMU), M. Hahn (RPI)

Dates: 1/1/2024 – 12/31/2028; total costs \$3,532,334

An Injectable Glucose Biosensor Based on a Self-Cleaning Membrane & NIR FRET Assay

National Science Foundation (NSF) – 2314639

PI: M. Grunlan (TAMU); Co-PI: G. Coté (TAMU)

Dates: 8/1/2023 – 7/31/2026; total costs \$450k

Diversity Supplement - Improving Outcomes in Cataract Surgery: Intraocular Lenses (IOLs) Resistant to Cell Growth

National Institute of Health (NIH) – 1R21EY034598-01S1

PI/Mentor: M. Grunlan (TAMU); Trainee: J. Negrón-Hernandez

Dates: 3/1/2023-2/28/2026; Total costs = \$78k

Improving Outcomes in Cataract Surgery: Intraocular Lenses (IOLs) Resistant to Cell Growth

National Institute of Health (NIH) – 1R21EY034598-01

PI: M. Grunlan (TAMU); Co-Is: E. Scott (U. Cornell)

Dates: 3/1/2023-2/28/2026; Total costs = \$414k

Wear-protection Coatings for 5th/6th Generations Systems

DoD (Air Force) Direct-to-Phase II SBIR - FA8650-23-C-5002

Texas Research Institute Austin, Inc., Subcontract: M. Grunlan (TAMU)

Dates: 2/8/2023-3/31/2025; Total costs = \$1.25M

Passive Broad Spectrum Non-Toxic Antibiofouling Marine Coatings

DoD (Office of Naval Research) Phase II SBIR (N212-120) N68335-23-C-0009

Texas Research Institute Austin, Inc., Subcontract: M. Grunlan (TAMU)

Dates: 1/14/2023 – 1/13/2025 (Base) and 1/14/2025 – 1/13/2027 (Option); Total costs = \$2M

Engineering Research Center for Precise Advanced Technologies & Health Systems for Underserved Populations (PATHS-UP)

NSF – EEC-1648451

PI: G. Coté (TAMU); Current Co-PIs at TAMU: M. Grunlan, B. Mortazavi, F. Sasangohar, J. Kameoka, L. Tian, M.

Lawley, R. Guitierrez-Osuna, S. Mabbott; Dates: 10/1/2017 – 9/30/2022 (Phase I); 10/1/2022 – 9/30/2027 (Renewal); Total costs (awarded to date): \$53M.

COMPLETED:

Implantable Biosensor for Continuous Monitoring of Indicators of Human Performance

DoD (Air Force) Phase I STTR - Topic #AF23A-T002

Luna Labs USA; Subcontract: PI: M. Grunlan (TAMU); Co-PI: G. Coté (TAMU)

Dates: 9/1/2023 – 6/7/2024; total costs \$55k

Resorbable, Self-fitting Pediatric Stents to Prevent Vaginal Fibrosis

National Institute of Health (NIH) - 1R21HD104059-01A1

PI: E. Cosgriff-Hernandez (UT Austin); Co-Is: M. Grunlan, J. Hakim (Texas Children's Hospital)

Dates: 8/1/2021 – 7/31/2023; Total costs: \$275,000

'Self-fitting' Shape Memory Polymer (SMP) Scaffolds to Treat Cranial Bone Defects in Patients with Alzheimer's Disease

National Institute of Health (NIH) - 1R03AG067140-01A1

PI: M. Hahn (RPI); MPI: M. Grunlan

Dates: 9/1/2020 – 6/30/2023; Total costs: \$168,238 (+\$61,207 supplement)

"New Craniofacial Bone Engineering Through Mir-23-27-24 Cluster Mediated Osteogenic-Angiogenic Coupling"

National Institute of Health (NIH) - 1R01DE027686

PI: X. Luan (TAMU); Co-Is: M. Grunlan, Q. Wang, G. Gopinath (TAMU)

Dates: 9/3/2020 – 5/31/2025; Total costs: \$1,512,655

"Passive Broad Spectrum Non-Toxic Antibiofouling Marine Coatings"

DoD (Office of Naval Research) Phase I SBIR - N68335-21-C-0816

Texas Research Institute Austin, Inc. (TRI Austin): Subcontract: M. Grunlan (TAMU)

Dates: 11/1/2021 – 4/20/22 (Phase 1) and 4/21/2022 – 1/13/2023 (Phase 1 Option); Total costs: \$240,000

"An Unobtrusive Continuous Cuff-less Blood Pressure Monitor for Nocturnal Hypertension"

National Institute of Health (NIH) - R01HL151240

PI: R. Jafari (TAMU); Co-Is: B. Mortazari, T. Ferris; Collaborator: M. Grunlan (TAMU)

Dates: 6/1/2020 – 4/30/2025; MG work ended 2022. Total costs: \$3,514,242

"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)

Dates: 2/1/2017 – 12/31/2021; Total costs: \$1,906,953

"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

Dates: 7/1/2018 – 6/30/2020; Total costs: \$1.5M

"Transformative and Affordable Medical Technologies and Systems: Toward Improved Diabetes Health for Underserved Populations"

The Kleberg Foundation

PI: G. Coté (TAMU); Co-PI's: M. Grunlan, E. Flores, F. Sasangohar, M. Lawley, R. Guitierrez-Osuna (TAMU)

Dates: 1/1/2018 – 12/31/2021; Total costs: \$957,789

"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) & Naval Medical Research & 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

Dates: 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)

Dates: 1/1/2016 - 12/31/2019; Total costs: \$44,830

“Development of Silicone-based Materials and Useful Components using Additive Manufacturing”

Los Alamos National Lab (LANL)

PI: M. Grunlan

Dates: 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)

Dates: 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

Dates: 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

Dates: 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

Dates: 1/1/2013 - 12/31/2016; Total costs: \$120,872

“Mucoadhesive Spray”

Industrial Sponsor

PI: M. Grunlan

Dates: 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)

Dates: 4/1/2012 - 3/31/2014; Total costs: \$141,599

Industrial Sponsor

PI: M. Grunlan

Dates: 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)

Dates: 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)

Dates: 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)

Dates: 7/1/2008 – 6/30/2011; Total costs: \$376,837

PATENTS:

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

Pending Applications:

4. "Siloxane-based Dispersing Agents to Prepare Composite Materials," **Melissa A. Grunlan**, Alec C. Marmo, Spencer Hawkins. ([WO 2024/130107 A1](#)) published 6/20/2024.
3. "Multi Network Hydrogels as Synthetic Cartilage," Melissa A. Grunlan, Connor J. Demott* [PCT Application](#) filed **4/18/2023**.
2. "Devices of Resorbable, Drug-eluting Shape Memory Foam," Julie Hakim, Elizabeth Cosgriff-Hernandez, **Melissa Grunlan**. [PCT Application \[PCT/US2023/017465\]](#) filed **4/3/2023**.
1. "Shape Memory Polymer Scaffolds with Tunable Transition temperatures to Treat Tissue Defects," **Melissa A. Grunlan**, Michaela R. Pfau-Cloud*, Courtney T. Roberts*. [US Utility Application \[20230321318\]](#) filed **4/5/2023**.

Issued:

4. "Cartilage Mimetic Hydrogels," **Melissa A. Grunlan**, Anna K. Means*. [US 11,707,554 B2](#); issued **7/25/2023**.
3. "Self-Cleaning Membranes for Medical Devices," **Melissa A. Grunlan**, Gerard L. Coté, Alexander A. Abraham^(*), Ruochong Fei*. [US 11,704,455 B2](#); issued **7/18/2023**.
2. "Implant-based Repair of Osteochondral Articular Defects," **Melissa A. Grunlan**, William B. Saunders, Mariah S. Hahn. [US 10,624,987](#); issued **4/21/2020**.
1. "Shape Memory Polymer Scaffolds for Tissue Defects," **Melissa A. Grunlan**, Dawei Zhang*, Cody A. Schoener*, William B. Saunders. [US 9,925,297](#); issued **3/24/2018**.

PEER-REVIEWED JOURNAL PUBLICATIONS:

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

2024

110. Gasson, S.B.; Dobson, L.K.; Pfau, M.R.*; Beltran, F.O.*; Gregory, C.A., **Grunlan, M.A.**; Saunders, W.B. "Shape memory polymer scaffolds – Utility for *in vitro* osteogenesis of canine multipotent stromal cells," *J. Biomed. Mater. Res. Part B*, **2024**, *in press online*.
109. Guda, T.; Stukel Shahn, J.M.; Lundquist, B.D.; Macaitis, J.M.; Lozano Pérez, M.; Pfau-Cloud, M.R.*; Beltran, F.O.*; Schmitt, C.W.; Corbin, E.M.; **Grunlan, M.A.**; Lien, W.; Wang, H.-C.*; Burdette, A.J.* "An *in vivo* assessment of different mesenchymal stromal cell tissue types and their differentiation state on a shape memory polymer scaffold for bone regeneration," *J. Biomed. Mater. Res. Part B*, **2024**, *in press online*.
108. Gasson, S.B.; Dobson, L.K.; Pfau, M.R.*; Beltran, F.O.*; Pool, R.R.; Gregory, C.A., **Grunlan, M.A.**; Saunders, W.B. "Biocompatibility and bone regeneration by shape memory polymer scaffolds," *J. Biomed. Mater. Res. Part A*. **2024**, *in press online*.
107. Colvin, L.; Al Hussein, D.; Tu, D.; Dunlap, D.; Lalonde, T.; Üçüncü, M.; Megia-Gernandez, A.; Bradley, M.; Liu, W.; **Grunlan, M.A.**; Coté, G.L.* "Computational model-assisted development of a non-enzymatic fluorescent glucose sensing assay," *ACS Sensors*, **2024**, *9*, 6218-6227.

106. Ali, N.; Demott, C.J.*; Dingus, O.F.*; **Grunlan, M.A.**; Dunn, A.C.+ "Network interactions simultaneously enhance stiffness and lubricity of triple network hydrogels," *Soft Matter*, **2024**, *20*, 8783-8792.
105. Nitschke, B.M.*; Butchko, E.A.**; Wahby, M.N.**; Breining, K.M.**; Konz, A.E.**; **Grunlan, M.A.**+ "Shape memory polymer Bioglass composite scaffolds designed to heal complex bone defects," *ACS Biomaterials Sci. Eng.* **2024**, *10*, 6509-6519.
104. Hicks, A.J.; Roberts, C.T.*; Robinson, A.; Wilson, K.; Kotamreddy, V.; LaRue, T.; Veyssi, A.; Beltran, F.O.*; Hakim, J., Rausch, M.K.; **Grunlan, M.A.**; Cosgriff-Hernandez, E.M.+ "Polycaprolactone-based shape memory foams as self-fitting vaginal stents," *Acta Biomaterialia*, **2024**, *187*, 177-182.
103. Raghuvaran, G.; Nischke, B.M.*; Roberts, C.T.*; **Grunlan, M.A.**; Pentzer, E.B.+ "Direct ink writing of porous shape memory polyesters," *Mater. Adv.* **2024**, *5*, 5763-5771.
102. Roberts, C.T.*; Beck, S.K.**; Prejean, C.M.**; Graul, L.M.; Maitland, D.J.; **Grunlan, M.A.**+ "Star-PCL- shape memory polymer (SMP) scaffolds with tunable transition temperatures for enhanced utility," *J. Mater. Chem. B.* **2024**, *12*, 3694-3702.
101. Nitschke, B.M.*; Beltran, F.O.*; Hahn, M.S.; **Grunlan, M.A.**+ "Trends in bioactivity: Inducing and detecting mineralization of regenerative polymeric scaffolds," *J. Mater. Chem. B.* **2024**, *12*, 2720-2736.

2023

100. Ganabady, K.; Contessi Negrini, N.; Scherba, J.C.; Nitschke, B.M.*; Alexander, M.R.; Vining, K.H.; **Grunlan, M.A.**; Mooney, D.J.; Celiz, A.D. "High throughput screening of thiol-ene click chemistries for bone adhesive polymers," *ACS Appl. Mater. & Interfaces*, **2023**, *15*, 44.
99. Beltran, F.O.*; Arabiyat, A.S.; Culibrk, R.A.; Yeisley, D.J.; Houk, C.J.**; Hicks, A.J.**; Negron-Hernandez, J.*; Nitschke, B.M.*; Hahn, M.S.; **Grunlan, M.A.**+ "Enhanced degradation and bioactivity in polysiloxane-based shape memory polymer (SMP) scaffolds," *Polymer*, **2023**, *284*, 126291.
98. Demott, C.J.*; Jones, M.R.**; Chesney, C.D.**; **Grunlan, M.A.**+ "Adhesive hydrogel building blocks to reconstruct complex cartilage," *ACS Biomat. Sci. Eng.* **2023**, *9*, 1952-1960.
97. Marmo, A.C.*; **Grunlan, M.A.**+ "Biomedical silicones: Leveraging additive strategies to propel modern utility," *ACS Macro Lett.* **2023**, *12*, 177-182.
96. Marmo, A.C.*; Lott, L.R.**; Pickett, J.H.**; Koller, H.E.*; Nitschke, B.M.*; **Grunlan, M.A.**+ Amphiphilic silicones for the facile dispersion of carbon nanotubes and formation of soft skin electrodes," *ACS Appl. Polym. Mater.* **2023**, *5*, 775-783.

2022

95. Demott, C.J.*; **Grunlan, M.A.**+ "Emerging polymeric material strategies for cartilage repair," *J. Mater. Chem. B.* **2022**, *10*, 9578-9589.
94. Demott, C.J.*; Jones, M.R.**; Chesney, C.D.**; Yeisley, D.J.; Culibrk, R.A.; Hahn, M.A.; **Grunlan, M.A.**+ "Ultra-high modulus hydrogels mimicking cartilage tissues throughout the body," *Macromol. Biosci.*, **2022**, 2200283.
93. Dong, P.*; Singh, K.A.; Soltes, A.M.**; Ko, B.K.; Gaharwar, A.K.; McShane, M.J.; **Grunlan, M.A.**+ "Silicone-containing thermoresponsive membranes to form an optical glucose biosensor," *J. Mater. Chem. B.* **2022**, *10*, 6118-6132.
92. Yang, F.; Kazi, A.; Marmo, A.C.*; **Grunlan, M.A.**; Tai, B.L.+ "Characterizing the separation behavior of photocurable PDMS on a hydrogel film during VAT photopolymerization: A benchmark study," *Additive Manuf.* **2022**, *58*, 103070.

91. Marmo, A.C.*; Rodriguez Cruz, J.J.**; Pickett, J.H.**; Lott, L.R.**; Theibert, D.S.; Chandler, H.L.; **Grunlan, M.A.**+ “Amphiphilic silicones to mitigate lens epithelial cell growth onto intraocular lenses,” *J. Mater. Chem. B*, **2022**, *10*, 3064-3072.
90. Dong, P.*; Ko, B.K.; Lomeli, K.A.**; Clark, E.C.**; McShane, M.J.; **Grunlan, M.A.**+ “A glucose biosensor based on phosphorescence lifetime sensing and a thermoresponsive membrane,” *Macromol. Rapid Comm.*, **2022**, 2100902.
89. Stukel Shah, J.M.; Lundquist, B.; Macaitis, J.; Pfau-Cloud, M.R.*; Beltran, F.O.*; **Grunlan, M.A.**; Lien, W.; Wang, H.-C.; Burdette, A.J.+ “Comparative evaluation of mesenchymal stromal cell growth and osteogenic differentiation on a shape memory polymer scaffold,” *J. Biomed. Mater. Res. Part B*, **2022**, *110*, 2063-2074.
88. Jenkins, D.; Salhadar, K.; Ashby, G.; Misha, A.; Cheshire, J.; Beltran, F.*; **Grunlan, M.A.**; Andrieux, S.; Stubenrauch, C.; Cosgriff-Hernandez, E.+ “PoreScript: Semi-automated pore size algorithm for scaffold characterization,” *Bioactive Mater.*, **2022**, *13*, 1-8

2021

87. Houk, C.J.**; Beltran, F.O.*; **Grunlan, M.A.**+ “Suitability of EtO sterilization of polydopamine-coated, self-fitting bone scaffolds,” *Polym. Degrad. Stability*, **2021**, *194*, 109763.
86. Pfau, M.R.*; Beltran, F.O.**; Woodard, L.N.**; Saunders, W.B.; Dobson, L.K.; Gasson, S.B.; Moreno, M.R.; Robbins, A.B.; Lawson, Z.T.; **Grunlan, M.A.**+ “Evaluation of self-fitting, shape memory polymer scaffolds in a rabbit calvarial defect model,” *Acta Biomaterialia*, **2021**, *136*, 233-242.
85. Lawson, Z.T.+; Han, J.; Saunders, W.B.; **Grunlan, M.A.**; Moreno, M.R.; Robbins, A.B. “Methodology for performing biomechanical push-out tests for evaluating the osseointegration of calvarial defect repair in small animal models,” *MethodsX*, **2021**, *8*, 101541.
84. Arabiyat, A.A.&; Pfau, M.R.*&; **Grunlan, M.A.**; Hahn, M.S.+ “Intrinsic osteoinductivity of PCL-DA/PLLA semi-IPN shape memory polymer scaffolds,” *J. Biomed. Mater. Res. Part A*, **2021**, *21*, 2334-2345. (&equal contributions)
83. Dogbevi, K.S.; Ngo, B.K.D.*; Branan, K.L.; Gibbens, A.M.; **Grunlan, M.A.**; Coté, G.L.+ “A thin whole blood smear prepared via a pumpless microfluidic,” *Microfluid. Nanofluid.*, **2021**, *25*, 59.
82. Pfau, M.A.*; **Grunlan, M.A.**+ “Smart scaffolds: Shape memory polymers (SMPs) in tissue engineering,” *J. Mater. Chem. B*, **2021**, *9*, 4287-4297.
81. Dogbevi, K.S.; Ngo, B.K.D.*; Branan, K.L.; Gibbens, A.M.; **Grunlan, M.A.**; Coté, G.L.+ “Brightfield and fluorescence in-channel staining of thin blood smears generated in pumpless microfluidic,” *Anal. Methods*, **2021**, *13*, 2238-2247.
80. Pfau, M.R.*; McKinzey, K.G.**; Roth, A.A.**; Graul, L.M.; Maitland, D.J.; **Grunlan, M.A.**+ “Shape memory polymer (SMP) bone scaffolds with improved self-fitting properties,” *J. Mater. Chem. B*, **2021**, *9*, 3286-3837.
79. Suriboot, J.#; Marmo, A.C.*; Ngo, B.K.D.*; Nigam, A.; Ortiz-Acosta, D.; Tai, B.L.; **Grunlan, M.A.**+ “Amphiphilic, thixotropic additives for extrusion-based 3D printing of silica-reinforced silicone,” *Soft Matter*, **2021**, *17*, 4133-4142.
78. Beltran, F.O.*; Houk, C.J.**; **Grunlan, M.A.**+ “Bioactive siloxane-containing shape memory polymer (SMP) scaffolds with tunable degradation rates,” *ACS Biomater. Sci. Eng.* **2021**, *7*, 1631-1639.
77. Bonyadi, S.; Demott, C.J.*; **Grunlan, M.A.**; Dunn, A.C.+ “Cartilage-like tribological performance of charged double network hydrogels,” *J. Mech. Behav. Biomed. Mater.* **2021**, *114*, 104202.
76. Quiñones-Pérez, M.; Cieza, R.; Ngo, B.K.D.*; **Grunlan, M.A.**; Domenech, M.+ “Amphiphilic silicones to reduce the absorption of small hydrophobic molecules,” *Acta Biomaterialia*, **2021**, *121*, 339-348.

2020

75. Frassica, M.T.*; Jones, S.K.**; Suriboot, J.#; Arabiyat, A.S.; Ramirez, E.M.**; Hahn, M.S.; **Grunlan, M.A.**+ “Enhanced osteogenic potential of phosphonated-siloxane hydrogel scaffolds,” *Biomacromolecules*, **2020**, *21*, 5189-5199.
74. Frassica, M.T.*; Demott, C.J.*; Ramirez, E.M.**; **Grunlan, M.A.**+ “Spatially controlled templated hydrogels for orthopedic interface regeneration,” *ACS Macro Lett.* **2020**, *9*, 1740-1744.
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BOOK CHAPTERS:

Corresponding author⁺ || Advised post-doc[#] || Advised graduate student* ||

Co-advised graduate student (*) || 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):

167. “A resurfacing-regenerative approach to repair osteochondral defects,” presented at the **Materials Research Society (MRS) National Meeting**, Boston, MA USA, December 5, 2024. [talk – [INVITED](#)]
166. “Responsive polymers to advance medical device design,” presented at **California Polytechnic University**, San Luis Obispo, CA, USA, November 15, 2024. [talk – [INVITED](#)]
165. “Responsive polymers to advance medical device design,” presented at **Vanderbilt University**, Nashville, TN, USA, November 9, 2024. [talk – [INVITED](#)]
164. “A resurfacing-regenerative approach to repair osteochondral defects,” presented to **Arizona State University**, Phoenix, AZ, USA, October 21, 2024. [talk - [INVITED](#)]
163. “Responsive polymers to advance medical device design,” presented at **Imperial College London**, London, UK, October 9, 2024. [talk – [INVITED](#)]
162. “Amphiphilic silicones to with modern utility for medical devices,” presented at the **Biointerface Conference**, Minneapolis, MN, USA, October 3, 2024. [talk – [INVITED](#)]
161. “Advancing medical devices design: Breakthroughs in responsive polymers,” presented at the **American Chemical Society (ACS) National Meeting**, Denver, Co, USA, August 20, 2024. [PLENARY talk – [INVITED](#)]
160. “Self-fitting, shape memory polymer scaffolds for bone defect repair,” presented at the **American Chemical Society (ACS) National Meeting**, Denver, Co, USA, August 20, 2024. [talk – [INVITED](#)]

159. "Leveraging and suppressing stimuli-responsivity: Biomaterials to treat osteochondral defects," presented at the **American Chemical Society (ACS) National Meeting**, Denver, Co, USA, August 19, 2024. [talk – [INVITED](#)]
158. "Amphiphilic silicones to with modern utility for medical devices," presented at the **American Chemical Society (ACS) National Meeting**, Denver, Co, USA, August 19, 2024. [talk – [INVITED](#)]
157. "Amphiphilic silicones with modern utility for medical devices," presented at the **University of South Brittany**, Lorient, France, June 19, 2024. [talk - [INVITED](#)]
156. "Amphiphilic silicones with modern utility for medical devices," presented to **Penn State**, Dept. of Biomedical Engineering, State College, PA, March 21, 2024. [talk - [INVITED](#)]
155. "A resurfacing-regenerative approach to repair osteochondral defects using a bioprosthetic device," presented to **The Hong Kong Polytechnic University**, Hong Kong, China, March 11, 2024. [talk - [INVITED](#)]
154. "A resurfacing-regenerative approach to repair osteochondral defects using a bioprosthetic device," presented to the **University of Virginia**, Dept. of Chemical Engineering, Charlottesville, VA, January 25, 2024. [talk - [INVITED](#)]
153. "A resurfacing-regenerative approach to repair osteochondral defects using a bioprosthetic device," presented at the **Materials Research Society (MRS) National Meeting**, Boston, MA, November 28, 2023. [talk]
152. "Self-fitting, shape memory polymer scaffolds for bone defect repair," presented at **North Dakota State University**, Dept. of Coatings & Polymeric Materials, Fargo, ND, November 1, 2023. [talk - [INVITED](#)]
151. "Amphiphilic silicones to mitigate lens epithelial cell growth on intraocular lenses (IOLs)," presented to the **University of Lille**, Lille, France, October 27, 2023. [talk (Zoom) - [INVITED](#)]
150. "Amphiphilic silicones to mitigate lens epithelial cell growth on intraocular lenses (IOLs)," presented at the **American Chemical Society (ACS) National Meeting**, San Francisco, CA, August 15, 2023. [talk – [INVITED](#)]
149. "Soft skin electrodes formed by facile dispersion of CNTs in silicone," presented at the **American Chemical Society (ACS) National Meeting**, San Francisco, CA, August 14, 2023. [talk – [INVITED](#)]
148. "Amphiphilic surface modifying additives – Imparting antifouling behavior to silicones and polyurethanes," presented at **Office of Naval Research (ONR) Biofouling & Coatings Program Review**, San Diego, CA, June 23, 2023. [talk - [INVITED](#)]
147. "Self-fitting, shape memory polymer scaffolds for bone defect repair," presented at **University of Lille**, Lille, France, May 30, 2023. [talk - [INVITED](#)]
146. "Self-fitting, shape memory polymer scaffolds for bone defect repair," presented at **University of Lorraine**, Metz, France, April 24, 2023. [talk - [INVITED](#)]
145. "Self-fitting, shape memory polymer scaffolds for bone defect repair," presented at **University of Zagreb**, Zagreb, Croatia, March 20, 2023. [talk - [INVITED](#)]
144. "Self-fitting, shape memory polymer scaffolds for bone defect repair," presented **Ss. Cyril and Methodius University**, Skopje, North Macedonia, March 16, 2023. [talk - [INVITED](#)]
143. "Self-fitting, shape memory polymer scaffolds for bone defect repair," presented at **University of Belgrade**, Belgrade, Serbia, March 13, 2023. [talk - [INVITED](#)]
142. "Self-fitting, shape memory polymer scaffolds for bone defect repair," presented at **Imperial College London**, London, UK, February 20, 2023. [talk - [INVITED](#)]
141. "Self-fitting, shape memory polymer scaffolds for bone defect repair," presented at **Biointerface Symposium**, Portland, OR, November 2, 2022. [talk - [INVITED](#)]

140. "Self-fitting, shape memory polymer scaffolds for bone defect repair," presented at the **American Chemical Society (ACS) National Meeting**, Chicago, IL, August 23, 2022. [talk - [INVITED](#)]
139. "Self-fitting, shape memory polymer scaffolds for bone defect repair," presented at the **University of South Brittany**, Lorient, France, June 13, 2022. [talk - [INVITED](#)]
138. "Shape memory polymer scaffolds with tunable properties," presented at the **American Chemical Society (ACS) National Meeting**, San Diego, CA, March 22, 2022. [talk - [INVITED](#)]
137. "Biomaterials designed to heal bone tissue," presented at the **48th Annual Texas Junior Science & Humanities Symposium**, TAMU, College Station, TX, January 28, 2022. [talk (virtual) - [INVITED](#)]
136. "Self-fitting, shape memory polymer scaffolds for bone defect repair," presented at the **AIChE Annual Meeting**, Boston, MA, November 11, 2021. [talk (virtual) - [INVITED](#)]
135. "Self-fitting, shape memory polymer scaffolds for bone defect repair," presented at the **TAMU College of Dentistry**, Dallas, TX, November 10, 2021. [talk - [INVITED](#)]
134. "Shape memory polymer scaffolds with tunable properties," presented at **MACROMEX 2021**, Cancun, Mexico, November 2, 2021. [talk - [INVITED](#)]
133. "Orthopedic biomaterials enabled by network architecture," presented at the **Rensselaer Polytechnic Institute (RPI)**, Troy, NY, March 4, 2021. [talk (virtual) - [INVITED](#)]
132. "Orthopedic biomaterials enabled by network architecture," presented at the **Queen Mary University of London, School of Engineering and Materials**, London, UK, February 11, 2020. [talk - [INVITED](#)]
131. "PNIPAAm-based double network hydrogels as self-cleaning membranes for glucose biosensors," presented at the **Next Generation Smart Materials Workshop**, Savannah, GA, USA, December 15-18, 2019. [talk - [INVITED](#)]
130. "Orthopedic biomaterials enabled by network architecture," presented at the **University of Delaware, Department of Materials Science & Engineering**, Newark, DE, USA, November 20, 2019. [talk - [INVITED](#)]
129. "Self-fitting, shape memory scaffolds for bone defect repair," presented at the **Clinical Science and Translational Research Grand Rounds**, College Station, TX, USA, November 5, 2019. [talk - [INVITED](#)]
128. "Orthopedic biomaterials enabled by network architecture," presented at the **Polymer Composites and High Performance Materials Workshop**, Rohnert Park, CA, USA, July 23, 2019. [talk - [INVITED](#)]
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, October 17-20, 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 Days**, 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)₃Si-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[Glycidylxypropyl]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[methyl dimethyl phosphonopropylsiloxane/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]

SIGNIFICANT SERVICE ACTIVITIES:

Professional Society Service:

Associate Editor - *ACS Macro Letters* (IF = 7.015) (May 2022 – present)

Editorial advisory board member - *ACS Biomaterials Science & Engineering* (IF = 5.395) (Jan 2023 - present)

Editorial advisory board member - *ACS Macro Letters* (IF = 7.015) (Jan 2022 – May 2022)

Editorial advisory board member - *Journal of Materials Chemistry B* (IF = 7.0) (2020 – present)

Editorial advisory board member - *Biomacromolecules* (IF = 6.092) (2019 - present)

Editorial advisory board member - *Int'l Journal of Polymeric Materials* (IF = 3.221) (2014 – present)

Editorial board member - *Journal of Biomaterials & Tissue Eng.* (American Scientific Pub.) (2011-present)

Editorial advisory board member - *Macromolecules* (2019 - 2021)

Chair, Biomedical Engineering Society (BMES) Mid-Career Award Committee (2022 – present)

Invited Participant, NSF-DMR/NIH-NIBIB-Sponsored Planning Workshop: "Leveraging data-driven design and synthetic biology to enable next-generation active biomaterials". (University of Oregon; May 13-14, 2024).

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

Member, ACS PMSE Division, Young Scientist Committee (2019 – present)

Alternate Councilor, American Chemical Society (ACS) Polym. Mater. Sci. and Eng. Division (2024-2026)

"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)

Co-Organizer for International- and National-level Meetings & Symposia: (9) “PMSE Centennial: Celebration of Success and New Frontiers in Polymeric Materials Science & Engineering,” American Chemical Society (ACS) National Meeting, New Orleans, LA, United States, Mar. 18-20, **2024**, **(8)** “Biomaterials for Regenerative Engineering,” Materials Research Society (MRS) National Meeting, Boston, MA, United States, Nov. 27- Dec. 1, **2023**, **(7)** “Polymeric Materials: From Synthesis to Application: USA-Israel Joint Symposium,” American Chemical Society (ACS) National Meeting, San Francisco, CA, United States, Aug. 14-16, **2023**, **(6)** **Polymers** for Advanced Technologies (PAT) International Meeting, College Station, TX, United States, Aug. 8-10, **2019**, **(5)** “PMSE Future Faculty Symposium” American Chemical Society (ACS) National Meeting, Boston, MA, United States, Aug. 19-22, **2018**, **(4)** “Biomaterials for Regenerative Engineering,” Materials Research Society (MRS) National Meeting, Boston, MA, United States, Nov. 29 – Dec. 4, **2015**, **(3)** “Polymeric Biomaterials” American Chemical Society (ACS) National Meeting, Denver, CO, United States, March 22-26, **2015**, **(2)** “Polymeric Biomaterials” American Chemical Society (ACS) National Meeting, Philadelphia, PA, United States, Aug. 19-23, **2012**, **(1)** “Bioactive Polymers and Polymer Surfaces” American Chemical Society (ACS) National Meeting, Boston, MA, United States, Aug. 22-26, **2010**.

Departmental Service:

- **Administrative**

Associate Department Head, Department of Biomedical Engineering, TAMU, 8/2020 – 8/2022

Research Director, Department of Biomedical Engineering, TAMU, 8/2019 – 8/2020

Director of the Undergraduate Program, Dept. of Biomedical Engineering, TAMU, 10/2013 – 9/2017

- **Other**

Mentor [Academy of Future Faculty], Abigail Clevenger (Ph.D. candidate) Department of Biomedical Engineering, TAMU, 9/2022 – present; Sarah Hargett (Ph.D. candidate); Department of Biomedical Engineering, TAMU, 9/2023 – present.

Member, BME/CVM Initiatives Committee, Department of Biomedical Engineering, TAMU, 8/2022-present

Member, TT Faculty Search Committee, Department of Biomedical Engineering, TAMU, 2017-2019, 2023 - present

Member, Post-tenure Review Committee, Department of Biomedical Engineering, TAMU, 2017-present

Chair, Post-tenure Review Committee, Department of Biomedical Engineering, TAMU, 2022-2023

Member, APT Promotion Committee, Department of Biomedical Engineering, TAMU, 2022-2023

Member, APT Faculty Search Committee, Department of Biomedical Engineering, TAMU, 2021-2023

Member, P&T Committee, Department of Biomedical Engineering, TAMU, 2017-2019, 2021-present

Member, Strategic Planning Committee, Department of Biomedical Engineering, TAMU, 2021 - 2022

Member, REDI Committee, Department of Biomedical Engineering, TAMU, 2021 – 2022

Chair, Promotion & Tenure Committee, Department of Biomedical Engineering, TAMU, 2019-2020

Member, Research Committee; Department of Biomedical Engineering, TAMU, 2017 - 2019

Chair, TT Faculty Search Committee, Department of Biomedical Engineering, TAMU, 2015-2017

Member, DH Search Committee, Department of Biomedical Engineering, TAMU, 2014-2015; 2017-2018

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

University Service:

Deputy Director, NSF ERC “PATHS-UP”, 10/2017 – 8/2019

Member, CPI Executive Committee of CPI, 2017 – 2021

Member (representing Engineering), TAMU Council of Principal Investigators (CPI), 2017 – 2021

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)

Member, Promotion and Tenure Committee; College of Engineering, TAMU (Fall 2019 – Spring 2022)

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 at San Antonio),” – Annual conference (2010 - 2018) [rotating between universities]. Co-organizer of event in 2018 at TAMU.

SELECTED AWARDS, HONORS & DISTINCTIONS:

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

Fellow, American Chemical Society (ACS) (Inducted 2019)

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

Fellow, ACS Division of Polymeric Materials Science & Engineering (PMSE) (inducted 2022)

Fellow, Biomedical Engineering Society (BMES) (inducted 2022)

Senior Member, National Academy of Inventors (NAI) (inducted 2022)

Royal Academy of Engineering (RAER) Distinguished International Associate (2024-2025)

TAMU College of Engineering Faculty Impact Award in Service (2023)

Distinguished Service Award, ACS PMSE Division (2021)

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)

Chancellor EDGES Fellow (Texas A&M University; 2020)

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 (2015)

Royal Academy of Engineering Distinguished Visiting Fellowship (2024-2025)

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]

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):

1. **Dr. Damion Dixon**; 6/2023 - present

6. **Harrison Koller**: Ph.D. student, Chemistry; 8/2022 - *present*
5. **Oliva Dingus**: Ph.D. student, Biomedical Engineering; 8/2021 – *present*
4. **Brandon Nitschke**: Ph.D. student, Biomedical Engineering; 8/2021 – *present*
3. **Carolina Martinez**: Ph.D. student, Chemistry; 7/2021 - *present*
2. **Jenlyan Negron-Hernandez**: Ph.D. student, Chemistry; 7/2021 - *present*
1. **Courteney Roberts**: Ph.D. student, Biomedical Engineering; 1/2021 - *present*

13. **Darian Kanu**: undergraduate, Materials Science & Engineering; 11/2024 - *present*
12. **Preston Frazier**: undergraduate, Biomedical Engineering; 6/2024 - *present*
11. **Rachel Bear**: undergraduate, Biomedical Engineering; 6/2024 - *present*
10. **Anika Palacharla**: undergraduate, Biomedical Engineering; 6/2024 – 5/2024
9. **Trystan Harris**: undergraduate, Materials Science & Engineering; 1/2024 - *present*
8. **Ainsley Shield**: undergraduate, Biomedical Engineering; 8/2023 - *present*
7. **Kayley Breining**: undergraduate, Materials Science & Engineering; 5/2023 - *present*
6. **Andrew Haney**: undergraduate, Materials Science & Engineering; 5/2023 - *present*
5. **MaryGrace Wahby**: undergraduate, Biomedical Engineering; 1/2023 - 5/2024;
4. **Kathleen Parrish**: undergraduate, Biomedical Engineering; 1/2023 – 5/2024;
3. **Mabel Prejean**: undergraduate, Biomedical Engineering; 6/2022 – *present*
2. **Theo Ferrell**: B.S., Biomedical Eng. (2024); 6/2022 – 5/2024

1. **Varshitha Krishan:** undergraduate, Biomedical Engineering; *1/2022 – 5/2022; 9/2022 - present*

FORMER POST-DOCS AND STUDENTS:

As Sole Chair – Post-doc

3. **Felipe Beltran:** Post-doctoral fellow; *1/2022 – 5/2022.*
2. **Jakkrit Suriboot:** Post-doctoral fellow; *6/2016 – 7/2019.* Currently – Researcher, SCG (Bangkok City, Thailand)
1. **Melissa Giese Hawkins:** Post-doctoral fellow; *1/2015 – 5/2016*

As Sole Chair - (Ph.D. Students)

16. **Conner Demott:** Ph.D., Biomedical Engineering; *8/2018 – 12/2022*
15. **Alec Marmo:** Ph.D., Materials Science and Engineering; *8/2018 – 12/2022.* Currently – Staff Process Engineer; J&J Vision (Jacksonville, FL)
14. **Felipe Beltran:** Ph.D., Materials Science and Engineering; *1/2017 – 12/2021.* Currently – Government lab
13. **Ping Dong:** Ph.D.; Biomedical Engineering; *8/2016 – 12/2021.* Currently – Post-doc; Prof. Matthew Becker, Duke University (Durham, NC)
12. **Michaela Pfau:** Ph.D.; Biomedical Engineering; *8/2016 – 5/2021.* Currently – Post-doc; Profs. Marc Hillmyer and Chris Ellison, University of Minnesota (Minneapolis, MN)
11. **Michael Frassica:** Ph.D.; Biomedical Engineering; *8/2016 – 12/2020.* Currently – Senior Clinical Research Scientist; Abbott (Frisco, TX)
10. **Bryan Ngo:** Ph.D.; Biomedical Engineering; *8/2015 – 5/2020.* Currently – Senior Product Engineer; VenoStent, Inc. (Houston, TX)
9. **A. Kristen Means:** Ph.D.; Materials Science and Engineering; *8/2014 – 5/2019.* Currently – Bioengineer, 3D Systems Corp. (Houston, TX)
8. **Lindsay Nail Woodard:** Ph.D; Biomedical Engineering; *7/2013 – 5/2018.* Currently – Research Scientist & Principal Investigator; Luna Innovations, Inc. (Charlottesville, VA)
7. **Marc Rufin:** Ph.D.; Biomedical Engineering; *8/2010 – 5/2015.* Currently – Principal Materials Engineer; Medtronic (Minneapolis, MN).
6. **Melissa Giese Hawkins:** Ph.D.; Biomedical Engineering; *8/2010 – 12/2014.*
5. **Ruochong Fei:** Ph.D.; Biomedical Engineering (*8/2009 - 12/2014*). Currently – Software Engineer, Google (San Jose, CA).
4. **Brennan Bailey:** Ph.D.; Materials Science and Engineering; *7/2009 – 8/2013.* Post-doctoral research associate at École Polytechnique Fédérale de Lausanne (EPFL); Switzerland, (Prof. Veronique Michaud). Currently – Scientific communication manager; Roche (Risch-Rotkreuz, Switzerland).
3. **Dawei Zhang:** Ph.D.; Materials Science and Engineering; *7/2009 – 5/2013.* Currently - Professor; University of Science & Technology (Beijing, China).
2. **Yaping Hou:** Ph.D.; Materials Science and Engineering; *8/2004 – 12/2009.* Post-doc with Prof. Mariah Hahn (Dept. of Chemical Engineering, TAMU), post-doc with Prof. Min Lee (College of Dentistry, UCLA). Currently – VP, International Business Development; Xiamen SINOPEG Biotech, Inc. (San Francisco, CA).
1. **Ranjini Murthy:** Ph.D.; Materials Science and Engineering; *8/2004 – 5/2009.* Currently - Business Director; Stepan Company (Chicago, IL)

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 – Marketing Manager, Dow Silicones Corporation (Midland, TX).

As Co-Chair – (Ph.D. Students)

2. **Alexander Abraham:** Ph.D.; Biomedical Engineering; (8/2015) – Currently – President, Business Development and Operations, AJ Real Estate (Orlando, FL).
1. **Rebecca Gant:** Ph.D.; Biomedical Engineering; (5/2009) – Currently - Scientist, PROFUSA, Inc. (Houston, TX).

Advisor – (B.S. Students)

84. **Sriya Parameshwar:** undergraduate, Biomedical Engineering; 1/2024 – 5/2024
83. **Elizabeth Butchko:** undergraduate, Biomedical Engineering; 9/2022 – 5/2024
82. **Paola Chavarria:** B.S., Biomedical Eng. (2024); 1/2023 – 5/2024
81. **Megan Bassinger:** B.S., Chemistry (2024); 1/2023 – 5/2024
80. **Carter Lucas:** B.S., Materials Science & Eng. (2024); 5/2023 – 5/2024
79. **Kaley Beach:** undergraduate, Materials Science & Eng. (2024); 5/2023 – 4/2024
78. **Chiamaka Akparu:** undergraduate, Biomedical Eng. (2023); 9/2021 – 5/2023
77. **Jackson Pickett:** B.S., Biomedical Eng. (2023); 6/2021 – 7/2023
76. **Lucas Lott:** B.S., Biomedical Eng. (2023); 7/2021 – 5/2023
75. **Cesar Ramirez:** B.S., Biomedical Eng. (2022); 6/2022 – 5/2023
74. **Alex Konz:** B.S., Biomedical Eng. (2024); 1/2022 – 12/2022
73. **Amelia Soltes:** B.S., Biomedical Eng. (2022); 1/2021 – 5/2022
72. **Whitney Sloan:** B.S., Biomedical Eng.; (2021); 1/2020 – 5/2020; 8/2021 – 5/2021
71. **Ashley Hicks:** B.S., Biomedical Eng. (2022); 1/2020 – 5/2020, 1/2021 - 5/2022
70. **Sarah Beck:** B.S., Biomedical Eng. (2022); 8/2021 – 5/2022
69. **James Sampson:** B.S., Biomedical Eng. (2024); 1/2022 – 5/2022
68. **Caleb Chesney:** B.S., Biomedical Eng. (2023); 1/2020 – 5/2020, 1/2020 – 1/2021
67. **Jessica Johnson:** B.S., Biomedical Eng. (2022); 1/19-5/19, 8/19 -5/20, 1/20-5/21; 8/21-5/21
66. **McKenzie Jones:** B.S., Biomedical Eng. (2021); 8/2019 – 5/2020, 8/2020 – 5/2021
65. **J Jesus Rodriguez Cruz:** B.S., Biomedical Eng. (2021); 8/2019 – 5/2020, 8/2020 – 5/2021
64. **Emily Rayer:** B.S., Biomedical Eng. (2021); 8/18 - 5/19, 8/19 – 5/20, 11/20 – 5/2021
63. **Esteban Ramirez:** B.S., Biomedical Eng. (2021); 1/2019 – 5/2020
62. **Emily Clark:** B.S., Biomedical Eng. (2021); 1/2019 - 5/2019, 8/2019 – 5/2020
61. **Kayllie Lomeli:** B.S., Biomedical Eng. (2021); 6/2019 – 12/2019
60. **Rabia Ali:** B.S., Biomedical Eng. (2021); 8/2018 - 5/2020
59. **Christopher Houk:** B.S., Biomedical Eng. (2020); 4/2018 - 5/2020
58. **Sarah Jones:** B.S., Biomedical Eng. (2020); 8/2017 - 5/2019, 8/2019 - 5/2020
57. **Kelly McKinzey:** B.S., Biomedical Eng. (2020); 1/2017 – 5/2018, 8/2019 – 5/2020
56. **Abigail Roth:** B.S., Biomedical Eng. (2019) ; 1/2017 – 5/2019
55. **Bradley Schott:** B.S., Biomedical Eng. (2019); 8/2017 – 5/2019
54. **Mallory Taylor:** B.S., Biomedical Eng. (2018); 1/2017 – 5/2017
53. **Kendrick Lim:** B.S., Biomedical Eng., (2019); 8/2016 – 12/2016; 7/2017 – 7/2019
52. **Courtney Shrode:** B.S., Biomedical Eng. (2018); 8/2016 – 8/2018
51. **Andrea Brunal:** B.S., Biomedical Eng. (2019); 8/2016 – 7/2017
50. **Lauren Whitney:** B.S., Biomedical Eng. (2018); 6/2015 – 7/2017
49. **Vanessa Page:** B.S., Biomedical Eng. (2017); 6/2015 – 5/2015; 8/2016 – 6/2017
48. **Bristin Rusenbeck:** B.S., Biomedical Eng. (2017); 5/2015 – 6/2017
47. **Kevin Kmetz:** B.S., Biomedical Eng. (2017); 1/2015 – 5/2016; 8/2016 – 5/2017
46. **Luke Oaks:** B.S., Biomedical Eng. (2016); 1/2015 – 5/2016

45. **Daniel Ehrhardt:** B.S., Biomedical Eng. (2016); 1/2015 – 5/2016
44. **Mikayla Barry:** B.S., Biomedical Eng. (2017); 6/2014 – 7/2017
43. **Rebecca Sehnert:** B.S., Biomedical Eng. (2016); 6/2013 – 5/2016
42. **Erica Gacasan:** B.S., Biomedical Eng. (2016); 1/2013 – 5/2016
41. **Abigail Advincula:** B.S., Biomed. Eng. (Case Western Reserve U.); 5/2015 – 8/2015
40. **Tyler Nichols:** B.S., Biomedical Eng. (2016); 1/2015 – 5/2015
39. **Ala Yaser Tobeh:** B.S., Biomedical Eng. (2015); 1/2014 – 5/2015
38. **Paige Adair:** B.S., Biomedical Engineering (2015); 1/2014 – 5/2015
37. **Alexandra Herrick:** B.S., Biomedical Engineering (2015); 1/2014 – 5/2015
36. **Jessica Reinhard:** B.S., Biomedical Engineering (2015); 1/2014 – 12/2014
35. **Hanna Glidewell:** B.S., Biomedical Engineering (2014); 1/2014 – 5/2014
34. **Robert Hunt:** B.S., Biomedical Eng. (2014); 8/2013-12/2013; 8/2014 - 12/2014
33. **Berkay Basagaoglu:** B.S., Biomedical Eng. (2016); 6/2013-5/2014
32. **Matthew Hurly:** B.S., Biomedical Eng. (2014); 1/2013-5/2014
31. **Samantha Schott:** B.S., Biomedical Eng. (2015); 1/2013-5/2014
30. **Olivia George:** B.S., Biomedical Eng. (2015); 8/2012-5/2014
29. **Daniel Callahan:** B.S., Biomedical Eng.(2014); 8/2013-12/2013
28. **Ryan Ng:** B.S., Chemical Eng. (2014); UC Santa Barbara; 7/2013-8/2013
27. **Dedeepya Puvvada:** B.S., Biomedical Eng. (2014); 1/2013-5/2013
26. **Alex Quante:** B.S., Biomedical Eng. (2014); 1/2013-5/2013
25. **Bagratt Grigoryan:** B.S., Biomedical Eng. (2013); 8/2012-5/2013
24. **John Gruetzner:** B.S., Biomedical Eng. (2013); 1/2012-5/2013
23. **A. Kristen Means:** B.S., Biomedical Eng. (2014); 8/2011-5/2014
22. **Lindsay Nail:** B.S., Biomedical Eng. (2013); 8/2011-5/2013
21. **Keri Petersen:** B.S., Biomedical Eng. (2013); 8/2011-5/2013
20. **Julie Strobe:** B.S., Bioengineering Eng. (2012; University of Missouri); 5/2011-8/2011
19. **William Burkes:** B.S., Biomedical Eng. (2012); 8/2010-05/2011
18. **Jeehyun Park:** B.S., Biomedical Eng. (2011); 5/2010-5/2011
17. **Jason George:** B.S., Biomedical Eng. (2012); 8/2009-5/2012
16. **Vivian Hui:** B.S., Biomedical Eng. (2011); 8/2009-12/2010
15. **Rachel Unruh:** B.S., Biomedical Eng. (Baylor University) (2011); 6/2010-8/2010
14. **Stacy Prukop:** B.S., Biomedical Eng. (2010); 6/2009-5/2010
13. **Melissa Giese:** B.S., Biomedical Eng. (2010); 1/2009 – 5/2010
12. **Chris Weyand:** B.S., Biomedical Engineering (2010); 1/2009 – 12/2009
11. **Shin Duk Lee:** B.S., Biomedical Eng. (2009); 8/2008 – 5/2009
10. **Tauseef Charanya:** B.S., Biomedical Eng. (2010); 8/2008 – 5/2009
9. **Brennan Bailey:** B.S., Biomedical Engineering (2009); 1/2008 – 5/2009
8. **Jonathan Burkes:** B.S., Biomedical Eng. (2010); 1/2008 – 5/2009
7. **Christopher Perry:** B.S., Biomedical Eng. (2009); 1/2008 – 5/2008
6. **Cody Schoener:** B.S., Biomedical Eng. (2008); 1/2008 – 05/2008
5. **Courtney Shell:** B.S., Biomedical Eng. (2010); 5/2007-5/2008
4. **Ashley Smitherman:** B.S., Biomedical Eng. (2007); 1/2007 – 12/2007
3. **Casey Cox:** B.S., Biomedical Eng.(2007); 6/2006 – 12/2006
2. **Andrew Matthews:** B.S. Biomedical Eng. (2008); 5/2006-8/2006
1. **Katherine Regan:** B.S., Chemistry (2007); 01/2006-12/2006

Notable distinctions of advised undergraduate students: “(#)” = total number of students

- NSF GRFP: **(5):** Sarah Jones, 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 **(14)**: *Rabia Ali, Emily Rayer, Abigail Advincula, Rebecca Sehnert, Erica Gacasan, Ryan Ng, Lindsay Nail, Julie Strobe, 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 **(16)**: *Theodore Ferrell, C. Mabel Prejean, Amelia Soltes, Ashley Hicks, Rabia Ali, Christopher Houk, Emily Rayer, 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 **(13)**
- Co-authored peer-reviewed journal article (in press or accepted) **(52)**
- TAMU Undergraduate Research Ambassadors **(2)**: *Erica Gacasan, Mikayla Barry*