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EDUCATION:

August 2001-
August 2004 **Ph.D., Chemistry**
UNIVERSITY OF SOUTHERN CALIFORNIA (Los Angeles, CA)
Dissertation Title: Crosslinked Siloxanes: Preparation and Properties
Dissertation Advisor: Prof. William P. Weber

August 1995-
May 1997 **M.S., Polymers and Coatings**
NORTH DAKOTA STATE UNIVERSITY (Fargo, ND)
Thesis Title: Carbohydrate Polymers in Coatings
Thesis Advisor: Prof. J. Edward Glass

August 1991-
August 1995 **B.S., Chemistry**
NORTH DAKOTA STATE UNIVERSITY (Fargo, ND)

RESEARCH & PROFESSIONAL EXPERIENCE:

September 1, 2011-
present **Associate Professor**
TEXAS A&M UNIVERSITY (College Station, TX)
Dept. of Biomedical Engineering

Faculty – Department of Materials Science & Engineering (TAMU)

- Design of novel silicon-based polymeric materials with molecular control to improve performance in medical devices and regenerative therapies, including: blood-compatible coatings, self-cleaning biosensor membranes as well as hydrogels and shape memory polymer (SMP) foams tissue engineering scaffolds. The design of non-toxic marine coatings is also a topic of focus.

October 2013 – present **Director, Undergraduate of Programs**
Dept. of Biomedical Engineering

August 15, 2005-
September 1, 2011 **Assistant Professor**
TEXAS A&M UNIVERSITY (College Station, TX)
Dept. of Biomedical Engineering

Faculty – Department of Materials Science & Engineering (TAMU)

Sept.15, 2004-
August 12, 2005

Post-doctoral Research Associate
TEXAS A&M UNIVERSITY (College Station, TX)
Dept. of Chemistry
Research Advisor: Prof. David E. Bergbreiter

- Synthesis of polysiloxanes as soluble, inorganic polymer supports for a catalyst having phase selective solubility for catalyst recovery.

January 2002-
August 2004

Research Assistant (Ph.D. Thesis Research)
UNIVERSITY OF SOUTHERN CALIFORNIA (Los Angeles, CA)
Dept. of Chemistry

- Synthesis and characterization novel silicon-containing polymers, crosslinked silicone elastomers, and analysis of thermal, mechanical, and surface properties of silicone surfaces.

June 1997-
August 2001

Senior Chemist
H.B. FULLER COMPANY (St. Paul, MN)

- Synthesis and characterization of latex emulsion polymers and methanol solution polymers.

January 1996-
May 1997

Research Assistant (M.S. Thesis Research)
NORTH DAKOTA STATE UNIVERSITY (Fargo, ND)
Dept. of Polymers & Coatings

- Synthesis of associative thickeners based on cellulose and evaluation of rheology of solution and coatings formulations.

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:**

- Industrial sponsor (Grunlan, PI) 12/01/2014-11/30/2015
\$100,000 total costs
- American Kennel Club (Saunders, Grunlan - PIs) 01/01/14-12/31/15
\$120,872 total costs
Regenerative Osteochondral Plugs (ROPs) for the Treatment of Osteochondral Defects in Dogs
Development of scaffolds for osteochondral regeneration based on gradient hydrogels with varying levels of osteogenic and chondrogenic supplements.
- 1R01DK095101-01A1 (Grunlan, PI) 09/30/2012-8/31/2017
NIH/NIDDK \$1,532,310 total costs
A Self-Cleaning Membrane to Extend the Lifetime of an Implanted Glucose Biosensor.
The major goal of this project is to develop a membrane that extends the lifetime and efficacy of an implanted glucose biosensor.
- 1R03EB015202 (Grunlan, Hahn – dual PIs) 04/01/2012-03/31/2014
NIH/NIBIB \$141,599 total costs
Hybrid Inorganic-Organic Hydrogel Scaffolds for Osteochondral Regeneration.
The major goal of this research is to utilize inorganic-organic hydrogel scaffolds produced as continuous gradients as a combinatorial approach to evaluate the potential to direct hMSCs to produce bone or fibrocartilage for repair of ligament insertion sites.

- **Completed:**

- Industrial sponsor (Grunlan, PI) 08/01/2013-07/31/2014
\$100,000 total costs
- CBET 854462 (Grunlan, PI) 09/01/09-08/31/13
NSF/CBET \$300,000 total costs
Micropatterned Thermo-responsive Nanocomposite Hydrogel Surfaces with Self-Cleaning Behavior
The major goal of this project is to probe the long-term non-biofouling behavior of nanocomposite hydrogels.
- 1R21DK082930-01 (Grunlan, PI) 07/17/09-06/30/12
NIH/NIDDK \$385,748 total costs
Self-Cleaning Sensor Membranes to Improve Glucose Monitoring *In Vivo*.
The major goal of this project is to develop a membrane that extends the lifetime and efficacy of an implanted glucose biosensor.
- 1R21HL089964-01 (Grunlan, Hahn - dual PI) 07/01/08 – 06/30/11
NIH/NIBIB \$376,837 total costs
Novel Star-PDMS/PEO Hydrogel Scaffolds with Tunable Properties for Tissue Engineered Vascular Grafts (TEVGs).
The major goal of this project is to develop inorganic-organic hydrogel scaffolds to guide the regeneration of blood vessels.

REFEREED PUBLICATIONS:

Corresponding author[†]

Advised graduate student^{*}

Co-advised graduate student^([†])

Advised undergraduate student^{**}

- (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 cranio-maxillofacial (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.^{**}; 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 nanocomposite 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.*
- (7) **Grunlan, M.A.**; Lee, N.S.; Mansfeld, F.; Kus, E.; Finlay, J.A.; Callow, J.A.; Callow, M.E.; Weber, W.P.⁺ "Minimally adhesive polymer surfaces (MAPS) prepared from star oligosiloxanes and star oligofluorosiloxanes," *J. Poly. Sci., Part A: Polym. Chem.* **2006**, *44*, 2551-2566.
- (6) Kus, E.; **Grunlan, M.A.**; Weber, W.P.; Mansfeld, F.⁺ "Evaluation of nontoxic polymer coatings with potential biofoul release properties using EIS," *J. Electrochem. Soc.* **2005**, *152*, B236-B243.
- (5) **Grunlan, M.A.**; Lee, N.S.; Weber, W.P.⁺ "Crosslinking of 1,9-bis-[glycidyoxypropyl]penta-(1'H,1'H,2'H,2'H-perfluoroalkylmethylsiloxane)s with α,ω -diaminoalkanes: The cure behavior and film properties," *J. Appl. Poly. Sci.* **2004**, *94*, 203-210.
- (4) **Grunlan, M.A.**; Lee, N.S.; Cai, G.; Gädda, T.; Mabry, J.M.; Mansfeld, F.; Kus, E.; Wendt, D.E.; Kowalke, G.L.; Finlay, J.A.; Callow, J.A.; Callow, M.E.; Weber, W.P.⁺ "Synthesis of α,ω -bis epoxy oligo(1'H,1'H,2'H,2'H-perfluoroalkyl siloxane)s and properties of their photo-acid cross-linked films," *Chem. of Mater.* **2004**, *16*, 2433-2441.
- (3) **Grunlan, M.A.**; Lee, N.S.; Weber, W.P.⁺ "Synthesis of 1,9-bis[glycidyoxypropyl]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.
- (1) Grunlan, J.C.; Ma, Y.; **Grunlan, M.A.**; Francis, L.F.⁺ "Monodisperse latex with variable glass transition temperature and particle size for use as matrix starting material for conductive polymer composites," *Polymer* **2001**, *42*, 6913-6921.

CONFERENCE PROCEEDINGS:

Corresponding author⁺

Advised graduate student*

Advised undergraduate student**

- (36) **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.
- (35) 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.
- (34) 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.; Bullick, 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[Glycidyoxypropyl]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.

BOOK CHAPTERS:

- (3) **Grunlan, M.A.**; Lee, N.S.; Finlay, J.A.; Callow, J.A.; Callow, M.E.; Weber, W.P.[†] "Fluorinated Copoly(carbosiloxane)s: Synthesis, Copolymerization, and Cross-Linked Networks," in Science and Technology of Silicones and Silicone-Modified Materials, ACS Symposium Series 964, Clarson, S.J.; Fitzgerald, J.J.; Owen, M.J.; Smith, S.D.; Van Dyke, M.E., Eds., Amer. Chem. Soc., Washington, D.C., **2007**, pp. 37-48.
- (2) Kus, E.; **Grunlan, M.**; Weber, W.P.; Anderson, N.; Webber, C.; Stenger-Smith, J.D.; Zarras, P.; Mansfeld, F.[†] "Evaluation of the Protective Properties of Novel Chromate-Free Polymer Coatings Using Electrochemical Impedance Spectroscopy," in New Developments in Coatings Technology, ACS Symposium Series 962, Zarras, P.; Benicewicz, B.C.; Wood, T.; Richey, B., Eds., Amer. Chem. Soc., Washington, D.C., **2007**, pp. 297-322.
- (1) **Grunlan, M.A.**; Xing, L.; Glass, J.E. "Waterborne Coatings with an Emphasis on Synthetic Aspects: An Overview," in Technology for Waterborne Coatings, ACS Symposium Series 663, Glass, J.E., Ed., Amer. Chem. Soc., Washington, D.C., **1997**, pp. 1-26.

PRESENTATIONS:

(All presented by M.A. Grunlan)

- (66) "PEO-silane amphiphiles to decrease biofouling on silicones," by **Grunlan, M.A.** Presented at the Silicon-Containing Polymers and Composites 2014; December 14-17, 2014. [talk – INVITED]
- (65) "PEO-silane amphiphiles to decrease biofouling on silicones," by **Grunlan, M.A.** Presented at the 4th Zing Polymer Chemistry Conference; December 10-13, 2014. [talk – INVITED]
- (64) "Reducing biofouling on silicones with PEG-silane amphiphile additives: Marine and medical applications," by **Grunlan, M.A.** Presented at the Silicone Elastomers World Summit 2014; December 3-4, 2014. [talk – PLENARY, INVITED]
- (63) "Silicon-containing hydrogels and shape memory polymers for tissue regeneration," by **Grunlan, M.A.** presented to the Department of Materials Engineering, Purdue University, Lafayette, IN, United States; October 10, 2014. [talk - INVITED]
- (62) "A self-fitting shape memory polymer (SMP) scaffold with potential to treat cranio-maxillofacial (CMF) bone defects," by Zhang, D.*; George, O.J.**; Petersen, K.M.**; Jimenez-Vergara, A.C.; Hahn, M.S.; **Grunlan, M.A.** Presented at the 248th American Chemical Society (ACS) National Meeting, San Francisco, CA, United States, August 10-14, 2014. [talk – INVITED]
- (61) "Inorganic-organic hydrogel scaffolds for osteochondral tissue engineering," by Bailey, B.B.; Nail, L.N.; Munoz-Pinto, D.; Hahn, M.S.; **Grunlan, M.A.** Presented at the Spring 2014 Material Research Society (MRS) National Meeting, San Francisco, CA, United States, April 21-25, 2014. [talk]
- (60) "Silicon-containing hydrogels and shape memory polymers for tissue regeneration," by **Grunlan, M.A.** Presented to the Dept. of Bioengineering, Imperial College – London; November 28, 2013. [talk - INVITED]
- (59) "Nanocomposite self-cleaning membranes for implanted glucose biosensor," by **Grunlan, M.A.** Presented at the Composites at Lake Louise meeting, Lake Louise, Alberta, Canada; November 5, 2013. [talk - INVITED]
- (58) "Silicones with hydrophilicity and resistance to fouling," by **Grunlan, M.A.** Presented at the Polymer Technology Industrial Consortium (PTIC) meeting, Texas A&M University, College Station, TX, United States; October 25, 2013. [talk - INVITED]

- (57) "Silicon-containing hydrogels and shape memory polymers for tissue regeneration," by **Grunlan, M.A.** presented to the School of Polymers and High Performance Materials, University of Southern Mississippi, Hattiesburg, MS, United States; October 2, 2013. [talk - [INVITED](#)]
- (56) "Silicon-containing hydrogels and shape memory polymers for tissue regeneration," by **Grunlan, M.A.** Presented to the Dept. of Chemistry and Chemical Biology, McMaster University, Hamilton, Ontario, Canada; September 12, 2013. [talk - [INVITED](#)]
- (55) "Nanocomplex anti-fouling coatings based on PEO-silane amphiphiles," by **Grunlan, M.A.**; Hawkins, M.L.; Rufin, M.A.; Raymond, J.; Linossier, I. Presented at the MRS-Singapore ICMAT Conference, Singapore; June 30 - July 5, 2013 [talk - [INVITED](#)].
- (54) "Self-cleaning membranes for implanted glucose biosensors," by **Grunlan, M.A.**; Fei, R.; George, J.T.; Means, A.K. Presented at the MRS-Singapore ICMAT Conference, Singapore; June 30 - July 5, 2013 [talk].
- (53) "Self-cleaning membranes for implanted glucose biosensors," by **Grunlan, M.A.**; Fei, R.; George, J.T.; Means, A.K. Presented at the European Polymer Conference, Pisa, Italy; June 16-21, 2013 [talk].
- (52) "Anti-fouling behavior of coatings based on PEO-silane amphiphiles," by **Grunlan, M.A.**; Hawkins, M.L.; Rufin, M.A.; Linossier, I.; Raymond, J.E. Presented at the 2013 Polymers Gordon Research Conference, Mount Holyoke College, South Hadley, MA, United States; June 9-14, 2013 [poster].
- (51) "Nanocomplex anti-fouling coatings," by **Grunlan, M.A.** Presented at the Society of Plastics Engineers (SPE) ANTEC® Meeting, Cincinnati, OH, United States; April 21-25, 2013 [talk - [INVITED](#)].
- (50) "High strength thermoresponsive double network," by **Grunlan, M.A.**; Fei, R.; George, J.T.; Means, A.K. Presented at the 245th American Chemical Society (ACS) National Meeting, New Orleans, LA, United States; April 7-11, 2013 [talk].
- (49) "Gradient PDMS_{star}-PEG hydrogel scaffolds for osteochondral tissue engineering," by **Grunlan, M.A.**; Bailey, B.M.; Nail, L.N.; Hahn, M.S.; Munoz-Pinto, D. Presented at the 245th American Chemical Society (ACS) National Meeting, New Orleans, LA, United States; April 7-11, 2013 [talk].
- (48) "Self-cleaning membranes for implanted glucose biosensors," by **Grunlan, M.A.** Presented to the Department of Chemistry and Biochemistry, Cal Poly San Luis Obispo, San Luis Obispo, CA; United States, April 4, 2013 [talk - [INVITED](#)].
- (47) "Nanocomplex anti-fouling coatings based on PEO-silane amphiphiles," by **Grunlan, M.A.**; Hawkins, M.L.; Rufin, M.A.; Raymond, J.; Linossier, I. Presented at the ACS Silicon-Containing Polymer Conference; San Diego, CA, United States; December 9-12, 2012. [talk]
- (46) "Medical and marine anti-fouling coatings prepared with amphiphilic PEG-silanes," by **Grunlan, M.A.** presented at the Zing Polymer Chemistry Conference, Xcaret, Mexico; November 12-16, 2012. [talk - [INVITED](#)]
- (45) "PDMS_{star}-PEG hybrid scaffolds for bone tissue engineering," by **Grunlan, M.A.** presented at the 65th OMICS Group Conference – International Conference on Tissue Science and Engineering, Chicago, IL, United States; October 1-3, 2012. [talk - [INVITED](#)]
- (44) "Anti-fouling medical and marine coatings prepared with amphiphilic PEG-silanes," by **Grunlan, M.A.** presented at the PMSE Young Investigator Symposium, 244th American Chemical Society (ACS) National Meeting, Philadelphia, PA, United States; August 19-23, 2012. [talk - [INVITED](#)]
- (43) "Anti-fouling Coatings Prepared with PEG-Silane Amphiphiles – Medical and Marine Applications, by Grunlan, M.A.[†] Presented at 3M; Maple Grove, MN, United States; April 15, 2012. [talk-[INVITED](#)]

- (42) "Nanocomposite Hydrogels," by Grunlan, M.A. Presented at 2012 IPRIME (Industrial Partnership for Research in Interfacial and Materials Engineering); Minneapolis, MN, United States; May 30, 2012. [talk-INVITED]
- (41) "Anti-fouling coatings for medical and marine applications," by Hawkins, M.L.; Rufin, M.; Murthy, R.; Linossier, I.; **Grunlan, M.A.** Presented at the American Coatings Conference, Indianapolis, IN, United States, May 7-9, 2012. [talk - INVITED]
- (40) "Silicon-containing polymeric biomaterials," by **Grunlan, M.A.** Presented to Southwest Research Institute, San Antonio, TX, United States, April 20, 2012. [talk - INVITED]
- (39) "Self-cleaning membranes for implanted glucose biosensors," by **Grunlan, M.A.** presented to the Dept. of Chemistry, University of Minnesota, Minneapolis, MN, United States, April 12, 2012. [talk - INVITED]
- (38) "Porous inorganic-organic PDMS-PCL shape memory polymers," by Zhang, D.; Burkes, W.L.; Schoener, C.A.; **Grunlan, M.A.** presented at the 243rd American Chemical Society (ACS) National Meeting, San Diego, CA, United States, March 25-29, 2012. [talk]
- (37) "Anti-fouling coatings prepared with PEG-silane amphiphiles – Marine and medical applications," by Hawkins, M.L.; Rufin, M.; Murthy, R.; Linossier, I.; **Grunlan, M.A.** 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," by **Grunlan, M.A.** presented at the Smart Coatings Symposium; Orlando, FL, United States; February 22-24, 2012. [talk-INVITED]
- (35) Anti-fouling coatings prepared with amphiphilic PEG-silanes containing siloxane tethers," by Giese, M.L.; Rufin, M.; Murthy, R.; Linossier, I.; **Grunlan, M.A.** presented at the 242nd American Chemical Society (ACS) National Meeting, Denver, CO, United States, August 28-September 1, 2011. [talk-INVITED]
- (34) "PDMS_{star}-PEG hydrogels as tissue engineering scaffolds," by **Grunlan, M.A.**; Zhang, D.*; Hahn, M.S. Presented at the 4th International Conference on Tissue Engineering, Chania, Crete, Greece, May 31 – June 5 2011. [talk]
- (33) "Self-cleaning membranes for implanted glucose biosensors," by **Grunlan, M.A.** presented to the Dept. of Chemistry, University of Minnesota, Minneapolis, MN, United States, April 12, 2012. [talk - INVITED]
- (32) "Inorganic-organic shape memory polymers for bone defects," by **Grunlan, M.A.** 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," by **Grunlan, M.A.**; Fei, R.*; George, J.T.** 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," by **Grunlan, M.A.**; Fei, R.*; George, J.T.** Presented at the Polymer Chemistry Conference (Zing), Puerto Morelos, Mexico, November 19-22, 2010. [talk]
- (29) "Thermoresponsive nanocomposite hydrogels as self-cleaning membranes for glucose biosensors," by **Grunlan, M.A.**; Fei, R.*; Coté, G.L.; Alexander, A.A. 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," by **Grunlan, M.A.** 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," by Bailey, B.M.*; Hou, Y.*; **Grunlan, M.A.** 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 ," by **Grunlan, M.A.** 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 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," by Hou, Y.*; Schoener, C.A.*; Regan, K.R.**; Munoz-Pinto, D.; Hahn, M.S.; **Grunlan, M.A.** Presented at the Fall 2009 Material Research Society (MRS) National Meeting, Boston, MA, United States, December 1-5, 2009. [talk]
- (23) "Shape memory polymers with Si-containing segments," by **Grunlan, M.A.** 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," by **Grunlan, M.A.** Presented to the Dept. of Polymer Science and Engineering, University of Massachusetts, Amherst, MA, United States, September 18, 2009. [talk-INVITED]
- (21) "Photocurable Si-containing shape memory polymer," by Schoener, C.A.*; Weyand, C.B.**; Prukop, S.L.**; Giese, M.L.**; Zhang, D.*; **Grunlan, M.A.** 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," by **Grunlan, M.A.** Presented at the American Chemical Society (ACS) 6th Annual Polymers in Medicine and Biology: 2009 Meeting, Santa Rosa, CA, United States, June 14-17, 2009. [talk-INVITED]
- (19) "Si-Containing blood compatible coatings and hydrogel scaffolds: Going beyond PEO," by **Grunlan, M.A.** 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," by Hou, Y.*; Burkes, J.C.**; Lee, S.D.**; Bullick, A.S.; Hahn, M.S.; **Grunlan, M.A.** 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 ," by **Grunlan, M.A.** 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," by **Grunlan, M.A.**; Murthy, R.*; Bailey, B.M.**; Shell, C.E.** , presented at the Gordon Conference on Macromolecular Materials, Ventura, CA, United States, January 11-16, 2009. [poster]
- (15) "Development of a self-cleaning membrane for implantable glucose biosensors," by Gant, R.M.; Hou, Y.*; Coté, G.L.; **Grunlan, M.A.** Presented at the Fall 2008 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," by Murthy, R.*; Shell, C.**; **Grunlan, M.A.** 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," by **Grunlan, M.A.** Presented at the Spring 2007 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," by **Grunlan, M.A.**, Murthy, R.* Presented at the Fall 2007 Biomedical Engineering Society (BMES) National Meeting, Hollywood, CA, United States, Sept. 28, 2007. [poster]
- (11) "Inorganic-organic hydrogel scaffolds based on poly(dimethylsiloxane) and poly(ethylene oxide)," by **Grunlan, M.A.**, Hou, Y.*; Regan, K.R.**; Schoener, C.A.**; Hahn, M.S. Presented at the Fall 2007 Biomedical Engineering Society (BMES) National Meeting, Hollywood, CA, United States, Sept. 28, 2007. [poster]
- (10) "Inorganic-organic hydrogels with tunable properties," by Hou, Y.*; Regan, K.R.**; Schoener, C.A.*; Hahn, M.S.; **Grunlan, M.A.** 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," by **Grunlan, M.A.**⁺; Hahn, M. S.; Cox, C.D.**; Murthy, R.* 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," by, Murthy, R.*; **Grunlan, M.A.** 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," by **Grunlan, M.A.**; Bergbreiter, D.E.⁺, 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," by **Grunlan, M.A.**; Weber, W.P., 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," by **Grunlan, M.A.**; Lee, N.S; Weber, W.P.⁺ 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[Glycidyoxypropyl]penta-(1H',1H',2H',2H'-perfluoroalkylmethylsiloxane)s and their copolymerization with piperazine," by **Grunlan, M.A.**; Lee, N.S; Weber, W.P.⁺ 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," by **Grunlan, M.A.**; Lee, N.S; Weber, W.P.⁺, 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," by **Grunlan, M.A.**; Lee, N.S; Weber, W.P.⁺, 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," by **Grunlan, M.A.**; Mabry, J.M.; Weber, W.P.⁺ Presented at the 224th American Chemical Society (ACS) National Meeting, Boston, MA, United States, August 18-22, 2002. [poster]

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:

- 1) **Melissa Giese Hawkins:** Post-doctoral fellow; 01/2015 - present
- 1) **Marc Rufin:** Ph.D. candidate; Biomedical Engineering; 08/2010 – present
- 2) **Lindsay Nail:** Ph.D. candidate; Biomedical Engineering; 07/2013 – present
- 3) **Anna Kristen Means:** Ph.D. candidate; Materials Science and Engineering; 08/2014 - present
- 4) **Hanna Glidewell:** Ph.D. candidate; Biomedical Engineering; 08/2014 - present
- 1) **Erica Gacasan:** undergraduate: Biomedical Engineering; 01/2013-present
- 2) **Rebecca Sehnert:** undergraduate: Biomedical Engineering; 06/2013-present
- 3) **Alexandra Herrick:** undergraduate: Biomedical Engineering; 01/2014 – present
- 4) **Paige Adair:** undergraduate: Biomedical Engineering; 01/2014 – present
- 5) **Ala Yaser Tobeh:** undergraduate: Biomedical Engineering; 01/2014 – present
- 6) **Mikayla Barry:** undergraduate: Biomedical Engineering; 6/2014- present.

RESEARCH ADVISING: FORMER STUDENTS:

- 1) **Ranjini Murthy:** Ph.D.; Materials Science and Engineering (05/2009) – Business Development Manager, Wacker Chemical Corporation
- 2) **Cody A. Schoener:** M.S.; Biomedical Engineering (08/2009) – Received Ph.D. in Chemical Engineering at University of Texas – Austin (Prof. Peppas). Currently at Dow Chemical.
- 3) **Yaping Hou:** Ph.D.; Materials Science and Engineering; (12/2009) – Post-doc with Prof. Min Lee,
- 4) UCLA, College of Dentistry
- 5) **Dawei Zhang:** Ph.D.; Materials Science and Engineering (05/2013) – Lecturer, University of Science & Technology (Beijing, China).
- 6) **Brennan Bailey:** Ph.D.; Materials Science and Engineering (08/2013) – Post-doctoral research associate at Ecole Polytechnique Federale de Lausanne (EPFL); Switzerland, (Prof. Veronique Michaud)
- 7) **Melissa Giese Hawkins:** Ph.D.; Biomedical Engineering (12/21013) – Post-doctoral research associate at Texas A&M University (Profs. Grunlan and Micheal Pishko).
- 8) **Ruochong Fei:** Ph.D.; Biomedical Engineering (12/2013) – Application Engineer, Hermes-Microvision.
- 1) **Jessica Reinhard:** undergraduate: Biomedical Engineering; 01/2014 – 12/2014
- 2) **Robert Hunt:** undergraduate: Biomedical Engineering; 08/2013-12/2013; 8/2014- 12/2014
- 3) **Olivia George:** undergraduate: Biomedical Engineering; 08/2012-5/2014
- 4) **Berkay Basagaoglu:** undergraduate: Biomedical Engineering; 06/2013-5/2014
- 5) **Hanna Glidewell:** B.S. Biomedical Engineering (5/2014); 01/2014 – 5/20104
- 6) **Matthew Hurlly:** B.S. Biomedical Engineering (5/2014); 01/2013-5/2014
- 7) **Samantha Schott:** undergraduate: Biomedical Engineering; 01/2013-5/2014

- 8) **Kristen Means:** undergraduate: Biomedical Engineering; 08/2011-5/2014
- 9) **Daniel Callahan:** undergraduate: Biomedical Engineering; 08/2013-12/2013
- 10) **Ryan Ng:** undergraduate: Chemical Engineering (UCSB); 07/2013-08/2013
- 11) **Dedeepya Puvvada:** undergraduate: Biomedical Engineering; 01/2013-05/2013
- 12) **Alex Quante:** undergraduate: Biomedical Engineering; 01/2013-05/2013
- 13) **Bagrat Grigoryan:** B.S. Biomedical Engineering (5/2013); 08/2012-05/2013
- 14) **John Gruetzner:** B.S. Biomedical Engineering (5/2013); 01/2012-05/2013
- 15) **Lindsay Nail:** B.S. Biomedical Engineering (5/2013); 08/2011-05/2013
- 16) **Keri Petersen:** B.S. Biomedical Engineering (5/2013); 08/2011-05/2013
- 17) **Jason George:** B.S. Biomedical Engineering (5/2012); 08/2009-5/2012
- 18) **Julie Strobe:** undergraduate: Biomedical Engineering (University of Missouri); 05/2011-08/2011
- 19) **Jeehyun Park:** B.S. Biomedical Engineering (5/2011); 05/2010-05/2011
- 20) **William Burkes:** B.S. Biomedical Engineering (5/2012); Biomedical Engineering; 8/2010-05/2011
- 21) **Vivian Hui:** B.S. Biomedical Engineering (5/2011); 08/2009-12/2010
- 22) **Rachel Unruh:** B.S. Biomedical Engineering (Baylor University) (5/2011); 06/2010-8/2010
- 23) **Stacy Prukop:** B.S. Biomedical Engineering (5/2010); 06/2009-05/2010
- 24) **Melissa Giese:** B.S. Biomedical Engineering (5/2010); 01/2009 – 05/2010
- 25) **Chris Weyand:** Biomedical Engineering (5/2010); 01/2009 – 12/2009
- 26) **Jonathan Burkes:** B.S. Biomedical Engineering (5/2010); 01/2008 – 05/2009
- 27) **Shin Duk Lee:** B.S. Biomedical Engineering (5/2009); 08/2008 – 5/2009
- 28) **Brennan Bailey:** B.S. Biomedical Engineering (5/2009); 01/2008 – 05/2009
- 29) **Tauseef Charanya:** B.S. Biomedical Engineering (5/2010); 08/2008 – 05/2009
- 30) **Christopher Perry:** B.S. Biomedical Engineering (5/2009); 01/2008 – 05/2008
- 31) **Cody Schoener:** B.S. Biomedical Engineering (5/2008); 01/2008 – 05/2008
- 32) **Ashley Smitherman:** B.S. Biomedical Engineering (12/2007); 01/2007 – 12/2007
- 33) **Courtney Shell:** B.S. Biomedical Engineering (5/2010); 05/2007-05/2008
- 34) **Casey Cox:** B.S. Biomedical Engineering (05/2007); 06/2006 – 12/2006
- 35) **Andrew Matthews:** B.S. Biomedical Engineering (5/2008); 05/2006-08/2006
- 36) **Katherine Regan:** B.S. Chemistry (05/2007); 01/2006-12/2006

SELECTED SIGNIFICANT SERVICE ACTIVITIES:

Service to Profession (National-level)

Elected “Secretary” American Chemical Society (ACS) Polymeric Materials Science and Engineering Division (2014 - present)

Elected “Member-at-Large” American Chemical Society (ACS) Polymeric Materials Science and Engineering Division (2013 - 2014)

Discussion Leader – 2013 Polymers Gordon Research Conference (June 9-14, 2013; Mount Holyoke College, South Hadley, MA)

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]).

Review panel member for NSF panels and NIH panels.

Co-organizer of a Polymeric Materials: Science and Engineering (PMSE) Division Program symposium “Polymeric Biomaterials” American Chemical Society (ACS) National Meeting, Philadelphia, PA, United States, August 19-23, 2012.

Co-organizer of a Polymer Chemistry (POLY) Division Program symposium “Bioactive Polymer and Polymer Surfaces” American Chemical Society (ACS) National Meeting, Boston, MA, United States, August 22-26, 2010.

Service to Profession (State/local-level)

Co-organizer of “Biomaterials Day at Texas A&M University”, College Station, TX, United States, February 22, 2010 and May 16, 2011.

Co-organizer of “Biomaterials Day at Rice University”, Houston, TX, United States, July 27, 2012.

Co-organizer of “Biomaterials Day at University of Texas - Austin”, Austin, TX, United States, May 31, 2013.

Co-organizer of “Biomaterials Day at Texas A&M University”, College Station, TX, United States, June 9, 2014.

Mentoring Activities

Faculty advisor to a total of 42 undergraduate students:

- **Beckman Scholars Program (1):** Mikayla Barry.
- **TAMU USRG Program (9):** Rebecca Sehnert, Lindsay Nail, Julie Strope, Rachel Unruh, Stacy Prukop, Brennan Bailey, Jonathan Burkes, Courtney Shell and Andrew Matthews.
- **TAMU LSAMP Program (5):** Lindsay Nail, Keri Petersen, Melissa (Giese) Hawkins, Brennan Bailey, Ashley Smitherman.
- **TAMU ROE Program (3):** Lindsay Nail, John Gruetzner, Olivia George
- **TAMU Aggies Scholars Program (3):** Erica Gacasan, Rebecca Sehnert, Berkay Basagaoglu
- **TAMU Undergraduate Research Fellows Program (1):** Jason George
- **TAMU Undergraduate Research Scholars Program (2):** Erica Gacasan, Olivia George

AWARDS AND HONORS:

Texas A&M Engineering Experiment Station (TEES) Faculty Fellow - Texas A&M University, College of Engineering; December 2013)

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

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

Association of Former Students Distinguished Award in Teaching (Texas A&M University, College of Engineering; 2009-2010)

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

Moulton Summer Graduate Fellowship (University of Southern California; 2002 & 2003)

Women in Science and Engineering (WiSE) Travel Grant (University of Southern California; 2002)

Quarterly Technical Achievement Award (H.B. Fuller Company; May 2001)

NASA Fellowship, ND Space Grant (North Dakota State University; 1994)

Research Experience for Undergraduates (REU) Award (North Dakota State University; 1993)

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]