

## Patrick T. Mather, Ph.D.

Syracuse Biomaterials Institute and  
Department of Biomedical and Chemical Engineering  
318 Bowne Hall  
Syracuse University  
Syracuse, NY 13244-1240

315-443-8760 (tel)  
315-443-9175 (fax)  
[ptmather@syr.edu](mailto:ptmather@syr.edu)  
<http://mather.syr.edu/>

### **Professional Experience**

- Syracuse University** 8/07 – present  
*Milton and Ann Stevenson Professor, tenured, Biomedical and Chemical Engineering*  
*Director, Syracuse Biomaterials Institute* <http://biomaterials.syr.edu/>
- Case Western Reserve University** 8/04 – 8/07  
*Associate Professor with tenure, Macromolecular Science and Engineering*
- University of Connecticut** Assistant Prof. 7/99 – 7/03; Associate Prof. with tenure 8/03 – 8/04  
*Associate Professor, Chemical Engineering, Polymer Program, Inst. Mater. Science, and Mater. and Metallurgy Engineering*
- Air Force Research Laboratory**
- Leader, Polymer Processing Group - Materials Directorate, Polymer Branch.* 4/97-7/99
- Materials Research Engineer - Propulsion Sciences Division.* 4/94-3/97

### **Education**

- University of California at Santa Barbara** June, 1994  
PhD, Materials, “Shear Flow Behavior of Tumbling and Flow Aligning Nematic Liquid Crystals”  
*Advisor: Prof. Dale S. Pearson (deceased)*
- The Pennsylvania State University** 1990  
MS, Eng. Mechanics “Ultrasonic Rheology: Theory and Application to Curing Epoxy” *Advisor: H.T. Hahn*
- The Pennsylvania State University** 1989  
B.S., Engineering Science, *High Distinction and Honors (Magna Cum Laude)*

### **Research Interests**

- Synthesis, processing, and characterization of medically relevant polymers, including biodegradable polymers, drug delivery polymers, and bone tissue engineering scaffolds.
- Nanocomposites: Structure Property Relationships in Inorganic-Organic Hybrid Thermoplastics.
- New Functional Polymers, Mechanisms, and Devices based on Shape-Memory Effect, including polymer actuators, liquid crystalline elastomers, amorphous and crystalline networks with tailored phase behavior.
- Liquid Crystalline Materials for Structural and Optical Applications (thermotropic LCPs, nematic, smectic, and cholesteric LCs and LCEs).
- Synthesis, processing, and characterization of polymers for proton exchange membrane (PEM) fuel cells, especially involving nanocapillary networks of sulfonated polymers.
- High-performance thermosets: New materials, cure studies, and processing development.

## **Leadership Experience**

- *Director of Syracuse Biomaterials Institute.* Led the establishment in 2007 of a highly interdisciplinary research institute, including construction of state-of-art research facilities and sustainable funding through coordination with the Provost, two Deans, and Vice President of Research. Led the creation of the SBI image and marketing campaign, including state-of-art website biomaterials.syr.edu. Led and coordinated external funding efforts resulting in establishment of NSF IGERT and REU programs. Oversaw recruitment of tenure track faculty members in Biomedical and Chemical Engineering (3); Physics (2), Chemistry (1), and Biology (2) directly aligned with the SBI research mission. Established and executes the Stevenson Biomaterials Lectureship, bringing thought leaders in the biomaterials field to Syracuse University. Run regular faculty meetings (20+) 2 times per semester with a management style of “working” meetings that involve faculty and staff engagement, not just information exchange.
- *Society of Rheology Conference.* Organized and ran the Annual Meeting of the Society of Rheology in 2011. Held in 2011, this meeting involved 500 scientists and engineers in the field of rheology, convening in Cleveland, OH. As the person in charge of all local arrangements for this conference, organized four (4) highly successful social events at venues (including one at Progressive Field) throughout Cleveland, negotiating budgets for all and executing all events directly with the local venues. Further, I was the treasurer for the entire event, working closely with the Society of Rheology Treasurer and successfully balancing the budget for our non-profit meeting, breaking even.
- *Academic Committee Leadership and Engagement.* I have successfully led numerous academic committees, including the department-level graduate program committee in Macromolecular Science at Case Western, and the college-level Academic Affairs committee for Engineering and Computer Science at Syracuse University (others are listed later in this CV). Currently active in the Engineering and Computer Science Faculty Council, I will be the Faculty Chair for Academic Year, 2014-15. In addition to formal committee activity, I have worked closely with the University-level Development and Advancement teams to speak with Board of Trustees, meet with prospective donors, and attend regional fund-raising events.

## **Professional Affiliations**

International Advisory Board, 12<sup>th</sup> International Conference on Polymers for Advanced Technologies, Berlin,  
GERMANY (2013)

Editor-in-Chief, *Polymer Reviews* (2013-present; 2008-2013 as Associate Editor)

Associate Editor, *Polymer Bulletin* (2010-2013)

Editorial Advisory Board, *Polymer Reviews* (2004-2008)

Editorial Board, *Experimental Biology and Medicine* (Biomedical Engineering Category) (2009-present)

Editorial Advisory Board, *Polymer Engineering and Science* (1998-present)

Society of Rheology (1991-present)

Local Arrangements Chair, Annual Meeting 2011 in Cleveland

Handled entire program for 500 participants, including conference center for six parallel sessions for four days; social outings at four venues.

Chair, Membership Committee (2003 – 2008)

Membership Committee (2000 – 2008)

Session Chair, 2001, Polymers with Complex Architectures

*Technical Chair, 1998 Fall Meeting (Program Chair of Entire Meeting with Prof. Colby)*

Session Chair, 1998 Annual Meeting: Polymers with Novel Architectures

Session Chair, 1997 Annual Meeting: Rheology of Composites and LCPs

Materials Research Society (1994-present)

Symposium Organizer, 2004 Fall Meeting, Mechanically Active Materials

Symposium Organizer, 2001 Fall Meeting, Advances in Liquid Crystalline Materials and Technologies

Session Chair, 2000 Fall Meeting, Nanocomposites symposium.

Tissue Engineering Session Chair, 2008 International Materials Research Conference, Chongqing China, June, 2008.

American Chemical Society (2000-present)

Symposium Chair, 2006 Spring Meeting (Atlanta), Complex Fluids in Confined Spaces

Symposium Chair, 2003 Spring Meeting (New Orleans), Hybrid Materials

Session Chair, 2002 Fall Meeting (Boston), General Papers – Polymer Characterization.

Symposium Organizer, 2001 Fall Meeting (Chicago), POSS-Based Materials

American Physical Society (1992-present)

Session Chair, 1999 March Meeting: Liquid Crystals

Session Chair, 2002 March Meeting: Polymer Solutions and Gels

Session Chair, 2004 March Meeting: Polymer Dynamics

DPOLY Publicity Committee, 2004-present

Society of Plastics Engineers (1998-present; Senior Member)

*Councilor representing Polymer Analysis Division, May 2007-present*

*Student Chapter Advisor, Case Western Reserve University, Spring 2007-Summer 2008*

*Co-Technical Program Chair (TPC) for PAD Division Annual Meeting, 2006.*

Chair, *Polymer Analysis Division* Board of Directors (2002-2003);

Member, *Polymer Analysis Division* Board of Directors (2000-present);

Member, *International Research Award Selection Committee* (2001-present);

*Technical Program Chair (TPC) for PAD Division Annual Meeting, 2002.*

American Institute of Chemical Engineers (2001-present)

Advisor, University of Connecticut Student Chapter (2001-2004).

American Institute for Medical and Biological Engineering (2008-present)

Member, College of Fellows

Society for Experimental Biology and Medicine (2009-present)

Member, NMAB/NAS panel on Future of Polymers for the Air Force (1999).

Frequent reviewer for: *Macromolecules, Nature Materials, Nature, J. Polym. Sci. B: Polym. Phys., J. Appl. Polym. Sci., Polymer Engineering and Science, Rheol. Acta, J. Rheol., Liquid Crystals, Mol. Cryst. Liq. Cryst., Langmuir, Materials Research Society Proceedings, Polymer, Petroleum Research Fund, Air Force Office of Scientific Research, NSF MRI Panel Review, NSF CBET Panel Review (2009-present); NSF MWN Panel Review (2010).*

## **Honors and Awards**

Excellence in Graduate Education Faculty Recognition Award, Syracuse University 2013

Participant/Speaker NAE Indo-American Frontiers of Engineering (IAFOE) Symposium 2010

Fellow, Society of Plastics Engineers	2009
Fellow, American Institute for Medical and Biological Engineering	2008
Finalist for Wittke Award for Undergraduate Teaching, Case Western Reserve University,	2007
Undergraduate Student Government Teaching Excellence Award, Case Western Reserve University	2006
Rogers Corporation Award for Outstanding Teacher in Chemical Engineering	2003
SPE Medical Plastics Division, ANTEC 2002 Best Paper Award	2002
Member of AFOSR Star Team, "Lightweight Low-Cost Membrane Structures"	2002
School of Engineering Outstanding Junior Faculty Award, University of Connecticut	2001
NSF CAREER Award, "Orientational Dynamics in Flows of Thermotropic Polymers"	2001-2006
AFRL-Sponsored Assessment Team, "Applicability of Organic Matrix Composites to Cryogenic Rocket Propulsion applications,"	Spring 2001
Who's Who in Plastics and Polymers	1999
SPE Engineering Properties and Structure Division, <i>Best Paper</i> , 55 <sup>th</sup> ANTEC	1997
Member of AFOSR Star Team, "Inorganic Synthesis"	1997
USAF Palace Knight Fellowship	1992-1994
National Defense Science and Engineering Graduate Fellowship (A.R.O.)	1989-1992
University Scholars - Penn State Honors Curriculum	1986-1989
Tau Beta Pi (Case Faculty Advisor, 2006-present)	1988-present
Best Summer Research, Rohm and Haas Company	1988
Golden Key National Honor Society	1989-present
George Gleeson Scholarship for Undergraduate Research	1989-1990

## **Start-Up Companies**

Co-Founder and Scientific Consultant, **New Ortho Polymers**

*Launched in 2005 by UConn R&D Corporation ([www.uconnrd.com](http://www.uconnrd.com)), New Ortho Polymers is based on a patented shape memory polymer (SMP) technology developed by Dr. Pat Mather at UConn's Institute of Materials Science in Storrs. In cooperation with Dr. Charles Burstone at the UConn School of Dental Medicine, the Company is creating orthodontic appliances that incorporate and utilize shape memory properties for tooth movement. The Company received an STTR grant from the National Institutes of Health, and continues to look for seed capital.*

## **Consulting Activities**

Cornerstone Research Group 1999 – 2002	Jackson and Tull, Inc. 1999- 2001
Gerber Scientific 1999	Loctite Corporation 2000-2002
ERC, Inc. (AFRL/PRSM) 1999 – 2003	Chevron-Phillips 2004- 2006
Foster-Miller Corp. 2003 – 2005	Procter and Gamble 2009
AFRL: Part of a seven-member team evaluating the applicability of polymer composites to cryogenic rocket propulsion components. 2000	Henkel-Loctite Corporation 2009
	Boston Scientific Corporation 2010 – present
Covidien 2010 – present	Baxter Healthcare 2010 – present

Expert Witness in Polymers/Plastics 2010-present      Merial, a Sanofi Company, 2012 – present

**Personal**      Address:            1235 Westmoreland Ave.  
   Syracuse, NY 13210  
   Family:            Father of two sons Jason (22) and Ryan (20).  
   Citizenship:      U.S. Citizen

## **Publications (Peer-Reviewed)**

**Citations = 7300; h-index = 45; i-10 index = 108 ([Google Scholar Citation Profile](#))**

134. H. Birjandi Nejad, R.M. Baker, P.T. Mather, “Preparation and Characterization of Triple Shape Memory Composite Foams,” submitted *Soft Matter* (2014).

133. K.A. Burke, I.A. Rousseau, and P.T. Mather, “Reversible actuation in main-chain liquid crystalline elastomers with varying crosslink densities,” appeared, *Polymer* (2014). <http://dx.doi.org/10.1016/j.polymer.2014.06.088>

132. Ifeanyi U. Onyejekwe and P.T. Mather, “Controlled and Sustained Nitric Oxide Release from a Shape Memory Elastomeric Composite,” in revision (2014).

131. Amir H. Torbati, Hossein Birjandi Nejad, Mileysa Ponce, James P. Sutton and Patrick T. Mather, “Triple Shape Memory Composites Prepared via Polymerization-Induced Phase Separation,” *Soft Matter* **10** (17), 3112 - 3121 (2014). DOI: 10.1039/C3SM52599F

130. Qi Ge, Xiaofan Luo, Christian B. Iversen, Hossein Birjandi Nejad, Patrick T. Mather, Martin L. Dunn, and H. Jerry Qi, “A Finite Deformation Thermomechanical Constitutive Model for Triple Shape Polymeric Composites Based on Dual Thermal Transitions,” *International Journal of Solid and Structures* **51** 2777-2790 (2014). <http://dx.doi.org/10.1016/j.ijsolstr.2014.03.029>

129. A.H. Torbati, R.T. Mather, J.E. Reeder, and P.T. Mather,\* “Fabrication of a Light-Emitting Shape Memory Polymeric Web Containing Indocyanine Green (ICG),” *J. Biomed. Mater. Res. B: Appl. Biomaterials* **102** 1236-1243 (2014). DOI: 10.1002/jbm.b.33107

128. R.M. Baker, James H. Henderson, and P.T. Mather, “Shape memory poly( $\epsilon$ -caprolactone)-co-poly(ethylene glycol) foams with body temperature triggering and two-way actuation,” *J. Mater. Chem. B: Mater. Biol. Med.* 4916 - 4920 (2013). DOI:10.1039/C3TB20810A

127. E. Huitron-Rattinger, K. Ishida, A. Romo-Uribe, and P.T. Mather, “Thermally Modulated Nanostructure of Poly( $\epsilon$ -caprolactone)–POSS Multiblock Thermoplastic Polyurethanes,” *Polymer* **54** 3350-3362 (2013). DOI: 10.1016/j.polymer.2013.04.015

126. Q. Ge, K.K. Westbrook, P.T. Mather, M.L. Dunn, H. Qi, “Thermomechanical Behavior of a Two-Way Shape Memory Composite Actuator,” *Smart Materials and Structures* **22** (5) 055009 (2013).

125. P. Yang, R.M. Baker, J.H. Henderson, and P.T. Mather, “In vitro wrinkle formation via shape memory dynamically aligns adherent cells,” *Soft Matter* **9** (18) 4705-4714 (2013). DOI: 10.1039/c3sm00024a

124. E.D. Rodriguez, D.C. Weed, and P.T. Mather, “Anisotropic Shape Memory Elastomeric Composites: Fabrication and Testing,” *Macromolecular Chemistry and Physics* **214**, n11, 12477-1257 (2013).

123. X. Luo and P.T. Mather, “A Shape Memory Assisted Self-Healing Coating,” *ACS Macro Letters* **2**, 152-156 (2013). DOI: 10.1021/mz400017x

- 122.** X. Gu and P.T. Mather, “Water-triggered shape memory of multiblock thermoplastic polyurethanes (TPUs),” *RSC Advances* **v3** n36 15783 - 15791 (2013). DOI: 10.1039/C3RA41337C
- 121.** Ling-Fang Tseng, Patrick T. Mather, James H. Henderson,\* “Shape-memory actuated changes in scaffold fiber alignment direct stem cell morphology,” *Acta Biomaterialia* **9**, 8790-8801 (2013). DOI: 10.1016/j.actbio.2013.06.043.
- 120.** K.A. Burke and P.T. Mather, “Evolution of Microstructure during Shape Memory Cycling of a Main-Chain Liquid Crystalline Elastomer,” *Polymer* **54**, n11, 2808-2820 (2013). DOI: 10.1016/j.polymer.2013.03.049
- 119.** Q. Ge, X. Luo, C.B. Iversen, P.T. Mather, Martin Dunn, H. Jerry Qi, “Mechanisms of Triple-Shape Polymeric Composites Featuring Dual Thermal Transitions,” *Soft Matter* **9** 2212-2223 (2013). DOI: 10.1039/c2sm27063c
- 118.** X. Luo and P.T. Mather, “Design Strategies of Shape Memory Polymers,” *Current Opinion in Chemical Engineering* **2**(1) 103-111 (2013).
- 117.** X. Gu and P.T. Mather, “Entanglement-Based Shape Memory Polyurethanes: Synthesis and Characterization,” *Polymer* **53** 5924-5934 (2012).
- 116.** K.A. Burke, H. Qin, and P.T. Mather, “Crosslinkable Liquid Crystalline Copolymers with Variable Isotropization Temperature,” *J. Mater. Chem.* **22** (29), 14518-14530 (2012). DOI:10.1039/C2JM32938G
- 115.** K.K. Westbrook, P.T. Mather, V. Parakh, M.L. Dunn, Q. Ge, B.M. Lee, and H. Jerry Qi, “Two-way reversible shape memory effects in a free-standing polymer composite,” *Smart Mater. Struct.* **20** (2011) 065010 (9 pp).
- 114.** Q. Ge, X. Luo, E.D. Rodriguez, X. Zhang, P.T. Mather, M.L. Dunn, and H. Qi, “Thermomechanical Behavior of Shape Memory Elastomeric Composites,” *J. Mech. Phys. Solids*, **60**, 67-83 (2012).
- 113.** McKenzie, BM; Wojtecki, RJ; Burke, KA; Zhang, CY; Jakli, A; Mather, PT; Rowan, SJ, “Metallo-Responsive Liquid Crystalline Monomers and Polymers,” *Chemistry of Materials*, **23** (15) 3525-3533 (2011).
- 112.** Xiuling Xu, Kevin A. Davis, Pine Yang, Xinzhu Gu, James H. Henderson, Patrick T. Mather, “Shape Memory RGD-containing Hydrogels: Synthesis, Characterization, and Application in Cell Culture,” *Macromol. Symp.* **309/310**, 162–172 (2011).
- 111.** K. Ishida, R.A. Hortensius, X. Luo, and P.T. Mather, “Soft Bacterial Polyester-Based Shape Memory Nanocomposites Featuring Reconfigurable Nanostructure,” *J. Polym. Sci. B: Polym. Phys.* **50** 387-393 (2012). DOI: 10.1002/polb.23021.
- 110.** Bonifacio Alvarado-Tenorio, Angel Romo-Urbe, and Patrick T. Mather, “Microstructure and Phase Behavior of POSS/PCL Shape Memory Nanocomposites,” *Macromolecules* **44**, 5682-5692 (2011).
- 109.** X. Gu, J. Wu, and P.T. Mather, “Polyhedral Oligomeric Silsesquioxane (POSS) Suppresses Enzymatic Degradation of PEG-PCL Based Multiblock Polyurethanes by Surface Passivation Mechanism,” *Biomacromolecules* **12**(8), 3066-3077 (2011).
- 108.** Erika D. Rodriguez, X. Luo, and P.T. Mather, “Linear and Crosslinked Poly ( $\epsilon$ -Caprolactone) Polymers for Shape Memory Assisted Self-Healing (SMASH),” *ACS Applied Materials and Interfaces* **3** 152-161 (2011).
- 107.** K.A. Davis, K.A. Burke, P.T. Mather, J.H. Henderson, “Dynamic cell behavior on shape memory polymer substrates,” *Biomaterials* **32** (9) 2285-2293 (2011). DOI: 10.1016/j.biomaterials.2010.12.006
- 106.** J. Choi, R. Wycisk, W. Zhang, P.N. Pintauro, K.M. Lee, and P.T. Mather, “High conductivity perfluorosulfonic acid nanofiber composite fuel-cell membranes,” *ChemSusChem* **3** (11) 1245-1248 (2010).

105. J. Wu, Q. Ge, and P.T. Mather, "PEG-POSS Multiblock Polyurethanes: Synthesis, Characterization and Hydrogel Behavior," *Macromolecules* **43** 7637–7649 (2010). DOI: 10.1021/ma101336c

104. A.M. DiOrto, X. Luo, K.-M. Lee, and P.T. Mather, "A Functionally Graded Shape Memory Polymer," *Soft Matter* **7** 68-74 (2011). (Cover)



103. J. Choi, K.-M. Lee, R. Wycisk, P.N. Pintauro, P.T. Mather, "Sulfonated Polysulfone/POSS Nanofiber Composite Membranes for PEM Fuel Cells," *J. Electrochem. Soc.* **157** n6 B914-B919 (2010).

102. Q. Guo, P.T. Knight, J. Wu, and P.T. Mather, "Blends of Paclitaxel with POSS-Based Biodegradable Polyurethanes Blends: Morphology, Miscibility and Specific Interactions," *Macromolecules* **42** 4991-4999 (2010).

101. Jonghyun Choi, Kyung Min Lee, Ryszard Wycisk, Peter Pintauro, and Patrick T. Mather, "Nanofiber Composite Membranes with Low Equivalent Weight Perfluorosulfonic Acid Polymers," *J. Mater. Chem.* **20** 6282-6290 (2010).

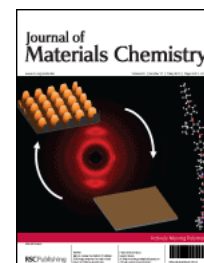
100. Kristofer K. Westbrook, Vikas Parakh, Taekwoong Chung, Patrick T. Mather, Logan C. Wan, Martin L. Dunn, H. Jerry Qi, "Constitutive Modeling of Shape Memory Effects in Semicrystalline Polymers with Stretch Induced Crystallization," *J. Engineering Materials and Technology* **132** 041010, 1-9 (2010).

99. X. Luo and P.T. Mather, "Triple-Shape Polymeric Composites (TSPCs)," *Advanced Functional Materials* **20**, n16 2649-2656 (2010).

98. X. Luo, P.T. Mather, "Conductive Shape Memory Nanocomposites for High Speed Electrical Actuation," *Soft Matter* **6**, n10 2146-2149 (2010). DOI: 10.1039/c001295e

97. X. Luo, K.E. Lauber, P.T. Mather, "A Thermally Responsive, Rigid, and Reversible Adhesive," *Polymer* **51** n5 1169-1175 (2010).

96. K.A. Burke and P.T. Mather, "Soft Shape Memory in Main-Chain Liquid Crystalline Elastomers," *J. Mater. Chem.*, special issue on Actively Moving Polymers, **20**, 3449-3457 (2010). Cover Graphic. DOI: 10.1039/B924050K



95. P.T. Knight, J.T. Kirk, J.M. Anderson, P.T. Mather, "In vivo kinetic degradation analysis and biocompatibility of aliphatic polyester polyurethanes," *J. Biomed. Mater. Res. A* **94A**, n2 333-343 (2010). Note: Best PhD student award, Soc. for Biomaterials, 2010.

94. X. Luo and Patrick T. Mather, "Preparation and Characterization of Shape Memory Elastomeric Composites," *Macromolecules* **42**(19), 7251-7253 (2009).

93. Jian Wu, Shuyu Hou, Dacheng Ren, and Patrick T. Mather, "Antimicrobial Properties of Nanostructured Hydrogel Webs Containing Silver," *Biomacromolecules* **10**, 2686-2693 (2009).

92. P.T. Knight, K. Lee, T. Chung, P.T. Mather, "PLGA-POSS End-Linked Networks with Tailored Degradation and Shape Memory Behavior," *Macromolecules* **42** 6596-6605 (2009).

91. P.T. Mather, X. Luo, and I.A. Rousseau, "Shape Memory Polymer Research," *Annu. Rev. Mater. Res.* **39** 445-471 (2009).

90. Xiaofan Luo, Runqing Ou, Daniel E. Eberly, Amit Singhal, Wantinee Viratyaporn and Patrick T. Mather, "A Thermoplastic/Thermoset Blend Exhibiting Thermal Mending and Reversible Adhesion," *ACS Applied Materials and Interfaces* **1** (3) 612-620 (2009).

89. P.A. Patel, J. Eckart, M.C. Advincula, A.J. Goldberg, and P.T. Mather, "Rapid Synthesis of Polymer-Silica Hybrid Nanofibers by Biomimetic Mineralization," *Polymer* **50** 1214-1222 (2009).

88. J. Wu, T.S. Haddad, and P.T. Mather, "The Role of Vertex Group in Rheological Behavior of Entangled Polystyrene-Polyhedral Oligosilsesquioxane (POSS) Copolymers," *Macromolecules* **42**(4) 1142-1152 (2009).
87. Q. Guo, P.T. Knight, and P.T. Mather, "Tailored Drug Release from Biodegradable Stent Coatings Based on Hybrid Polyurethanes," *J. Controlled Release* **137** 224-233 (2009).
86. J. Wu and P.T. Mather, "POSS Polymers: Physical Properties and Biomaterials Applications," *Polymer Reviews* **49**: 25-63 (2009).
85. H. Qin and P.T. Mather, "Combined One-Way and Two-Way Shape Memory in a Glass-Forming Nematic Network," *Macromolecules* **41** 273-280 (2009).
84. A.J. Goldberg, M.C. Advincula, T. Komabayashi, P. A. Patel, P.T. Mather, D.G. Goberman and R. B. Kazemi, "Polypeptide Catalyzed Biosilicification of Dentin Surfaces," *J. Dental Res.* **88** (4) 366-381 (2009).
83. B.M. McKenzie, A.K. Miller, R.J. Wojtecki, J.C. Johnson, K.A. Burke, K.A. Tzeng, P.T. Mather, S.J. Rowan, "Improved synthesis of functionalized mesogenic 2,6-bisbenzimidazolylpyridine ligands," *Tetrahedron* **64** 8488-8495 (2008).
82. Jonghyun Choi, Kyung Min Lee, Ryszard Wycisk, Peter N. Pintauro, and Patrick Mather, "Nanofiber Network Ion-Exchange Membranes," *Macromolecules* **41** 4569-4572 (2008).
81. P.T. Knight, K. Lee, H. Qin, and P.T. Mather, "Biodegradable Thermoplastic Polyurethanes Incorporating Polyhedral Oligosilsesquioxane (POSS)," *Biomacromolecules* **9** 2458-2467 (2008).
80. K. Lee, P.T. Knight, T. Chung, and P.T. Mather, "Polycaprolactone-POSS Chemical/Physical Double Networks," *Macromolecules* **41** 4730-4738 (2008).
79. J. Kunzleman, T. Chung, P.T. Mather, and C. Weder, "Shape Memory Polymers with Built-In Threshold Temperature Sensors," *J. Mater. Chem.* **18**, 1082-1086 (2008). DOI: 10.1039/B718445J
78. Yatil P. Patil, Antonio Senador, Patrick T. Mather, Montgomery T. Shaw, "Rheological Characterization of Asphalt in a Temperature Gradient Combinatorial Squeeze-Flow Setup," *Rheol. Acta.* **46** 1075-1082 (2007).
77. Taekwoong Chung, Angel Romo-Urbe, and Patrick T. Mather, "Two-Way Reversible Shape Memory in a Semicrystalline Network," *Macromolecules* **41** (1) 184-192 (2008).
76. Patrick T. Mather and Stuart J. Rowan, "Supramolecular Interactions in the Formation of Thermotropic Liquid Crystalline Polymers," invited review chapter in *Structure and Bonding* (Series Editor D.M.P. Mingos) **v128**: Liquid Crystalline Functional Assemblies and Their Supramolecular Structures (Vol. Editor T. Kato) 119-149 (2008).
75. Pritesh A. Patel, Andrey V. Dobrynin, and Patrick T. Mather, "Combined Effect of Spin Speed and Ionic Strength on Polyelectrolyte Spin Assembly," *Langmuir* **23**, n25, 12589-12597 (2007).
74. Miao, Jianjun; Cui, Li; Lau, Henry P.; Mather, Patrick T.; Zhu, Lei. Self-Assembly and Chain-Folding in Hybrid Coil-Coil-Cube Triblock Oligomers of Polyethylene-b-Poly(ethylene oxide)-b-Polyhedral Oligomeric Silsesquioxane. *Macromolecules*, **40**(15), 5460-5470 (2007).
73. Maria C. Advincula, Pritesh Patel, PTM, Tyler Mattson, and A. Jon Goldberg, "Polypeptide- derived silica for biomedical applications," *J. Biomedical Materials Research B: Applied Biomaterials* **88B**: 321-331 (2009).
72. P.T. Mather, "Responsive Materials: Soft answers for hard problems," *Nature Materials*, **6**(2), 93-94 (2007).



71. B.R. Crenshaw, M. Burnworth, D. Khariwala, P.A. Hiltner, P.T. Mather, R. Simha, and C. Weder, "Deformation-Induced Color Changes in Mechanochromic Polyethylene Blends," *Macromolecules* **40**(7), 2400-2408 (2007).
70. C. Liu, H. Qin, and P.T. Mather, "Review of Progress in Shape Memory Polymers," *invited feature article* *J. Mater. Chem.* **14**, 1543-1558 (2007). DOI: 10.1039/b615954k.
69. J. Wu, T.S. Haddad, G.-M. Kim, P.T. Mather, "Rheological Behavior of Entangled Polystyrene-Polyhedral Oligosilsesquioxane (POSS) Copolymers," *Macromolecules* **40**(3) 544-554 (2007).
68. Young-Wook Chang, Erdong Wang, G. Shin, J.E. Han, and Patrick T. Mather, "Poly(vinyl alcohol) (PVA) / sulfonated polyhedral oligosilsesquioxane (sPOSS) hybrid membranes for direct methanol fuel cell applications," *Polymers for Advanced Technologies* **18** (7) 535-543 (2007).
67. W. Lee, S. Ni, J. Deng, B.-S. Kim, S. K. Satija, P.T. Mather, A.R. Esker, "Isotherm Studies of Telechelic Poly(ethylene oxide) Amphiphiles Endcapped with Polyhedral Oligomeric Silsesquioxane (POSS) at the Air/Water Interface," *Macromolecules* **40**(3) 682-688(2006).
66. Pritesh A. Patel, Junhwan Jeon, Patrick T. Mather, and Andrey V. Dobrynin, "Molecular Dynamics Simulations of Multilayer Polyelectrolyte Films: Effect of Electrostatic and Short-Range Interactions," *Langmuir* **22** 9994-10002 (2006).
65. B.-S. Kim and PTM, "Morphology, Microstructure, and Rheology of Amphiphilic Telechelics Incorporating Polyhedral Oligosilsesquioxane," *Macromolecules* **39**, 9253-9260 (2006).
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## **Patents, Patent Applications, and Invention Disclosures**

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42. James H. Henderson, Patrick T. Mather, and Richard M. Baker, "Shape-Memory-Assisted Cell Seeding (SMACS)," Disclosed to Syracuse University, March 3, 2014.
41. P.T. Mather Jaimee M. Robertson, Amir H. Torbati, "Water Origami," Disclosed to Syracuse University, December 12, 2013. Provisional Patent filed March 13, 2014.
40. J.H. Henderson and P.T. Mather, "Shape-Memory-Actuated Materials for Accelerated Healing of Orthopedic Injuries," Disclosed to Syracuse University, May 28, 2013; Provisional Patent Application filed June 20, 2013.
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37. P.T. Mather, A.H. Torbati, and R.T. Mather, "Optically and Mechanically Active Nanoscale Media," Disclosed to Syracuse University Nov. 12, 2012; Provisional Patent application filed, April 9, 2013.
36. P.T. Mather, "Reversible Shape Memory Polymers Exhibiting Ambient Actuation Triggering," Disclosed to Syracuse University Nov. 1, 2012. Provisional Patent Application Filed.
35. P.T. Mather and Xinzhu Gu, "Water-triggered shape memory," Disclosed to Syracuse University on Sept. 11, 2012. Provisional Patent Application Filed.
34. P.T. Mather and Xinzhu Gu, "Amphiphilic Graft Copolymer for Waterborne Shape Memory Coatings," Disclosed to Syracuse University on Sept 11, 2012. Provisional Patent Application Filed.

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32. P.T. Mather, P.T. Knight (Wilson), and K. Ishida, "Waterborne Shape Memory Polymer Coatings," Disclosed to Syracuse University on 4/12/2011.
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30. P.T. Mather, Xiaofan Luo, Andrew DiOrio, and Pine Yang, "Functionally Graded Shape Memory Polymer," Disclosed to Syracuse University on 1/17/2011. Provisional Patent Application (61/444,298) filed, 1/24/2011, Utility Patent Application (13/401,606) filed 2/21/2012.
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27. P.T. Mather and Xiaofan Luo, "Stimuli-Responsive Product Having Multi-Shape Properties," Disclosed January 15, 2010. Syracuse University. (Triple Shape Polymeric Composites). In office action currently.
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17. G.A. Sotzing and P.T. Mather, "Conjugated Polymer Fiber: Preparation and its Use," US Patent Application **WO 2006084088 A1** (2006).
16. P.T. Mather, Charles Burstone, and C. Liu, "Shape Memory Polymers for Orthodontic Appliances," disclosed Sept. 23, 2004, University of Connecticut
15. A.J. Goldberg, R. Weiss, P.T. Mather and P. Rojanapityakorn, "Adhesion of methacrylates to reinforced thermoplastics for dental restorations," Invention disclosed August 26, 2004. University of Connecticut
14. Ron Sahatjian, Francisca Tan, P.T. Mather, and Changdeng Liu, "Stent", Boston Scientific
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10. J. Goldberg, P.T. Mather, R.A. Weiss, P. Rojanapityakorn, Ajit Karmaker, Arun Prasad, "Prefabricated Components for Dental Appliances," Nonprovisional Patent Application, Filed Dec. 22, 2003. University of Connecticut

9. P.T. Mather, "Mechanically Activated Shape Memory Devices," **US Patent 7,151,157 B2** Assigned to University of Connecticut, Issued Dec. 19, 2006.
8. R. Sahatjian, P.T. Mather, and Changdeng Liu, "Implantable Medical Devices," Utility Patent Applied For, October 10, 2003. Boston Scientific
7. P.T. Mather, Qing Ge, and Changdeng Liu, "Shape memory polymers based on semicrystalline thermoplastic polyurethanes bearing nanostructured hard segments," **US Patent 7,091,297 B2**, Issued August 15, 2006.
6. P.T. Mather and Changdeng Liu, "Blends of Polymeric Materials for Shape Memory and Applications Thereof," provisional patent applied for January 9, 2003. Conversion October 10, 2003. University of Connecticut, **US Patent 7,371,799 B2**. Issued May 2007.
5. P.T. Mather, Changdeng Liu, Seung B. Chun, and E. Bryan Coughlin, "Crosslinked Polycyclooctene," Assigned to University of Connecticut, **US Patent 7,173,096 B2**, Issued February 6, 2007.
4. P.T. Mather, Byoung-Suhk Kim, Qing Ge, Changdeng Liu "Nonionic telechelic polymers incorporating polyhedral oligosilsesquioxane (POSS) and uses thereof," **US Patent 7,067,606 B2**, Issued June 27, 2006.
3. P.T. Mather and Changdeng Liu, "Optically transparent and castable shape memory polymers," provisional patent file (88393.0073) May 2, 2002. University of Connecticut
2. P.T. Mather, Loon-Seng Tan, Devdatt Nagvekar, and Hong Jeon, "All-Aromatic Thermotropic Copolyesters with Accessible Transition Temperatures," March 12, 2002, **U.S. Patent 6,355,765**.
1. F.E. Arnold, T.D. Dang, R.J. Spry, Max D. Alexander, P.T. Mather, "High Temperature Polymers with Low Dielectric Properties," May 2, 2000, **U.S. Patent 6,057,417**.

### **Books Edited**

- MRS Proceedings Volume 855E, "Mechanically Active Materials," Ed. P.T. Mather, Krystyn Van Vliet, and Wendy Crone (2004).
- MRS Proceedings Volume 709, "Symposium CC: Advances in Liquid Crystalline Materials and Techniques," Ed. P.T. Mather, D.J. Broer, T.J. Bunning, D.M. Walba, R. Zentel (2002).

### **Invited Talks**

173. Army Research Laboratory, Materials Science and Technology Branch, "Shape Memory Composites: from Smart Rubber to Mechanically Activated Shape Change," Aberdeen Proving Ground, MD, June 22, 2014.
172. Jaimee Robertson, Erika D. Rodriguez, Amir Torbati, and P.T. Mather, "Mechanically Activated Shape Memory Elastomeric Laminates (SMEL)," MRS Spring 2014, Symposium XX: Shape Programmable Materials, San Francisco, CA, April 22, 2014
171. P.T. Mather, "Shape Memory Composites: from Mechanically Triggered Shape Change to Triple Shape Behavior," Department Seminar, School of Mechanical and Aerospace Engineering, Cornell University, January 28, 2014.
170. Panelist (of 5), "University-Industry Innovation and Research," NEXT 2013: The Event for Technology Manufacturing & Innovation, Liverpool, NY, November 19, 2013.
169. P.T. Mather, "Shape Memory Composites: from Mechanically Triggered Shape Change to Triple Shape Behavior," Department Seminar, Macromolecular Science and Engineering, Case Western Reserve University, October 25, 2013.
168. Panelist, "Working with a University on Industry Driven Research," 13<sup>th</sup> Annual Syracuse CoE Symposium: Urban Reinvention and Resilience, Syracuse, NY, October 21, 2013.
167. P.T. Mather and J.H. Henderson, "Shape Memory Polymers: A World of Opportunities in Healthcare," Surgery Grand Rounds, SUNY Upstate Medical University, Syracuse, NY, October 16, 2013
166. Patrick T. Mather and Pine Yang, "Shape Memory Polymers: A World of Opportunities in Healthcare," Baxter Healthcare Corporation, Round Lake, IL, July 9, 2013.
165. Patrick T. Mather, Derek C. Weed, Christian B. Iversen, and Ingrid A. Rousseau, "Themomechanical Characterization of Shape Memory Epoxy Nanocomposites," Baekland Symposium, June 23-25, 2013, Niagara Falls, Ontario, Canada.
164. Patrick T. Mather, Xiaofan Luo, Sabrina M. Kowalski, and Erika D. Rodriguez, "Self-Healing Coatings Utilizing a Shape Memory Effect," International Conference on Self-Healing Materials, June 17-21, 2013, Ghent, Belgium.
163. P.T. Mather, "New Designs for Shape Memory Polymers," Macromolecular Science and Engineering

- Department, Case Western Reserve University, Cleveland, OH, June 13, 2013.
162. P.T. Mather, “Reconfigurable and Mechanically Active Polymers” Materials Education and Research in Art and Design, Rhode Island School of Design, Providence, RI, June 7-8, 2013.
  161. Patrick T. Mather and Xinzhu Gu, “High Strain Shape Memory Polymers Without Covalent Crosslinking,” American Chemical Society National Meeting, PMSE Division, Symposium on Stimuli-Responsive Polymers: Synthesis, Mechanisms and Applications, New Orleans, LA, April 9, 2013.
  160. Amir Torbati and Patrick T. Mather, “Synthesis and Characterization of a Thiol-ene Based Liquid Crystalline Hydrogel,” American Chemical Society National Meeting, POLY Division, Symposium on Liquid Crystals and Polymers, New Orleans, LA, April 9, 2013.
  159. Patrick T. Mather and Xiaofan Luo, “Self-healing coatings utilizing a shape memory effect,” American Chemical Society National Meeting, PMSE Division, Symposium Celebrating 50 Years of Polymer Science at Case Western, New Orleans, LA, April 8, 2013.
  158. Patrick T. Mather and Kazuki Ishida, “Soft Shape Memory Polymer of a POSS-Grafted Bacterial Copolyester,” Materials Research Society Spring Meeting, Symposium NN, San Francisco, CA, April 3, 2013.
  157. Patrick T. Mather, “Innovations in Surface and Bulk Shape Memory in Polymers,” University of Colorado Denver, Mechanical Engineering, March 4, 2013
  156. Patrick T. Mather, “The Emerging Faculty Culture: Problem Solvers,” Syracuse University Board of Trustees Winter Meeting, Palm Beach, FL, January 26, 2013
  155. Patrick T. Mather, “Shape Memory Polymers: A World of Opportunities in Healthcare,” University of Rochester, Biomedical Engineering Department Graduate Seminar Series, December 4, 2012.
  154. Patrick T. Mather and Xinzhu Gu, “Water-Triggered Shape Memory Polymers: Keep it Simple,” 1<sup>st</sup> Workshop on Smart Polymers and Biopolymers, UNAM, Cuernavaca, MEXICO, October 18-19, 2012.
  153. Patrick T. Mather and Ifeanyi U. Onyejekwe, “Biomimetic Vascular Grafts: Shape Memory Meets Drug Delivery,” 1<sup>st</sup> Workshop on Smart Polymers and Biopolymers, UNAM, Cuernavaca, MEXICO, October 18-19, 2012.
  152. Kazuki Ishida, Xiaofan Luo, Rebecca Hortensius, and Patrick T. Mather, “Bacterial polyester-based shape memory nanocomposites,” ACS Northeast Regional Meeting (NERM), Rochester, NY, October 2, 2012.
  151. P.T. Mather, X. Luo E.D. Rodriguez, and D.C. Weed, “Laminated Shape Memory Elastomeric Composites,” 4<sup>th</sup> International Conference on Smart Materials, Structures, and Systems, Session A15: Actively Moving Polymers, Montecatini Terme, ITALY, June 10-14, 2012.
  150. P.T. Mather, “Advances in methods of making shape memory polymers for biomedical applications,” Xianhshan Science Conference, Beijing, CHINA, May 29-30, 2012.
  149. I.U. Onyejekwe, X. Luo, and P.T. Mather, 2012 Biotechnology Symposium, Drug Delivery/Nanotechnology Session, “Drug Delivery from Shape Memory Elastomeric Composites,” Syracuse, NY, May 21, 2012.
  148. Temple University, Bioengineering Program, “Shape Memory Polymers: A World of Opportunities in Healthcare,” Philadelphia, PA, May 4, 2012.
  147. TA Instruments Users Meeting and Symposium, “Analysis of Shape Memory Polymers,” New Orleans, LA, April 29-May 2, 2012.
  146. I.U. Onyejekwe, X. Luo, and P.T. Mather, SPE ANTEC, New Technology Forum on Polymer Applications in Health, “Drug Delivery from Shape Memory Elastomeric Composites,” Orlando, FL, April 3, 2012.
  145. CUNY Staten Island, Department of Chemistry, “Bulk and Surface Shape Memory in Polymers,” Staten Island, NY, March 21, 2012.
  144. Merial Corporation, “Innovations in Shape Memory Polymers for Drug Delivery,” 3/12/2012.
  143. American Physical Society, March Meeting, “Surface Shape Memory in Polymers,” in the Session on “Inherently Strained Polymers and Soft Materials”, Boston, MA, February 27, 2012
  142. Drexel University, Department of Chemical and Biological Engineering, “Surface Shape Memory in Polymers,” January 18, 2012; Philadelphia, PA.
  141. Aerospace Applications of Polymers, 242<sup>nd</sup> ACS National Meeting and Exposition, “Epoxy-Based Liquid Crystalline Epoxies,” August 28, 2011, Denver, CO.
  140. Syracuse Rotary, “Smart Polymers at Syracuse Biomaterials Institute,” August 19, 2011.
  139. 2<sup>nd</sup> International Conference on Nanotechnology: Fundamentals and Applications, “Soft Shape Memory Nanocomposites: From Self-Assembly to Electrospinning,” Ottawa, ON, CANADA; July 27-29, 2011.
  138. American Chemical Society, Syracuse Section, “Nanoscale Polymeric Biomaterials,” (co-lecture with Rebecca A. Bader) Syracuse University, Syracuse, NY, July 14, 2011.

137. Avon Products, Inc., “Innovations in Shape Memory Polymers,” and “Smart Polymers@Syracuse,” Suffern, NY, July 13, 2011.
136. MD&M East (Medical Device & Engineering East Exposition), w/ J.M. Hasenwinkel, M.M. Maye, and J.L. Gilbert, “Biomaterials Innovations at Syracuse University,” New York, NY, June 8, 2011.
135. Institute for Advanced Materials, University of North Carolina, Chapel Hill, Leaders in Materials Science Series (inaugural event), “Innovations in Shape Memory Polymers,” Chapel Hill, NC, April 15, 2011.
134. Liquid Crystal Institute, Kent State University, “Shape Memory Polymers,” Kent, OH, March 16, 2011.
133. Chemical Engineering Department, McGill University, “Shape Memory Polymer Nanocomposites: From Smectic Self-Assembly to Electrospinning,” Montreal, Quebec, CANADA, January 10, 2011.
132. Materials Research Society, Fall Meeting, Symposium L: Liquid Crystal Materials: Beyond Displays, “Shape Memory Liquid Crystalline Elastomers,” Boston, MA, November 29, 2010. Co-authors: Kelly A. Burke, Xiaofan Luo, Amir H. Torbati, Ellen E. Benn.
131. Boston Scientific Corporation, “Functional Polymer Innovations: Shape Memory, Self-Healing, and Antimicrobial Materials,” Maple Grove, MN, November 2, 2010.
130. Biomedical Engineering Department, University of Florida, “Biodegradable Shape Memory Polymers,” Gainesville, FL, October 1, 2010.
129. US-Japan Workshop on Reconfigurable Multifunctional Systems, “Shape Memory Polymer Nanocomposites: from Smectic Self-Assembly to Electrospinning,” Hokkaido University, Sapporo, JAPAN, Sept. 8-10, 2010.
128. International Materials Research Congress XIX, P.T. Mather and Kelly A. Burke, “Main-Chain Liquid Crystalline Elastomers for Soft Shape Memory,” August 17, 2010, Cancun, MEXICO.
127. Instituto de Ciencias Fisicas, National Autonomous University of Mexico (UNAM) “Electrospun Smart Polymeric Composites,” August 13, 2010, Cuernavaca, MEXICO.
126. Baxter Healthcare, “Functional Polymer Innovations: Shape Memory, Self-Healing, and Antimicrobial Materials,” June 23, 2010, Chicago, IL.
125. ACS Regional Meeting, CeRMACS, “Electrospun Smart Polymeric Composites,” Dayton, Ohio, June 18, 2010. (with X. Luo and E.D. Rodriguez)
124. WE-Heraeus-Seminar on Biodegradable Polymers as Biomaterials, “Biodegradable Shape Memory Nanocomposites,” Bad Honnef, GERMANY, May 31, 2010.
123. Society of Plastics Engineering ANTEC 2010, Polymer Analysis Division, Keynote Lecturer, “Nanofiber-Based Shape Memory Composites,” May 18, 2010. Orlando, FL.
122. Dept. of Polymer Engineering, University of Akron, “Nanofiber-Based Polymeric Composites,” April 2, 2010.
121. 3<sup>rd</sup> Indo-American Frontiers of Engineering (IAFOE), Agra, India, “Smart Polymers: from Shape Memory to Self-Healing,” March 12, 2010.
120. Dept. of Chemical and Biochemical Engineering, University of Iowa, “Biodegradable Polymeric Nanocomposites,” February 11, 2010.
119. Picker Engineering Program, Smith College, “Smart Polymers: From Shape Memory to Self Healing,” Northampton, MA, December 3, 2009. Joint invited presentation by P.T. Mather, Erika Rodriguez, Ifeanyi Onyejekwe.
118. Joint Northern New York ACS and Clarkson University CAMP Seminar, “Biodegradable Polymeric Nanocomposites,” Potsdam, NY, November 23, 2009.
117. Plastic Modernities Symposium, “Mortal Plastics,” Syracuse, NY, November 13, 2009.
116. IEEE EMBS, Syracuse Chapter, “Smart Polymers: From Shape Memory to Self Healing,” Skaneateles, NY, November 5, 2009.
115. TA Instruments Users Conference, “Characterization of Shape Memory Polymers Using a Dynamic Mechanical Analyzer,” New Castle, DE, October 1, 2009.
114. International Conference on Liquid Crystalline Elastomers, “Shape Memory Effects in Main-Chain Liquid Crystalline Elastomers,” Kent, OH, September 26, 2009.
113. DSM Performance Materials, The Netherlands, “Smart Polymers,” Webex Conference, Sept. 22, 2009.
112. Rochester BioVenture, Materials for the Future, “Antimicrobial Hydrogels Webs,” Rochester, NY, Sept. 21, 2009.
111. Boston Scientific Corporation, “Hybrid Shape Memory Polymers for Fully Resorbable Stents,” June 10, 2009.
111. Syracuse University Technology Roundtable, “Shape Memory and Self-Healing Polymers,” April 29, 2009.
110. Air Force Research Laboratory, “Shape Memory and Self-Healing Polymers,” Wright Patterson Air Force

- Base, OH, April 24, 2009.
109. Materials Research Society, Symposium on Active Polymers, "Color Changing Shape Memory Polymers," San Francisco, CA, April 13, 2009.
  108. University of Connecticut, Polymer Graduate Program, "Biodegradable Nanocomposites for Medical Applications," February 27, 2009.
  107. Procter & Gamble, "Shape Memory Polymers," Cincinnati, OH, February 2, 2009.
  106. SUNY ESF, Chemistry Department, "Biodegradable Nanocomposites for Medical Applications," January 23, 2009.
  105. Syracuse University, School of Architecture, *Design + Technology Workshop*, "Smart Polymers," October 13, 2008.
  104. UMass, Lowell, Chemistry Department Seminar, "Biodegradable Shape Memory Polymers," October 9, 2008.
  103. Brazilian Materials Research Society, VIIth Meeting, "Chemical/Physical Double Networks Containing POSS," Guarujá, BRAZIL, September 30, 2008.
  102. Instituto de Ciencias Físicas, National Autonomous University of Mexico (UNAM) "New Polymeric Materials with Shape Memory and Self Healing," June 25, 2008.
  101. Beijing University of Chemical Technology (BUCT), Beijing, CHINA, "POSS Nanocomposites," June 13, 2008.
  100. International Materials Research Conference, Chongqing CHINA, "POSS-Incorporated Biodegradable Double Networks," June 11, 2008.
  99. Society of Plastics Engineers, National Meeting, Keynote Lecturer for Joint Session of Polymer Analysis Division and Medical Plastics Division, "Biodegradable Nanocomposites," Milwaukee, WI, May 6, 2008.
  98. American Chemical Society, National Meeting, Polymer Division Symposium on Hyperbranched Polymers, "Surface Segregation and Cure Acceleration in Epoxy/HBP Blends," New Orleans, LA, April 8, 2008.
  97. American Chemical Society, National Meeting, Polymer Division, Symposium on Smart Materials, "Shape Memory Effects in Semicrystalline Networks," New Orleans, LA, April 9, 2008.
  96. Chemical Engineering, Yale University, "Biodegradable Nanocomposites for Controlled Drug Delivery," December 5, 2007. Feb. 20, 2008.
  95. Frontiers of Science Lecture, Syracuse University, "Smart Polymers: Adding Action to Plastic," Feb. 13, 2008.
  94. 5<sup>th</sup> New York Complex Matter Workshop, "Main-Chain Liquid Crystalline Elastomers," Dec, 14, 2007.
  93. DARPA workshop of Autonomic Self-Healing Materials, "Shape-Memory Assisted Self-Healing," Boston, MA, Nov. 29-30, 2007.
  92. Polymer Physics Group, Penn State University, "POSS-Based Polymeric Nanocomposites," Nov. 6, 2007
  91. Invited Panelist, "Morphing and Adaptive Structures: Challenges and Opportunities," SAMPE Fall Technical Conference and Exhibition, Cincinnati, OH, October 31, 2007.
  90. Mechanical and Aerospace Engineering Department, Syracuse University, "Thermoset-Thermoplastic Blends for Self-Healing Applications," October 19, 2007.
  89. Rheology Research Center, University of Wisconsin, "POSS-Based Polymeric Nanocomposites," September 21, 2007.
  88. Invited Speaker, ACS National Meeting, POLY Division, Symposium on Polymers and Liquid Crystals, "Shape Memory Phenomena in Liquid Crystalline Elastomers and Networks," Boston, MA, August 22, 2007. Co-Authors: Ingrid A. Rousseau, Haihu Qin, and Kelly A. Burke.
  87. Keynote Lecture, Fundamentals Forum SPE ANTEC 2007, "Polymerization-Induced Phase Separation in Thermoset-Thermoplastic Blends," Cincinnati, OH, May 7, 2007.
  86. Departmental Speaker, UMass Amherst Polymer Science and Engineering, "Biodegradable Nanocomposites with Medical Applications," April 6, 2007.
  85. "POSS-based Polyurethanes as Biodegradable Nanocomposites," International Symposium on Polymeric Materials for Regenerative Medicine, NRC/IMI, Montreal Canada, April 2-3, 2007.
  84. Mechanical Engineering Department Seminar, Washington University at St. Louis, "Biodegradable Nanocomposites," March 17, 2007.
  83. Plenary Lecturer, "Shape Memory Polymers by Design," Second annual colloquium of CREPEC on Polymers, Composites, Nanocomposites and Shape Memory Polymers Alloys, Montreal, Quebec, Dec. 13, 2006.
  82. Materials Research Society, Symposium *A Responsive Soft Matter*, "Responsive Liquid Crystalline Networks," Boston, MA, November 27, 2006.
  81. Syracuse University, "Biodegradable Nanocomposites," Dept. Biomedical and Chemical Engineering,

- Syracuse University, November 3, 2006.
80. General Motors, Inc., "Shape Memory Polymers: Fundamentals to Applications," Warren, MI, September 12, 2006.
  79. SPIE Great Lakes Photonics Symposium, Dayton Convention Center, Dayton OH, "Liquid Crystalline Polymers and Elastomers," June 16, 2006.
  78. Bayer Corp., Leverkusen GERMANY, "New Directions with POSS-Based Materials," June 8, 2006.
  77. MEDICAL POLYMERS 2006, "POSS-Based Polyurethanes: from Degradable Polymers to Hydrogels," Cologne, Germany, June 6, 2006.
  76. ACS Central Regional Meeting, "Polymeric Nanocomposites off the Beaten Path," Frankenmuth, MI, May 18, 2006.
  75. Society of Plastics Engineers, e-Live™ webcast, "Shape Memory Polymers: New Materials and Methods," April 18, 2006. (20 registered participants)
  74. ACS PMSE Symposium Honoring S. Smith and R. Spontak, "Polyurethane Thermoplastics Containing Polyhedral Oligomeric Silsesquioxane (POSS) Units," March 26, 2006.
  73. University of Pittsburgh, Chemical and Petroleum Engineering Dept., "Polymer Nanocomposites ... off the Beaten Path," March 17, 2006.
  72. Case Western Reserve University, Physics/Condensed Matter Colloquium, "Experiments with New Soft Solids," February 13, 2006.
  71. 29<sup>th</sup> Asilomar Polymer Conference, "New Approaches to Incorporating Inorganic Phases within Polymer Hosts," Asilomar, CA, February 6, 2006.
  70. University of Rochester, Chemical Engineering Department, "New Soft Materials with Designed Functionality: Liquid Crystalline Elastomers and Hybrid Hydrogels," Dec. 7, 2005.
  69. Bayer Corporation, Pittsburgh, PA, "New Directions with POSS-Based Materials," November 30, 2005.
  68. BASF, Ludwigshafen, GERMANY, "New Polymer Developments from Mather Research Group," November 16, 2005.
  67. SUNY/Fredonia, "Synthesis and Shape Memory Properties of Liquid Crystalline Elastomers," September 29, 2005.
  66. DARPA/DSO Symbiotic Materials and Structures workshop, "Molecular Design Issues for One-Way and Two-Way Shape Memory Behavior in Polymers," August 25-26, 2005.
  65. Nanofilm, Inc., "Overview of Mather Research Group," August 23, 2005
  64. 4<sup>th</sup> AIR FORCE WORKSHOP ON MULTIFUNCTIONAL AEROSPACE MATERIALS AND STRUCTURES, "Versatile Soft Actuation by Liquid Crystalline Networks," August 8-9, 2005.
  63. Gordon Conference on Liquid Crystals, invited lecture, "Liquid Crystalline Elastomers," June 2005.
  62. University of Minnesota, Institute of Mathematics and its Applications, "Liquid Crystalline Elastomers: Real Materials with Real Challenges" May 24, 2005.
  61. Keynote Lecture, Applied Rheology Special Interest Group (ARSIG), "Rheological Investigation of Entangled Hybrid of Polystyrene-POSS Copolymers" SPE ANTEC May, 3, 2005.
  60. University of Wisconsin, Chemical and Biological Engineering Department, April 26, 2005, "Polyelectrolyte Spin Assembly."
  59. American Physical Society, "How Does POSS Influence Polymer Properties?" Annual Meeting, March 22, 2005, Los Angeles, CA.
  58. Rohm and Haas, Spring House, PA, "Polymeric Nanocomposites ... off the Beaten Path," January 25, 2005.
  57. Wright State University, Dept. of Chemistry, "Shape Memory Effect in Smectic-C Liquid Crystalline Elastomers," November 12, 2004.
  56. University of Akron, Polymer Engineering, "New Understanding and Applications of Layer-by-Layer Polyelectrolyte Assembly," October 29, 2004.
  55. Georgia Institute of Technology, "Synthesis and Characterization of Liquid Crystalline Elastomers," October 21, 2004.
  54. American Society for Composites, Symposium Honoring H.T. Hahn, "Shape memory effect in smectic-C liquid crystalline elastomers," Atlanta, GA October 19, 2004.
  53. Army Research Laboratory, AMSRL-WM-MA, "Overview of Structural and Functional Polymers Research," Aberdeen Proving Ground, MD, July 12, 2004.
  52. Materials Integrity Management Symposium, "Shape Memory Polymers: Materials Overview and Application Proposals," Boston, MA, June 8-9, 2004.

51. ACS International Workshop on Branched Polymers for Performance, "High T<sub>g</sub> hyperbranched polymers as thermoset processing and toughening aids," May 23-26, 2004.
50. SPE Polym. Anal. Div. Founder's Award honoring M.T. Shaw, "Strain Fixing and Recovery in Liquid Crystalline Networks," May 18, 2004.
49. University of Massachusetts at Lowell Polymer Science Colloquium, "Smectic LC Elastomers," March 11, 2004.
48. SAMSI Workshop on Multi-scale Challenges in Soft Matter Materials, "Trends in Experimental Studies of Soft Materials," February 15-17, 2004.
47. Trinity College, "Shape Memory of New Siloxane-Based Liquid Crystalline Elastomers," January 30, 2004.
46. Crompton Corporation, "Precision Amphiphilic Hybrids: Self-Assembly in Telechelic and Multiblock Architectures" November 6, 2003.
45. 7th US-Germany Polymer Symposium, "Telechelic and Multiblock Polyurethanes Incorporating POSS," Bayreuth, Germany, July 20-25, 2003.
44. Keynote Address, "Nano-101: Since When is Smaller Better?" Annual Institute of Materials Science Associates Program Meeting, University of Connecticut, May 28, 2003.
43. University of Southern Mississippi, Department Seminar, "Shape Memory Polymers," scheduled for April 23, 2003.
42. Naval Under Sea Warfare Center, Transducer Materials Branch, "Applied Polymer Science at UConn: New Polymers for Large Strain Actuation," March 20, 2003.
41. MIT, Program in Polymer Science and Technology, "Hybrid polymers incorporating POSS: Unique microstructures for Unique properties," March 12, 2003.
40. World Congress on Biomimetics and Artificial Muscles, "Tailored Shape Memory Polymers: Not all SMPs are Created Equal," Albuquerque, NM, December 10, 2002.
39. Society of Plastics Engineers, Western New England Section, "Nano 101: Since When is Smaller Better?" December 4, 2002.
38. Linsay Lecture, Texas A&M, Department of Chemical Engineering, "Modifications to Polymer Microstructure and Physical Properties via Polyhedral Oligosilsesquioxane (POSS) Incorporation" Nov. 12, 2002.
37. 3<sup>rd</sup> Annual Nanostructured Chemicals Workshop, September 2002, Huntington Beach, CA, "POSS-Based Telechelics."
36. European MRS Meeting, Nano- and Micro-Composite Symposium, "A Novel Building Block for the Construction of Inorganic-Organic Materials," Strasbourg, FRANCE June 20, 2002.
35. Institute for Theoretical Physics at U.C. Santa Barbara, (Program on Dynamics of Complex and Macromolecular Fluids) May 15, 2002, "Rheology of Liquid Crystalline Polymers: An Experimental View of Theoretical Needs."
34. American Physical Society, Dillon Medal Symposium honoring T.J. Bunning, "Evolution of Textural Response during Cure of Liquid Crystalline Thermosets," Indianapolis, IN, March 2002.
33. Boston Scientific Corp., Colloquium, "Toward Electroactive Polymers: From Shape Memory Polymers to Electroactive Hydrogels," Natick, MA, February 27, 2002.
32. American Institute of Chemical Engineers, Alpha Chi Sigma symposium honoring R.G. Larson, "New Polymeric Nanostructures for Modified Deformation Behavior," Reno, NV, November 7<sup>th</sup>, 2001.
31. Materials Science and Engineering Department, SUNY Stony Brook, "Studies on Soft Actuators: Electroactive Gels and Shape Memory Polymers," October 29, 2001.
30. Polymer Science Department, UMass, Amherst, "Optical Rheology of Liquid Crystalline Polymers," October 5, 2001.
29. Metallurgical and Materials Engineering Dept., University of Connecticut, "Toward Soft Actuators: From Electroactive Hydrogels to Shape Memory Polymers," September 2001.
28. American Society of Composites, Session on Nanocomposites, "Rod/Coil Molecular Composites: Relationship between Rheology and Morphology," Blacksburg, VA September 2001.
27. Kimberly-Clark Corporation, "Electrospinning of Polymeric Nanofibers and Composites" May 18, 2001
26. ACS Rubber Division Meeting, Paul Flory Symposium, "Mechanical Reinforcement and Nanostructure in POSS-based Thermosets," Providence, RI April 24-27, 2001.
25. McGill University, Dept. of Chemical Engineering, "Watching Nematic Polymers Respond to Flow," October 30, 2000.
24. City College of New York/CUNY Benjamin Levich Institute for Physicochemical Hydrodynamics, October



- 3, 2000, "Optical Microrheology of Segmented Thermotropic Polymers."
23. Nanostructured Chemicals Workshop, Sept. 7-8, 2000, Huntington Beach, CA, "Processing and Materials Science of POSS Hybrid Materials"
22. SAMPE Forum on *Advanced Polymeric Materials for Space Applications*, "Electroactive Gels for Adaptive Optics," May 23, 2000, Long Beach, CA
21. American Chemical Society New England Regional Meeting, "Synthesis and Characterization of New POSS Hybrid Polymers", June 2000, Storrs, CT.
20. Saint-Gobain International Polymer Network Meeting, Sole Invited Lecturer, May 10, 2000. "Unique Properties of Polymers from Inorganic/Organic Hybrid Monomers."
19. American Physical Society, "Phase Behavior, Rheology and Morphology of Binary Blends of Thermotropic Polymers," Dillon Session for W.R. Burghardt, Minneapolis, MN, March 2000.
18. American Chemical Society National Meeting, March 26-31, 2000, San Francisco, CA. "Strain Recovery in POSS Hybrid Thermoplastics," Symposium on Hybrid Organic-Inorganic Polymers.
17. Penn State University, Materials Science and Engineering Seminar Series, Oct. 7, 1999, "Morphology and Properties of Novel Hybrid Thermoplastics."
16. Annual Connecticut Polymer Exposition, Sept. 30, 1999, "Microstructure and Strain Recovery in Novel Hybrid Polymers."
15. University of Connecticut, Polymer Science Series, Sept. 17, 1999, "Thermotropic Polymers: Flow-Induced Phase Transitions and Controlled Flexibility".
14. NSF Garcia-MRSEC Meeting, SUNY-Stonybrook, October 24, 1998, "Nanostructure and Shape-Memory of Novel Inorganic-Organic Polymers".
13. University of Michigan, Oct.22 1998, "Rheo-Optical Investigations of Thermotropic Polymers"
12. Kent State University, Liquid Crystal Institute, August 7, 1998, "Rheo-Optics of Polymeric Liquid Crystals."
11. University of Akron, Polymer Engineering Dept., Feb. 6 1998, "Mechanical Relaxation in Inorganic-Organic Hybrid Thermoplastics"
10. Inst. Materials Science, University of Connecticut, Feb. 20, 1998. "Microstructural Observations During Shear Flow of Thermotropic Polymers"
9. University of North Carolina, Dept. Applied Mathematics, November 1997. "Rheo-Optical Investigations of Thermotropic Liquid Crystals and Liquid Crystalline Polymers".
8. University of Dayton, Materials Science Department, "Mechanical Relaxation in Inorganic-Organic Hybrid Thermoplastics," December 1997.
7. Society for Industrial and Applied Mathematics, Phila. PA, May 1997.
6. USAF Wright Laboratory, Polymer Branch, "Flow-Induced Isotropic-Nematic Transition in a Thermotropic LCP," November 1996.
5. Applied Mathematics Workshop for Materials Studies and Industrial Applications, "Rheo-Optical Investigations of Thermotropic Liquid Crystals and Liquid Crystalline Polymers," October 1996, Penn State University.
4. Hoechst Celanese Corporation, Corporate Research Center, "Themally Crosslinkable Thermotropic Copolyesters," October 1996, Summit NJ.
3. Penn State University, Polymer Science Department, "Shear Flow Visualization and Interfacial Tension Measurements of Thermotropic/Isotropic Immiscible Polymers," May 1996.
2. UCLA, Department of Chemistry, "Structural Response of Nematics to Transient Shear Flow," June 1995.
1. U. Illinois, Dept. of Materials Science, "Liquid Crystal Flow", October 1994.

## **Conference Presentations**

178. Jaimee Robertson, Amir Torbati, and P.T. Mather, "Water-Triggered Origami with a Polymeric Web," MRS Spring 2014, Symposium XX: Shape Programmable Materials, San Francisco, CA, April 23, 2014.
177. Pine Yang, Richard M. Baker, James H. Henderson, and Patrick T. Mather, "Shape Memory Activation of Wrinkled Cell Culture Substrates," AIChE Annual Meeting, Spatially Patterned Biomaterials Session, San Francisco, CA, November 6, 2013.
176. Pine Yang and Patrick T. Mather, "Toward a heat-curling polymeric needle designed for safe disposal," Society for Biomaterials National Meeting, Symposium on Biomaterials in Medical Device Recycling and Reprocessing, Boston, MA, April 10-11, 2013.
175. Torbati, A.H.; Mather, R.T.; Mather, P.T. "Fabrication of a Light-Emitting Shape Memory Polymeric Web."

Society for Biomaterials, Boston, MA, April 10-13, 2013.

174. Torbati, A.H.; Mather, P.T. "Synthesis and Characterization of a Thiol-ene Based Liquid Crystalline Hydrogel." 245th American Chemical Society National Meeting, POLY Division, Symposium on Liquid Crystals and Polymers, New Orleans, LA, April 9, 2013.
173. Birjandi Nejad, H.; Torbati, A.H.; Ponce, M.; Sutton, J.P.; Mather, P.T. "Triple Shape Memory Composites (TSMCs)." Nunan Lecture and Research Day, Syracuse University, Syracuse, NY, April 5, 2013.
172. Torbati, A.H.; Mather, R.T.; Mather, P.T. "Fluorescent Shape Memory Polymer Webs." Nunan Lecture and Research Day, Syracuse University, Syracuse, NY, April 5, 2013.
171. Richard M. Baker, James H. Henderson and Patrick T. Mather, "Poly( $\epsilon$ -caprolactone) Shape Memory Polymer for Filling Critical-Sized Bone Defects," Syracuse University Nunan Research Day, Poster Presentation, Syracuse, NY, April 5, 2013.
170. Richard M. Baker, James H. Henderson and Patrick T. Mather, "Shape Memory Scaffold with a Tunable Recovery Temperature for Filling Critical-Size Bone Defects," Northeast Bioengineering Conference, Symposium on Tissue Engineering, Syracuse, NY, April 6, 2013.
169. Richard M. Baker, James H. Henderson and Patrick T. Mather, "Poly( $\epsilon$ -caprolactone) Shape Memory Polymer for Filling Critical-Sized Bone Defects," Annual Meeting of the Society for Biomaterials, Poster Presentation, Boston, MA, April 11-12, 2013.
168. Pine Yang and P.T. Mather, "Gradient Wrinkles on a Functionally Graded Shape Memory Polymer," Materials Research Society Spring Meeting, San Francisco, CA, April 3, 2013 (poster).
167. Amir Torbati, Mileysa Ponce, and P.T. Mather, "Dual Activation of Triple Shape Memory Elastomers as a New Approach to Functional Biomaterials," Materials Research Society Spring Meeting, San Francisco, CA, April 3, 2013 (contributed talk).
166. Baker RM, Henderson JH, and Mather PT. "Poly(caprolactone) shape memory scaffold for bone tissue engineering," Biomedical Engineering Society Annual Fall Meeting. Atlanta, GA. October 24-27, 2012.
165. Eric B. Finkelstein, Wendy Feinstein, Yong Chen, James H. Henderson and Patrick T. Mather, "Cell-material interactions on a series of acrylate-based shape memory polymers," ACS Northeast Regional Meeting (NERM), Rochester, NY, October 3, 2012.
164. Amir H. Torbati, and Patrick T. Mather, "Epoxy-based poly(ethylene glycol) shape memory elastomers as a new approach to functional biomaterials," ACS Northeast Regional Meeting (NERM), Rochester, NY, October 3, 2012.
163. Baker RM, Tseng L, Brasch ME, Davis KA, Yang P, Manning ML, Mather PT, and Henderson JH. Shape-Changing Shape-Memory Polymer Substrates and Scaffolds: New Approaches to Control and Track Cell Mechanobiology in Two and Three Dimensions. Poster Presentation, Gordon Research Conference on Signal Transduction by Engineered Extracellular Matrices, Biddeford, ME; July 8–13, 2012.
162. X. Gu and P.T. Mather, "Shape Memory Behavior of POSS-based thermoplastic polyurethanes," 83<sup>rd</sup> Annual Meeting of the Society of Rheology, October 9-13, 2011, Cleveland, OH.
161. D.C. Weed, and P.T. Mather, "Determination of Intrinsic Viscosity Using a Viscometer for Prediction of Minimum Fiber Diameter in Electrospinning," 83<sup>rd</sup> Annual Meeting of the Society of Rheology, October 9-13, 2011, Cleveland, OH.
160. B. Alvarado-Tenorio, A. Romo-Uribe, P.T. Mather, "Induced Anisotropic Orientation in POSS/PCL Crosslinked Nanocomposites with Shape Memory," Poster, 242<sup>nd</sup> ACS National Meeting and Exposition, August 29, 2011, Denver, CO.
159. P. Yang, N.L. Chaar, P.T. Mather, "Characterization of biodegradable PCL-PEO co-networks," 37th Annual Northeast Bioengineering Conference, Troy, NY, April 3, 2011.
158. K.A. Davis, K.A. Burke, P.T. Mather, J.H. Henderson, "Surface shape memory substrates for active cell culture," 37th Annual Northeast Bioengineering Conference, Troy, NY, April 2, 2011.
157. R.M. Baker (poster), P. Yang, J.H. Henderson, P.T. Mather, "Wrinkle Formation on a Biocompatible Shape Memory Polymer," 37th Annual Northeast Bioengineering Conference, Troy, NY, April 2, 2011.
156. B. Alvarado-Tenorio, A. Romo-Uribe, P.T. Mather, "Crystalline and Nanoscale Structure in Shape Memory Hybrid Nanocomposites Determined by Simultaneous WAXS-SAXS Analysis," Materials Research Society, Fall Meeting, Symposium HH: Polymer-Based Smart Materials, Boston, MA, November 29, 2010.
155. Estefania Huitron-Rattinger, K. Ishida, A. Romo-Uribe, P.T. Mather, "Hybrid Polyurethane Nanocomposites: Synthesis and Microstructure," Materials Research Society, Fall Meeting, Symposium HH: Polymer-Based Smart Materials, Boston, MA, November 29, 2010.
154. K. Ishida, Estefania Huitrón-Rattinger, Angel Romo-Uribe, Patrick T. Mather, "Synthesis and characterization of

POSS-containing polyurethane cationomers,” 82<sup>nd</sup> Annual Meeting of Society of Rheology, Santa Fe, NM October 27, 2010.

153. Erika D. Rodriguez, Xiaofan Luo and Patrick T Mather. Systems of Linear and Crosslinked Poly ( $\epsilon$ -Caprolactone Polymers for Shape Memory Assisted Self-Healed (SMASH). Society for the Advancement of Material and Process Engineering (SAMPE) Conference. October, 2010.
152. Kelly A. Burke, X. Luo, and P.T. Mather, “Characterization of new surface shape memory phenomena in soft and rigid shape memory polymers,” 82<sup>nd</sup> Annual Meeting of Society of Rheology, Santa Fe, NM October 27, 2010.
151. X. Gu and P.T. Mather, “Hardblock-free thermoplastic polyurethanes (TPUs) exhibiting shape memory,” ACS National Meeting, Boston, MA, August 24, 2010.
150. K.A. Burke and P.T. Mather, “Evolution of Microstructure During Strain Recovery of a Shape Memory Liquid Crystalline Elastomer,” ACS National Meeting, Boston, MA, August 22, 2010.
149. K.A. Burke and P.T. Mather, “Main-Chain Liquid Crystalline Elastomers as Shape Memory Polymers,” ACS National Meeting, Boston, MA, August 23, 2010.
148. P.T. Mather, Q. Guo, J. Wu, P.T. Knight, “Blends of Paclitaxel with POSS-based biodegradable polyurethanes,” International Materials Research Congress XIX, Nanomaterials for Biomedical Applications Symposium, August 16, 2010. Cancun, MEXICO.
147. Xiaofan Luo and Patrick T. Mather, “Design Principles of New Shape Memory Polymeric Composites,” ACS NERM, Potsdam, NY, June 3, 2010.
146. Richard Baker, Patrick T. Mather and James H. Henderson, "Composition Optimization of Transition Temperature and Breadth of Glassy Shape Memory Polymers," NERM, Potsdam, NY, June 3, 2010.
145. Jian Wu, Xinzhu Gu and Patrick T. Mather\*, “Biostable Multiblock Thermoplastic Polyurethanes incorporating Poly( $\epsilon$ -caprolactone) and Polyhedral Oligomeric Silsesquioxane (POSS)” Society for Biomaterials Annual Meeting: Engineering Materials for Medical Use: The New, the improved and the Coated, Seattle, Washington, April 21-24, 2010.
144. Jian Wu and Patrick T. Mather, "Long-term Biostable Poly( $\epsilon$ -caprolactone)-based Multiblock Thermoplastic Polyurethanes incorporating Polyhedral Oligomeric Silsesquioxane (POSS)." Materials Research Society Fall Meeting, Symposium RR: Engineering Biomaterials for Regenerative Medicine, Boston, MA, November 30-Dec.4, 2009.
143. Davis K.A., Burke K.A., Mather P.T., and Henderson J.H., “Active Cell Culture: Surface Shape Memory Triggered Topographic Change,” Biomedical Engineering Society Annual Fall Meeting, Pittsburgh, PA, 2009.
142. K.A. Burke and P.T. Mather, “Microstructure and Shape Memory of Main-Chain Liquid Crystalline Elastomers,” September 24, 2009, International Liquid Crystal Elastomer Conference, Kent OH.
141. P.T. Knight, James T. Kirk, James M. Anderson, and P.T. Mather, “In-Vivo Biocompatibility and Kinetic Degradation Analysis of Aliphatic Polyester Polyurethanes,” Gordon Research Conference: Biocompatibility / Tissue Engineering 07/19/2009 - 07/24/2009, Holderness School, Holderness, NH.
140. K.A. Davis, K.A. Burke, P.T. Mather, and J.H. Henderson, “Active Cell Culture: Surface Shape Memory Triggered Topographic Change,” Gordon Research Conference: Biocompatibility / Tissue Engineering 07/19/2009 - 07/24/2009, Holderness School, Holderness, NH.
139. Xiaofan Luo and Patrick T. Mather, “A Thermally Mendable “Bricks and Mortar” Thermoplastic/Thermoset Blend,” SPE ANTEC, Chicago, IL, June 24, 2009.
138. Kelly A. Burke and Patrick T. Mather, “Impact of Crosslink Density in Liquid Crystalline Elastomers on Bulk and Surface Shape Memory Effects,” Materials Research Society, Spring Meeting, San Francisco, CA, April 15, 2009.
137. Erika Rodriguez, Xiaofan Luo, Patrick T. Mather, “Shape Memory Miscible Blends for Thermal Mending,” SPIE Smart Structures Conference, San Diego, CA, March 10, 2009.
136. Xiaofan Luo, Kathryn E. Lauber and Patrick T. Mather, “A Thermally Induced Rigid, Reversible Self-Adhesive Based on a Phase Separated Thermoset/Thermoplastic Blend,” The Adhesion Society 32<sup>nd</sup> Annual Meeting, Savannah, GA, February 16, 2009.
135. Jian Wu, Shuyu Hou, Dacheng Ren and Patrick T. Mather, “Antimicrobial Nanostructured Hydrogel Webs with Controlled Silver Release,” Materials Research Society Fall Meeting, Symposium HH: Advances in Material Design for Regenerative Medicine, Drug Delivery, and Targeting/Imaging, Boston, MA, December 1-3, 2009.

134. Erika D Rodriguez, Xiaofan Luo and Patrick T Mather, “Miscible Blends of Linear and Crosslinked Poly( $\epsilon$ -caprolactone) for Shape Memory Assisted Self-Healing,” Materials Research Society Fall Meeting, Symposium BB: Polymer-Based Smart Materials--Process, Properties, and Application, Boston, MA, December 2-5, 2009.
133. Erika D. Rodriguez, Taekwoong Chung, Xiaofan Luo, P.T. Mather, Bonifacio Alvarado Tenorio, Angel Romo-Uribe, Stephanie Dorta-Quinones, Shaun Miller, “Miscible Blends of Linear and Crosslinked Polymers for Shape Memory-Assisted Self-Healing (SMASH),” Brazilian Materials Research Society, VIIth Meeting,” Guarujá, BRAZIL, September 30, 2008. (poster)
132. Erika D. Rodriguez, Xiaofan Luo, P.T. Mather, “Miscible Blends of Linear and Crosslinked Polymers for Shape Memory-Assisted Self-Healing (SMASH),” Brazilian Materials Research Society, VIIth Meeting,” Guarujá, BRAZIL, September 30, 2008. (poster)
131. Xiaofan Luo, Rebecca Lyons, and P.T. Mather, “Chemorheology Studies of Epoxy/Poly( $\epsilon$ -caprolactone) Polymerization Induced Phase Separation (PIPS) Systems,” XV<sup>th</sup> International Congress on Rheology, Monterey, CA, August 3-9, 2008.
130. K. Lee, and P.T. Mather, “POSS-Incorporated Biodegradable Polymer Double Networks,” 8<sup>th</sup> World Biomaterials Congress, May 28 – June 1, 2008, Amsterdam, The Netherlands.
129. P.T. Knight and P.T. Mather, “Degradable Polyurethanes Strengthened by POSS,” 8<sup>th</sup> World Biomaterials Congress, May 28 – June 1, 2008, Amsterdam, The Netherlands.
127. Olivier Arnoult<sup>1</sup>, Jonghyun Choi<sup>2</sup>, Ryszard Wycisk<sup>2</sup>, Kyung Min Lee<sup>1</sup>, Peter N. Pintauro<sup>2</sup> and Patrick T. Mather<sup>1</sup>; “Nanofiber Network Membranes for PEM Fuel Cells.” MRS Fall Meeting, Boston, MA, November 27, 2007.
126. “PEG-POSS Hybrid Polyurethanes: Mechanically Robust Nanostructured Hydrogels.” Jian Wu<sup>2</sup> and Patrick T. Mather<sup>1</sup>; <sup>1</sup>Department of Macromolecular Science and Engineering, Case Western Reserve University, Cleveland, Ohio; <sup>2</sup>Chemical Engineering Department and Polymer Program, Institute of Materials Science, University of Connecticut, Storrs, Connecticut.
125. K.-M. Lee and P.T. Mather, “Biodegradable Double Networks Incorporating POSS Moieties,” Society of Rheology 79<sup>th</sup> Annual Meeting, October 11, 2007, Salt Lake City, Utah.
124. K.A. Burke and P.T. Mather, “Liquid Crystalline Co-Elastomers: Phase Behavior and Shape Memory Properties,” ACS National Meeting, Boston, MA, August 21, 2007.
123. Q. Guo, P. T. Knight, H. Cho, and P. T. Mather, “Tailored Drug Delivery from Biodegradable Nanostructured Polyurethanes” Gordon Conference on Biomaterials: Biocompatibility/Tissue Engineering, Holderness School, July 22-27, 2007.
122. P.T. Knight and P.T.Mather, “Biodegradable Thermoplastic Polyurethane Nanocomposites Using POSS” Gordon Research Conference on Biomaterials: Biocompatibility/Tissue Engineering, Holderness School, July 22-27, 2007.
121. Olivier S. Arnoult and P.T. Mather, “Crystallization of Shape Memory Polymer Blends,” Society of Plastics Engineers, ANTEC 2007, Cincinnati, OH, May 7, 2007.
120. Kyung-Min Lee and P.T. Mather, “Functionally-Graded Shape Memory Polymers,” Society of Plastics Engineering, ANTEC 2007, Cincinnati, OH, May 7, 2007.
119. Kyung-Min Lee, Taekwoong Chung, and P.T. Mather, “POSS-based photocured double networks as biodegradable shape memory polymers,” American Chemical Society, PMSE Division, March 29, 2007, Chicago, IL.
118. Pamela T. Knight, Haihu Qin, Kyungmin Lee, John Bobiak and Patrick T. Mather, “Synthesis and Accelerated Degradation of Tunable Biocompatible Thermoplastic Polyurethanes Containing POSS” Materials Research Society, Symposium A *Responsive Soft Matter*, Boston, MA, November 27, 2006.
117. Cheryl J. Campo, Olivier Arnoult, and Patrick T. Mather, “Crystallization of Shape Memory Binary Blends Containing One Crystallizable Component,” 78<sup>th</sup> Annual Meeting of the Society of Rheology, Portland, Maine, October, 2006.
116. Patrick T. Mather, Kyung-Min Lee, Changdeng Liu, and Charles Burstone, “Shape Memory Polymer Orthodontics,” *SPE ANTEC* Medical Plastics Division, May 9, 2006.
115. H. Qin and P.T. Mather, “Impact of residual metathesis catalyst on thermal stability of a liquid crystalline polymer,” ACS National Meeting, POLY Division, March 30, 2006.
114. J. Wu and P.T. Mather, “Capillary instability of LCP thin fibers: nematic/isotropic interfaces,” ACS National Meeting, PMSE Division, March 29, 2006.
113. Jian Wu, T.S. Haddad, and P.T. Mather, “Rheology of Entangled PS-POSS Copolymers,” 77<sup>th</sup> Annual Meeting of the Society of Rheology, Vancouver, BC, Canada, October, 2005.

112. C.J. Campo, P.T. Mather, "PVDF:PMMA Shape Memory Blends: Effect of Short Carbon Fiber Addition" ACS Annual Meeting, Washington, DC, September, 2005.
111. P.T. Mather, I.A. Rousseau, and Haihu Qin, "Polydomain Liquid Crystalline Networks as Actuators," American Physical Society Annual March Meeting, DPOLY, Los Angeles, CA, March 22, 2005.
110. I.A. Rousseau and P.T. Mather, "Relationship Between Phase Behavior and Actuation in Smectic Elastomers," 76th Annual Meeting of the Society of Rheology, Lubbock, TX, February, 2005.
109. J. Wu, Q. Ge, K.A. Burke, and P.T. Mather, "Rheological Study of the Influence of Shear Flow on Crystallization of Polyhedral Oligosilsesquioxane (POSS) in PEG-based Multiblock Polyurethanes," 76th Annual Meeting of the Society of Rheology, Lubbock, TX, February, 2005.
108. A.E. Senador, Jr., M.T. Shaw, P.T. Mather, and Y. Patil, "Combinatorial Squeezing Flow Array for Grading of Asphalt," 76th Annual Meeting of the Society of Rheology, Lubbock, TX, February, 2005.
107. J. Wu, Q. Ge, K.A. Burke, and P.T. Mather, "Crystallization of POSS in a PEG-based Multiblock Polyurethane Architecture," MRS Fall Meeting, *Symposium EE: Organic/Inorganic Hybrid Materials*, Boston, MA November 2004.
106. C. Liu and P.T. Mather, "A Shape Memory Polymer with Improved Shape Recovery," MRS Fall Meeting, *Symposium W: Mechanically Active Materials*, Boston, MA November 2004.
105. I.A. Rousseau and P.T. Mather, "When Actuation Meets Liquid Crystallinity," MRS Fall Meeting, *Symposium CC: Liquid Crystal Materials and Technologies*, Boston, MA November 2004. [IAR won MRS Gold Medal Based on this Work]
104. H. Qin and P.T. Mather, "Tandem Shape Memory in a Polydomain Nematic Network," MRS Fall Meeting, *Symposium CC: Liquid Crystal Materials and Technologies*, Boston, MA November 2004.
103. C. Liu and P.T. Mather, "High thermal conductivity shape memory polymers," *SPE ANTEC Polymer Analysis Division*, Chicago, IL, May 2004.
102. Jian Wu and P.T. Mather, "Capillary Instabilities of thin nematic liquid crystalline polymer fibers embedded in a flexible polymer matrix" American Physical Society Annual March Meeting, DPOLY, Montreal Canada, March 25, 2004.
101. I.A. Rousseau, H. Qin, and P.T. Mather, "Strain Fixing and Recovery in Liquid Crystalline Elastomers," American Physical Society Annual March Meeting, DPOLY, Montreal Canada, March 25, 2004.
100. Eckrote KA, Rojanapitayakorn P, Mather PT, Weiss RA, Prasad A, Karmaker AC, Goldberg AJ. Glass fiber reinforced thermoplastics for dental CAD/CAM [abstract 1392]. *Journal of Dental Research* 2004; 83(Special Issue A).
99. C.J. Lefaux, B.-S. Kim, and P.T. Mather, "Layer-by-Layer Deposition of Molecular Composites on Quartz and Nafion Membranes," First International Conference on Fuel Cell Development and Deployment, University of Connecticut, Storrs, CT, March 7-10, 2004.
98. I.A. Rousseau, H. Qin, and P.T. Mather, "Smectic Liquid Crystalline Elastomers," SAMSI Workshop on Multi-scale Challenges in Soft Matter Materials, Research Triangle Park, NC, February 15-17, 2004.
97. Jian Wu and P.T. Mather, "The Nematic-Isotropic Interface," SAMSI Workshop on Multi-scale Challenges in Soft Matter Materials, Research Triangle Park, NC, February 15-17, 2004.
96. Jian Wu, T.S. Haddad, and P.T. Mather, "Rheological behavior of polystyrene (PS) with incorporation of hybrid polyhedral oligosilsesquioxane (POSS)," 75th Annual Meeting of the Society of Rheology, Pittsburgh, PA, October, 2003.
95. Jian Wu, P.T. Mather, "Orientation effects on the capillary instabilities for thin liquid crystalline fibers embedded in a flexible polymer matrix," 75th Annual Meeting of the Society of Rheology, Pittsburgh, PA, October, 2003.
94. Changdeng Liu, J. Wu, and P.T. Mather, "Nonisothermal crystallization kinetics of polycyclooctene: Characterization using thermal and optical methods," *ACS National Meeting*, PMSE Division, New York, August, 2003.
93. I.A. Rousseau, H. Qin, P.T. Mather. "New Siloxane-based Liquid Crystalline Blends, Copolymers and Main-Chain Elastomers with Mixed Mesogens for Tailored Properties," *Second International Workshop on Liquid Crystalline Elastomers*, Bleibach, Germany, September 2003.
92. C.J. Lefaux, B.-S. Kim, and P.T. Mather, "Formation of Molecular Composite Coatings on Quartz and Nafion by Sequential Adsorption from Methanol Solutions" Gordon Conference on Ion-Containing Polymers, Mount Holyoke College, July 13-17, 2003.

91. C.J. Lefaux, J. Zimmerlin, M. Zygmunt, P.T. Mather, "Growth Dynamics of (PPS/PAH)<sub>n</sub> Layer-by-Layer Assembly through Contact ESA and Spin Self Assembly," Gordon Conference on Ion-Containing Polymers, Mount Holyoke College, July 13-17, 2003.
90. Changdeng Liu and P.T. Mather, "Thermomechanical Characterization of Blends of Poly(vinyl acetate) with semicrystalline polymers for shape memory applications," *SPE ANTEC* Polymer Analysis Division, Nashville, TN, May 2003.
89. P.T. Mather, B.-S. Kim, and Q. Ge, "Polyhedral oligosilsesquioxane (POSS) endcapped polyethylene oxide (PEO) telechelics: block copolymer behavior," *ACS National Meeting*, Materials Chemistry Secretariat, New Orleans, LA, March 2003.
88. H. Qin; B. Chakulski; P.T. Mather; G.S. Constable' E.B. Coughlin, "Acyclic diene metathesis (ADMET) polymerization of unsaturated thermotropic polyesters from liquid crystalline dienes," *ACS National Meeting*, POLY Division, New Orleans, LA, March 2003.
87. H. Qin; P.T. Mather; J.-B. Baek; L.-S. Tan, "Modification of bisphenol-A BMI resin (BPA-BMI) with allyl-terminated hyperbranched polyimide (AT-PAEKI)," *ACS National Meeting*, POLY Division, New Orleans, LA, March 2003.
86. W. Lee, J. Deng, A.R. Esker, B.-S. Kim and P.T. Mather, "Isotherm Studies of Telechelic POSS-PEO Polymers" APS, Austin TX, 2003.
85. P.Rojanapitayakorn, P.T. Mather, R.A. Weiss, A.J. Goldberg, "Hot Compaction of PET Fibers" APS, Austin TX, March 2003.
84. P.Rojanapitayakorn, P.T. Mather, R.A. Weiss, A.J. Goldberg, "Hot Compaction of PET Fibers: Influence of Processing on Crystallinity and Mechanical Properties," Annual Technical Conference - The Fiber Society, Natick, MA, October, 2002.
83. J.-H. Lee, A. E. Senador, Jr., Y. An, P.T. Mather, and M. T. Shaw, "Development of an electrostatic spinning process for molten polymers," *Texcomp-6*, Philadelphia, September 2002.
82. C.J. Lefaux, J.A. Zimmerlin, and P.T. Mather, "Influence of Ionic Strength on Build-Up of Multilayer Thin Films Using Spin Self-Assembly," *ACS National Meeting*, Boston, August 2002.
81. J. Wu, G.-M. Kim, P.T. Mather, N. Venkatasubramanian, T. D. Dang, and F.E. Arnold, "Rheology and Morphology of Molecular Composites from Sulfonated Rigid Rods," *ACS National Meeting*, Boston, August 2002.
80. I.A. Rousseau and P.T. Mather, "Two-Stage Electroactuation of Partially Neutralized Hydrogels," *ACS National Meeting*, Boston, August 2002.
79. C. Liu, G. Etienne-Modeste, P.T. Mather, "Design, synthesis, and thermomechanical characterization of a new triblock copolymer with shape memory effects," 74th Annual Meeting of The Society of Rheology, Minneapolis, October, 2002.
78. B.S. Kim and P.T. Mather, "Association behavior of nonionic polyhedral oligosilsesquioxane (POSS) telechelics," 74th Annual Meeting of The Society of Rheology, Minneapolis, October, 2002.
77. J. Wu and P.T. Mather, "Interfacial tension in an immiscible blend containing a thermotropic liquid-crystalline polymer," 74th Annual Meeting of The Society of Rheology, Minneapolis, October, 2002.
76. M.T. Shaw, Y. An, A. E. Senador, PTM, "Issues With the Processing of Polymer Solutions into Nanofibers Using Electrospinning," 18th Annual Meeting, Polymer Processing Society, Guimãres Portugal, June 18, 2002.
75. C. Liu and P.T. Mather, "Thermomechanical Characterization of a Novel Series of Shape Memory Polymers," *SPE ANTEC* San Francisco, CA, May, 2002.
74. C.J. Lefaux, J.A. Zimmerlin, PTM, "Spatially Controlled Growth of Polyelectrolyte Multilayer Islands," *SPE ANTEC* San Francisco, CA, May, 2002.
73. C.J. Lefaux, B.-S. Kim, J.A. Zimmerlin, P.T. Mather, J.W. Baur, "Loading of Hydrogel "Stampers" with Polyelectrolytes and Deposition of Polymeric Multilayers," *MRS Fall Meeting Symposium BB: Optoelectronic Polymers*, Boston, November 2001.
72. C. Liu, S.B. Chun, P.T. Mather, and E.B. Coughlin, "Shape Memory Behavior of Modified Polycyclooctene," *MRS Fall Meeting Symposium EE: Electroactive Polymers*, Boston, November 2001.
71. I.A. Rousseau and P.T. Mather, "Factors Affecting Actuation Rate in Partially Neutralized Polyelectrolyte Gels," *MRS Fall Meeting Symposium EE: Electroactive Polymers*, Boston, November 2001.
70. H. Qin and P.T. Mather, "Optical Rheology of Nematic Bismaleimide Thermosets," *MRS Fall Meeting Symposium CC: Liquid Crystals*, Boston, November 2001.
69. A.-G. Cheong, A.D. Rey, and P.T. Mather, "Capillary instabilities in thin nematic liquid crystalline fibers," 73<sup>rd</sup> Annual Meeting of the Society of Rheology, Bethesda, MD, October 2001.

68. J. Wu, G.M. Kim, and P.T. Mather, "Rheology and morphology of rod/coil molecular composites," 73<sup>rd</sup> Annual Meeting of the Society of Rheology, Bethesda, MD, October 2001.
67. J. Pyun, K. Matyjaszewski, T. Kowalewski, P.T. Mather, S.B. Chun, and G.-M. Kim, "Synthesis of nanocomposite silsesquioxane materials using controlled radical polymerization," ACS National Meeting, Chicago, IL, August 2001.
66. G.-M. Kim, and P.T. Mather, "Nanoscale deformation processes in POSS-reinforced thermosets," ACS National Meeting, Chicago, IL, August 2001.
65. S.B. Chun, G.-M. Kim, and P.T. Mather, "POSS-Grafted Block Copolymers for Nanostructured Surfaces," ACS National Meeting, Chicago, IL, August 2001.
64. C. Liu, T.S. Haddad, H.G. Jeon, G.-M. Kim, and P.T. Mather, "Control of Shape Memory Response in Polymers via POSS Incorporation," ACS National Meeting, Chicago, IL, August 2001.
63. Christophe J. Lefaux, P.T. Mather, and Jeffery Baur "Hydrogel Contact Deposition of Polyelectrolyte Multilayers," Gordon Conference on Ion-Containing Polymers, Williams College, July 15-19, 2001.
62. Ingrid A. Rousseau, K.G. Ozkan, and P.T. Mather, "Actuation In Partially Neutralized Polyelectrolyte Gels," Gordon Conference on Ion-Containing Polymers, Williams College, July 15-19, 2001.
61. H. Qin and P.T. Mather, "Semiflexible Liquid Crystalline Thermosets," NERM 2001 ACS 30th American Chemical Society Northeast Regional Meeting June 24-27, 2001.
60. Christophe J. Lefaux, P.T. Mather, and Jeffery Baur, "Build-up of Polymeric Multilayered Films by Hydrogel Stamper," NERM 2001 ACS 30th American Chemical Society Northeast Regional Meeting June 24-27, 2001.
59. C. Lefaux, P.T. Mather, and J. Baur, "Contact Deposition of Polymeric Multilayers," SPE ANTEC, Dallas, TX (May 2001).
58. H. Qin and P.T. Mather, "Cure Characterization of Nematic Bismaleimide Thermosets," Society of Rheology Annual Meeting, Hilton Head, SC (Spring 2001).
57. H. Qin and P.T. Mather, "Nematic Bismaleimide Thermosets: Synthesis and Cure Characterization," AIChE Annual Meeting, Los Angeles, CA (Fall, 2000).
56. S.B. Chun and P.T. Mather, "Rheological Characterization of POSS-Grafted Copolymers," MRS Fall Meeting (2000).
55. A.E. Senador, Jr., M.T. Shaw, and P.T. Mather, "Electrospinning of Polymeric Nanofibers: Analysis of Jet Formation," MRS Fall Meeting Boston, MA (2000). Poster
54. S.B. Chun and P.T. Mather, "Nanostructures from POSS-Grafted Block Copolymer Precursors," MRS Fall Meeting, Boston, MA (2000). Poster
53. Xiaomei Fang and P.T. Mather, "Cure Characterization and Mechanical Reinforcement with POSS-Based Thermosets," MRS Fall Meeting, Boston, MA (2000).
52. P.T. Mather, C. Liu, H.G. Jeon, and T.S. Haddad, "Strain Recovery in Drawn POSS Hybrid Thermoplastics," International Congress on Rheology, Cambridge UK (Summer 2000).
51. P.T. Mather, H.G. Jeon, T.S. Haddad, "Thermosets Modified with Hybrid Inorganic/Organic Polyhedra," *ACS Spring National Meeting Poster* (March 2000).
50. P.T. Mather, S.B. Chun, J. Pyun, K. Matyjaszewski, and H.G. Jeon, "Synthesis and Microstructural Characterization of POSS-Based Triblock Copolymers Prepared Using Atom Transfer Radical Polymerization," *ACS Spring National Meeting Poster* (March 2000).
47. P.T. Mather and S.B. Chun, "Electromechanical Actuation of Encapsulated Polymer Hydrogels in an Electric Field," American Physical Society (March 2000).
46. J.W. Baur, M.F. Durstock, R.J. Spry, B. Taylor, P.T. Mather, and S.B. Chun, "Novel Fabrication of Electroactive Self-Assembled Films," Materials Research Society Fall Meeting (December 1999).
45. P.T. Mather, S.B. Chun, and P.J. Hood, "Toward Encapsulated Charged Hydrogels for Electromechanical Actuation" Materials Research Society Fall Meeting (December 1999).
44. P.T. Mather, H.G. Jeon, C.D. Han, and D.-O. Kim, "Flow-Induced Isotropic-Nematic Transition in Thermotropic Polymers of Varying Spacer Length" 71<sup>st</sup> Annual Society of Rheology Meeting, Madison, WI (October 1999).
43. P.T. Mather, D.S. Nagvekhar, H.G. Jeon, and L.-S. Tan, "New Aromatic Thermotropic Polyesters with Controlled Flexibility," International Symposium Honoring Ronald K. Eby, Akron, OH (May 1999).
42. T.S. Haddad, R.S. Stapleton, H.G. Jeon, P.T. Mather, J.D. Lichtenhan, and S. Phillips, "Nanostructured Hybrid Organic/Inorganic Materials: Silsesquioxane Modified Plastics" American Chemical Society National Meeting, Anaheim, CA (March 1999).
41. R. Spry, T. Dang, F. Arnold and P.T. Mather, "Low Dielectric Constant Polymers", Regional APS, 1999.

40. D.S. Nagvekar, P.T. Mather, Hong G. Jeon, and L.-S. Tan, "New Wholly-Aromatic Thermotropic Polyesters with Controlled Flexibility," Spring 1999 MRS Meeting, San Francisco, CA.
39. T.J. Bunning, P.T. Mather, W. Barnes, and P.J. Hood, "Mid-Wavelength IR (MWIR) Polarizers from Glassy Cholesteric Liquid Crystals," Spring 1999 MRS Meeting, San Francisco, CA.
38. Hao Jiang, Patrick T. Mather, Weijie Su, Hong G. Jeon, T.J. Bunning, "Highly Swollen Hydrogels: Rheology, Phase Behavior, and Microstructure," Spring 1999 MRS Meeting, San Francisco, CA.
37. Patrick T. Mather, Hong G. Jeon, C.D. Han, D.-O. Kim, "Ordering and Disordering of Thermotropic Polymers in Shear Flow" March Meeting of APS, Atlanta, GA (1999).
36. Eric Schrag, Benjamin Hsiao, Xuan Fu, Joseph D. Lichtenhan, Joseph Schwab, P.T. Mather, Miriam Rafailovich, Shouren Ge, Henry White, "Polyhedral Oligomeric Silsesquioxane (POSS) Nano-Reinforced Polyurethane (PU) Thin Films" March Meeting of APS, Atlanta, GA (1999).
35. P.T. Mather, H.G. Jeon, T.S. Haddad, and J.D. Lichtenhan, "Shape Recovery and Microstructure of POSS Hybrid Polymers," Fall 1998 MRS Meeting.
34. H.G. Jeon, P.T. Mather, and T.S. Haddad, "Shape Memory Effect in Inorganic-Organic Hybrid Polymers" 70<sup>th</sup> Annual Society of Rheology meeting, Fall 1998.
33. P.T. Mather, H.G. Jeon, C.D. Han, and S. Chang, "Effect of Spacer Length on the Response of Microstructure to Flow in Thermotropic Liquid Crystalline Polymers" 70<sup>th</sup> Annual Society of Rheology meeting, Fall 1998.
32. P.T. Mather, H.G. Jeon, C.-S. Wang, R.A. Vaia, J.J. Schwab, and J.D. Lichtenhan, "Functionally-Graded Polymer Films for Optical Mirrors," 1998 Annual Meeting of Optical Society of America.
31. R. Stapleton, T.S. Haddad, P.T. Mather, J.D. Lichtenhan, "Nanoreinforcements in High Molecular Weight Acrylic Copolymers," American Chemical Society National Meeting, Boston, MA (August 1998).
30. B.S. Hsiao, X. Fu, P.T. Mather, K.P. Chaffee, H.G. Jeon, H. White, M. Rafailovich, J.D. Lichtenhan, and J. Schwab, American Chemical Society National Meeting, Boston, MA (August 1998).
29. H. Jiang, W. Su, P.T. Mather, M. Brant, D. Tomlin, and T.J. Bunning, "Effect of Water in Hydrogels on Laser Damage," Summer 1998 ACS Meeting.
28. T.S. Haddad, H.G. Jeon, A. Romo-Uribe, J.D. Lichtenhan, "Thermoplastics Modified with Nanoscale Inorganic Macromers," Summer 1998 ACS Meeting.
27. T.D. Dang, P.T. Mather, M.D. Alexander, Jr., R.J. Spry, and F.E. Arnold, "Achieving High T<sub>g</sub> and Low Dielectric Constant Using Aromatic Benzoxazole Polymers," Summer 1998 ACS Meeting.
26. T.S. Haddad, Hank W. Oviat, J.J. Schwab, P.T. Mather, K.P. Chaffee, and J.D. Lichtenhan, "Polydimethylsiloxanes modified with polyhedral oligomeric silsesquioxanes: From viscous oils to thermoplastics," Spring 1998 ACS Meeting, Dallas, TX, Polymer Division.
25. J.D. Lichtenhan, T.S. Haddad, J.J. Schwab, M.J. Carr, K.P. Chaffee, and P.T. Mather, "The Next Generation of Silicon-Based Plastics: Polyhedral Oligomeric Silsesquioxane (POSS) Nanocomposites," Spring 1998 ACS Meeting, Dallas, TX, Polymer Division.
24. T.S. Haddad, P.T. Mather, H.G. Jeon, A. Romo-Uribe, A.R. Farris, and J.D. Lichtenhan, "Thermoplastics Modified with Nanoscale Inorganic Macromers," Spring 1998 MRS Meeting, San Francisco, CA.
23. J.D. Lichtenhan, T.S. Haddad, J.J. Schwab, K.P. Chaffee, and P.T. Mather, "Nanocomposite Plastics derived from Nanostructured POSS Chemical Technology," Spring 1998 MRS Meeting, San Francisco, CA.
22. J.J. Schwab, J.D. Lichtenhan, M.J. Carr, K.P. Chaffee, P.T. Mather, and A. Romo-Uribe, "POSS: Silicon-based Monomers and their Use in the Preparation of Hybrid Polyurethanes," Spring 1998 MRS Meeting, San Francisco, CA.
21. P.T. Mather, A. Romo-Uribe, and T.J. Bunning, "Flow Behavior of Cyclic Cholesteric Liquid Crystals with varying Cholesteric Pitch," Fall 1997 MRS Meeting, Boston, MA.
20. P.T. Mather, A. Romo-Uribe, T.S. Haddad, and J.D. Lichtenhan, "Viscoelasticity of Hybrid Styryl-based Polyhedral Oligomeric Silsesquioxane (POSS) Polymers," 69<sup>th</sup> Annual Society of Rheology Meeting, October 1997, Columbus, OH.
19. P.T. Mather, K.P. Chaffee, A. Romo-Uribe, A. Asandei, and V. Percec, "Rheological and Morphological Evolution During Thermal Annealing in the Biphase of a Thermotropic Polyether," March Meeting of the American Physical Society, 1997.
18. P.T. Mather, Angel Romo-Uribe, and C.D. Han, "In-situ Polarizing optical microscopy of a flow-Induced isotropic-nematic transition in a thermotropic Liquid crystalline polymer," 68<sup>th</sup> Annual Society of Rheology Meeting, February 1997, Galveston, Texas.
17. Angel Romo-Uribe, P.T. Mather, and C.D. Han, "Rheo-x-ray scattering of thermotropic LCP'S with flexible spacers in the main-chain," 68<sup>th</sup> Annual Society of Rheology Meeting, February 1997, Galveston, Texas.



16. Angel Romo-Uribe, P.T. Mather, K.P. Chaffee, and C.D. Han, "Molecular and Textural Ordering of Thermotropic Polymers in Shear Flow," Fall 1996 MRS Meeting, Boston, MA.
15. P.T. Mather and H.R. Stuber, "A Novel Rheological Microscope for the Study of Thermotropic Melts," Spring 1996 MRS Meeting, San Francisco, CA.
14. D.C. Martin, G. Spillman, T. Jiang, K. Chaffee, and P.T. Mather, "Synthesis, Characterization, and Processing of Thermally Crosslinkable Thermotropic Copolyesters," Spring 1996 ACS Meeting, New Orleans (*Invited*).
13. R.G. Larson and P.T. Mather, "Flow Properties of Liquid Crystals". NATO Advanced Studies Institute "Theoretical Challenges in the Dynamics of Complex Fluids". March 1996 (*Invited*).
12. P.T. Mather, K.P. Chaffee, T.S. Haddad, and J.D. Lichtenhan, "Synthesis and Characterization of a Semiflexible Thermotropic LCP End-capped with POSS-Macromers," Spring 1996 ACS Meeting, New Orleans.
11. P.T. Mather, Janelle Gunther, Ned Thomas, and Nino Grizzutti, "Steady and Oscillatory Shear Flow of a Semiflexible Thermotropic LCP Following Thermal Clearing," 67th Annual Society of Rheology Meeting, October 1995.
10. P.T. Mather, W.R. Burghardt, "Dynamic Conoscopy of Liquid Crystals for Measuring Leslie-Ericksen Parameters," 67th Annual Society of Rheology Meeting, October 1995.
9. P.T. Mather and R.G. Larson, "Disclination Creation and Behavior in Shear Flow of 5CB and 8CB," MRS Fall Meeting, November 1994.
8. P.T. Mather, Sukmin Lee, and D.S. Pearson, "Phase Behavior and Rheology of Blends Containing Polycarbonate and a Thermotropic Polyester," 66th Annual Society of Rheology Meeting, October 1994.
7. W.R. Burghardt, P.T. Mather and D.S. Pearson, "Structural Response of Nematic Liquid Crystals to Weak Transient Shear Flows," March APS Meeting, March 1994.
6. P.T. Mather and D.S. Pearson, "A Combined Video Microscope and Controlled Environment Rheometer," Spring ACS Meeting, April 1992.
5. P.T. Mather and D.S. Pearson, "Textural Dynamics Following Simple Shear of a Lyotropic LCP," Annual AIChE Meeting, November 1991.
4. P.T. Mather and D.S. Pearson, "Rheological and Optical Characterization of a Liquid Crystalline Polymer," 63rd Annual Society of Rheology Meeting, October, 1991.
3. P.T. Mather and S.R. White, "Ultrasonic Absorption and Dispersion in Curing Epoxy," International Conference on Composite Materials, Spring 1991.
3. S.R. White and P.T. Mather, "Ultrasonic and Thermal Cure Monitor of an Epoxy Resin," 23rd Annual SAMPE Technical Conference, Fall 1990.
2. P.T. Mather and S.R. White, "Simultaneous Measurement of Relaxation Behavior and Density in Curing Polymers Using Wide-Band Ultrasonics," Society of Plastics Engineers RETEC, Fall 1990.
1. P.T. Mather and H.T. Hahn, "Acoustic Characterization of Epoxy Curing," Fiber-Tex '89, Fall 1989.

## **University Teaching**

### Syracuse University

Polymer Physics	Spring 2014
IGERT: Open Problems in Soft Matter (Graduate)	Spring 2013, Spring 2014
Heat and Mass Transport (BEN/CEN 341)	Spring 2011, Spring 2012
Complex Fluids	Spring 2010
Fluid Transport (BEN/CEN 333; Undergraduate)	Fall 2009-2013
Rheology and Polymer Processing (CEN 761; graduate level)	Fall 2008
Polymer Science and Engineering/Biopolymers (CEN561/BEN741)	Spring 2008, Spring 2009
Critical Analysis of Polymeric Biomaterials Literature (BEN600)	Spring 2008

### Case Western Reserve University

Surfaces, Interfaces and Colloids (EMAC 690)	Spring 2005
Thermodynamics, Fluid Dynamics, Heat and Mass Transfer (ENGR 225)	Spring 2006, 2007
Introduction to Fundamentals and Practice of Rheology (EMAC 375/475)	Fall 2006

### University of Connecticut

Introduction to Polymers (undergraduate, CHEG 256)	Spring 2000, Spring 2001
Polymer Physics (graduate, CHEG 351)	Fall 2000, Fall 2001
Chemical Engineering Thermodynamics (undergraduate, CHEG 211)	Spring 2001, 2002, 2003

Materials Engineering and Society (undergraduate, team, MMAT 100)	Fall 2000, Fall 2001
Surfaces, Interfaces, and Colloids II (graduate <i>new</i> CHEG 320)	Fall 2002
Transfer Operations I (undergraduate, CHEG 223)	Fall 2003
Chemical Engineering Laboratory (CHEG 239W)	Spring 2004

## University and External Service

### Syracuse University

Undergraduate Best Practices Committee, Engineering and Computer Science	Spring 2013-Present
Faculty Council, LCS College of Engineering and Computer Science (chair-elect)	Fall 2012 - Present
Committee Chairperson, LCS College Strategic Planning, Platform 1	September 2011-Spring 2013
Advisor, Syracuse University Ping Pong Club	January 2012-present
Advisor, Syracuse University Badminton Club	Sept 2011-present
Advisor, Syracuse University Indoor Hockey Club	Sept 2011-present
Advisor, Syracuse University Wrestling Club	Sept 2009-present
Seinfeld Faculty Fellowship Selection Committee (University-wide)	Spring 2009
Syracuse Biomaterials Institute, <i>Director</i>	Fall 2007-present
LCS College of Engineering, Committee on Academic Affairs, <i>Chairman</i>	Fall 2007-Spring 2010
BMCE Promotion and Tenure Committee <i>Chairman</i>	Fall 2007-Spring 2010
BMCE Graduate Committee	Fall 2007-present
LCS College of Engineering Search Committee for Director of Development (successful)	Summer 2008
BMCE Search Committee (successful hiring of two asst. prof. and chairman) <i>Chairman</i>	Fall 2007-Spring 2008
Physics Search in Biomaterials (successful assistant professor hire)	Fall 2007-Spring 2008
Chemistry Search in Biomaterials (successful assistant professor hire)	Fall 2007-Spring 2008

### Case Western Reserve University

Tau Beta Pi Faculty Advisory Board	Fall 2006-Spring 2007
Macromol. Sci. Eng. Undergraduate Curriculum Committee	Fall 2004-Spring 2005
Macromol. Sci. Eng. Undergraduate Curriculum Committee, <i>Chairman</i>	October 2006-Spring 2007
Macromol. Sci. Eng. Safety and Facilities Committee	November 2006-Spring 2007
Macromol. Sci. Eng. Graduate Committee, <i>Chairman</i>	Spring 2005-November 2006
<i>ad hoc</i> Nanotech Planning Committee (University-Wide)	Summer 2005-Summer 2006
School of Engineering Graduate Committee, <i>Chairman</i>	Fall 2005-Fall 2006
Advisor, Chi Alpha Christian Fellowship, Faculty Advisor	Spring 2007
Society of Plastics Engineers, Faculty Advisor	Spring 2007

### University of Connecticut

Chemical Engineering Faculty Search Committee (Fuel Cells)	Fall 2003-Fall 2004
Connecticut Transportation Institute Steering Committee	Fall 2003-Spring 2004
Conflict-of-Interest University-Wide Committee	Fall 2003-2006
Institute of Materials Science Faculty Advisory Board	Spring 2003-Spring 2004
DaVinci Program (High School Engineering) Participant	Summer 2001, 2002
American Institute for Chemical Engineers Student Chapter Advisor	Summer 2001-Spring 2004
Institute of Materials Science Building Committee	Fall 2000-Spring 2002
Institute of Materials Science Safety Committee	Spring 2002-present
Polymer Program Graduate Admissions Committee.	Fall 1999 – Fall 2000
Polymer Program Faculty Search Committee.	Fall 1999-2002
Chemical Engineering Faculty Search Committee	Fall 2000-2002
Chemical Engineering ABET Subcommittee on Assessment.	Fall 1999
Chemical Engineering Departmental ABET committee.	Spring 2000 – Spring 2004
Chemical Engineering Laboratory Safety committee	Fall 1999 – Spring 2004
Committee member for Frontiers in Undergraduate Research.	Spring 2000 – 2001
Advisor for the University of Connecticut Honors Program.	Fall 1999 – Spring 2004
Advisor for Summer Research Projects at Rogers Corporation.	Summer 2000

## Students and Researchers Advised

### *Visiting Professors*

Prof. Young-Wook Chang (Hanyang University)	8/2002 – 8/2003
Prof. Jae-Whan Cho (Konkuk University)	8/2003 – 8/2004

### *Postdoctoral Researchers*

Dr. Angel Romo-Uribe	2/1996-11/1998	<i>ConAgra</i>
Dr. Seung B. Chun	9/1999-8/2001	<i>V.P. Samsung</i>
Dr. Xiaomei Fang	1/2000-9/2000	<i>GE Advanced Materials</i>
Dr. Fatma Vatansever	9/2000-4/2001	<i>Unknown</i>
Dr. Byoung-Suhk Kim	8/2001 – 8/2003	<i>Professor, Chonbuk National University</i>
Dr. Pichet Rojanapitayakorn	11/2001 – 6/2003	<i>Thai Polyethylene Co., Ltd.</i>
Dr. Qing Ge	12/2002 – 3/2003	<i>TyRx Pharma, Inc.</i>
Dr. Izabela Galeska	2/2003 – 8/2003	<i>Merial, Inc.</i>
Dr. Myung-Seob Khil	10/2003 – 6/2004	<i>Chonbuk University</i>
Dr. Haihu Qin	9/2004 – 1/2006	<i>Milliken and Company</i>
Dr. John Bobiak	2/2006 – 8/2006	<i>Bristol-Meyers Squibb (from 8/2006)</i>
Dr. Kyungmin Lee	8/2005 – 8/2008	<i>Air Force Research Lab</i>
Dr. Hosouk Cho	8/2006 – 8/2007	<i>LG Cable Ltd</i>
Dr. Jian Wu	1/2008 – 12/2009	<i>University of Pittsburgh</i>
Dr. Kun Li	2/2008 – 8/2008	<i>Polymerix Corp</i>
Dr. Xiuling Xu	3/2009 – 6/2010	<i>Lovelace Respiratory Research</i>
Dr. Hanbing Wang	1/2010 – 1/2011	<i>SUNY/IT Utica</i>
Dr. Kazuki Ishida	1/2010 – 12/2012	いしだかずき
Dr. Eric Finkelstein	1/2011 – present	
Dr. Boni Alvarado	1/2012 – 10/2012	<i>Professor</i>
Dr. Ryan Tappel	4/2013 – present	
Dr. Wenyang Pan	8/2013 – present	

### *Graduate Students*

Christophe Lefaux	Graduated PhD May 2004	<i>Hollingsworth &amp; Vose Company</i>
Haihu Qin	Graduated PhD August 2004.	<i>Milliken Corp.</i>
Changdeng Liu	Graduated PhD August 2004	<i>Ethicon Corp.</i>
Tony Senador (w/ M.T. Shaw)	Graduated with MS August 2005	
Ingrid Rousseau	Graduated PhD December 2004	<i>Senior Researcher, General Motors</i>
Jian Wu	Graduate PhD August 2005	<i>Postdoc at Univ. Pittsburgh</i>
Jin-Hyun Lee (w/ M.T. Shaw)	M.S. Graduate May 2004	<i>Graduate Student at GA Tech</i>
Cheryl Campo	Graduated PhD August 2006	<i>Law Student, Univ. MD</i>
Sun-Hwa Lee	2003-04, Visiting Grad. Student from Konkuk University	
Timothy Marsh	Graduated PhD December 2008, Macromolecular Science and Engineering	<i>PPG</i>
Pritesh Patel	Graduated PhD August 2007, Macromolecular Science and Engineering	<i>Chevron Oronite Corp.</i>
Taekwoong Chung	Graduated PhD January 2009 Macromolecular Science and Engineering	<i>Samsung Corporation</i>
Qiongyu Guo	Defended PhD August 2009 Macromolecular Science and Engineering	<i>Postdoc, Johns Hopkins University</i>

Pam Knight	Defended PhD July 2009 Macromolecular Science and Engineering; <i>Research Project Leader, AkzoNobel</i>
Kelly Burke	Defended PhD March 2010 Macromolecular Science and Engineering; <i>Postdoc, Tufts University</i>
Xiaofan Luo	Graduated MS August 2007 (Case Western), Bioengineering PhD 2010 <b>All-University Doctoral Prize Winner</b> <i>PolymMaker, President and Co-Founder</i>
Erika Rodriguez	Defended PhD August 2012, Mechanical and Aerospace Engineering <i>Engineer, NASA Ames</i>
Xinzhu Gu	Defended PhD August 2012, Bioengineering, <i>Postdoc Univ Pittsburgh</i>
Ifeanyi Onyejekwe	Defended PhD August 2012, Bioengineering <i>FDA</i>
Pine Yang	6 <sup>th</sup> year PhD Bioengineering
Richard Baker	5 <sup>th</sup> year PhD Bioengineering (co-advised by James Henderson)
Amir Torbati	Defended PhD January 2015, Bioengineering <b>All-University Doctoral Prize Winner</b> <i>Postdoc, CU Denver</i>
Chris Iversen	Defended MS, December 2012
Marta Alonso	Visiting PhD Student, Insitituto de Ciencia y Tecnologia de Poimeros (CSIC), Madrid Spain 2012
Hossein Nejad	5 <sup>th</sup> year PhD Bioengineering
Erin McMullin	4 <sup>th</sup> year PhD Bioengineering (SU Fellow)
Melodie Torres	4 <sup>th</sup> year PhD Bioengineering (STEM Fellow)
Derek Weed	Defended, MS Chemical Engineering, May 2014 <i>BA SF</i>
Matt Kuc	2 <sup>nd</sup> year MS Bioengineering
Che Tan	2 <sup>nd</sup> year MS Bioengineering
Ariel Ash-Shakoor	3 <sup>rd</sup> Year PhD Bioengineering (IGERT Fellow; NSF GRFP)
Wenbin Kuang	3 <sup>rd</sup> Year PhD Chemical Engineering
Shelby Buffington	2 <sup>nd</sup> Year PhD Bioengineering (IGERT Fellow)

*Undergraduate Students (91 to date)*

Scott Kennedy	Fall '99, Spring '00
John Miller	Spring '00
Anderson Costa	Fall '00
Kate Dabrowski	Summer '00
Nolwenn Lebouch	Summer '00 (french exchange student)
Jody Johnson	Fall '00
Frank Sun	Summer 2000, 2001 (NSF REU, now at UNC)
Kimberly Ozkan	Summer '01, Now at Unilever
Andrew Lim	Spring '02, Now at UCHC Medical School
Jessica Zimberlin	Summer '01, Fall '01, Spring '02
Geriel Ettienne-Modeste	Summer '02, Now PhD Student at Univ. Maryland
Marjorie-Llano-Calderon	Summer '02, Summer '04
Bryan Chakulski	Fall '02, Spring '03, Now at UTC Fuel Cells
Kelly Burke	Summer '03, Fall '03, Fall '04
Marta Zygmunt	Summer '03
Joe Bernacki (w/ Shaw)	Summer '03, Fall '03
Aaron Smith (Miss. State)	Summer '03
Fatima Mūnoz (UConn)	Fall '03, Spring '04

Joseph Alabek (Case)	Fall '04
Craig Schenker (Case)	Fall '04, Spring '05, Fall '05
Dana Duan	Spring '05
Minakshee Mohanty	Spring '05
Sarah Rasmussen	Spring '05, Fall '05
Nora Sennett (Columbia)	Summer '05
Will Jackson (Morgan State)	Summer '05
Jessica Eckart	Fall '05, Fall '06, Spring '07
Nirmal Ellickal	Spring '06
Josh Hamilton	Spring '06
Jane Spikowski	Spring '06
Dyron Stephens (Fisk)	Summer '06
Stephanie Trittschuh	Summer '06
Alyssa Master	Summer '06
Nora Sennett (Columbia)	Summer '06
Manik Aggarwal	Fall '06, Spring '07
Sonia Merritt (Drug-release coatings)	Fall '06, Spring '07
Ian Cowhey (Patterning modulus)	Spring '07
Nick Moon (Rheology)	Spring '07, Summer '07
Jackie Downing (Microrheology)	Spring '07
Jerica Bell (PCO surface modification)	Summer '07
Tom Martz (Electrospun elastic webs)	Summer '07
Steven Vesole (Controlled drug delivery)	Summer '07
Brittany Harlow (Biodegradable Polymers)	Fall '07
Chris McGann (Biodegradable Polymers)	Fall '07-Summer '08
Rana Fashho (Electrospraying of Coronary Stent Coatings)	Fall '07
Tejas Rane (Biodegradable Nanocomposites)	Spring '08
Shaun Miller (Passive Temperature Control with Phase-Change Materials)	Spring '08, Summer '08
Stephanie Dorta-Quinones (PCO-Based SMP Devices)	Summer '08
Rebecca Lyons (Mechanics of Soft Biomaterials)	Summer '08, Fall '09, Spring '09
Kathryn Lauber (Self-Healing Polymers)	Summer '08, Fall '09, Spring '09
Mariya Ryabushkina (Synthesis of Biodegradable Polymers)	Summer '08, Fall '09, Spring '09
Karan Shertukde (Contact Angle Measurements)	Summer '08
Elizabeth Matessino (Biomineralization)	Summer '08, Fall '09, Spring '09
Nilesh Maheshwari, IIT Kharagur (Oriented Scaffolds)	Summer '08
Christine DePompeo (Honors Thesis, Liquid Crystalline Elastomers)	Fall '08 – present
Andrew DiOrio (Functionally Graded SMP)	Summer '09, Fall '09
Erica Brenner (Polymers for Controlled NO Release)	Summer '09, Fall '09
Bing Xu (Biostable Polyurethane Characterization)	Fall '09
Kathryn Wolcott (Antimicrobial Webs)	Fall '09, Spring '10
Camilla Nix (Temperature Sensitive Release of Furanone)	Spring '10
Derek Weed (Anisotropic Elastomers)	Spring '10
Larry Levy (Electrically Stimulated Self-Healing Polymer)	Spring '10, Fall '10
Noora Chaar (Biodegradable SMP Hydrogels)	Summer '10
Ellen Benn (Chemorheology of LC Epoxies)	Summer '10, Fall '10
Yong Chen (Acoustic Absorption in Polymer Networks)	Summer '10, Fall '10, Fall '11, Spring '12
Adriana Svenjak (Biodegradable SMP Hydrogels)	Fall '10
Susan Furest (Controlled Nitric Oxide Release)	Spring '11
Bianca Joachim (Vapor-releasing nanostructured media)	Spring '11
Sam Brenner (Shape Memory Polymer Composites)	Spring '11 and Fall '11

Alex Judge (Shape Memory Paper)	Spring '11 and Fall '11
Sarah Sandock (Active Cell Culture)	Summer, '11
Jordan Mancuso (Shape Memory Wrinkles; SMP Actuator)	Fall '11, Spring '12, Fall '12, Spring '13
Danny Rich (Polymer Nanocomposites for Barrier)	Fall '11
Giselle Schlegel (Microfluidic Cell-Material Interaction)	Fall '11
James Sutton (Triple-Shape Polymeric Composites)	Fall '11, Spring '12
Sabrina Kowalski (Self-Healing Coatings; SMP Actuator)	Fall '11 – Spring '13
Samatha Poirier (Scent-Releasing Fibrous Webs)	Spring '12
Wendy Feinstein (Active Cell Culture, REU)	Summer '12
Julia Tumbic (Vascular Graft Material Development)	Fall '12, Spring '13
Mileysa Ponce (Epoxy-Based Hydrogel SMPs)	Fall '12, Spring '13
Emily Mesing (Shape Memory Paper)	Fall '12
Jaimee Robertson (Anisotropic Shape Memory Composites)	Fall '12, Spring 13
Margaret Geary (Reversible Water-Based Actuation)	Summer 2013 (REU)
Arman Shahriar (Mixed Wrinkles via Surface Shape Memory)	Summer 2013 (REU)
Alyssa Shapiro (Effect of modulus on Cell-Material Interactions)	Summer 2013 (REU)
Regina Kuria (Layer-by-Layer Coating of SMPs)	Summer 2013; Fall 2013
Daniel Arens (Shape Memory Medical Device)	Summer 2014
Nate Chapin (Anisotropic Hydrogel)	Summer 2014
Sarah McCandless (Multishape Memory Composites)	Summer 2014
Derek Loh (Complex Wrinkles for Cell Culture)	Summer 2014
Timothy Sullivan (Shape Memory Agar)	Summer 2014
Jessican Deschamps (Wrinkles and Wound Healing)	Summer 2014

*High School Teachers and Students*

Mr. Greg Ostopovich	Summer '01
Mrs. Kathy Fischer	Summer '02
Mrs. Donna Boivin	Summer '02
Michael Sasseville (student)	Summer '02
Dr. Elizabeth Christophy	Summer '03
Mrs. Kathy Fischer	Summer '03
Alison Oreh	Fall '06-Summer '07 (continuously)
Jason Mather	Summer 2008
Maria Minstkovsky	Fall 2008-Present
Ryan Mather	Summer 2009-Fall 2010
Ioan Gitsov	Summer 2011