Valerie Sheares Ashby

Curriculum Vitae

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I. EDUCATION

Undergraduate:	B.A., Chemistry, University of North Carolina at Chapel Hill (8/88)
Graduate:	Ph.D., Chemistry, University of North Carolina at Chapel Hill (5/94)

II. PROFESSIONAL EXPERIENCE

7/15-present	Dean, Trinity College of Arts & Sciences, Duke University
7/12-6/15	Chair, Department of Chemistry, University of North Carolina at Chapel Hill
7/14-6/15	Faculty Director, UNC-CH Graduate School, Initiative for Minority Excellence (IME)
7/07-6/12	Bowman and Gordon Gray Distinguished Term Professor of Chemistry, University of North Carolina at Chapel Hill
7/07-6/15	Professor, University of North Carolina at Chapel Hill *Synthesis of Functionalized Biomaterials – Materials for Drug Delivery, Gene Therapy and Templated Cell Growth Applications* *Synthesis of High Performance Polymers via Nickel Catalysis;* *Polymerization of Polar, Functionalized Diene Elastomers*
5/07-6/15	Director, UNC National Science Foundation Alliance for Graduate Education and the Professoriate (AGEP) and Research Education Support (RES) programs
8/05-5/07	Vice Chair Undergraduate Studies, University of North Carolina at Chapel Hill, Department of Chemistry
8/03-7/07	Associate Professor, University of North Carolina at Chapel Hill
8/03-1/04	Sabbatical Leave, Massachusetts Institute of Technology, Cambridge, MA (Professor Robert Langer)
8/02-7/03	Associate Professor, Iowa State University, Department of Chemistry, Ames, Iowa.
1/96-7/02	Assistant Professor, Iowa State University, Department of Chemistry, Ames, Iowa.
9/94-12/95	National Science Foundation Postdoctoral Fellow, NATO Postdoctoral Fellow, Johannes Gutenberg University of Mainz

	Institute for Organic Chemistry, Mainz, Germany. *Synthesis of ABC Block Copolymers.* Advisor: Professor Reimund Stadler (deceased)
5/93-8/93	Visiting Scientist, Eastman Chemical Company, Kingsport, Tennessee. *Examination of the Role of Catalysts in Color Body Origin in Poly(ester amide)s.*
5/92-8/92	Visiting Scientist, IBM, Almaden Research Center, San Jose, California. *Synthesis of Thiophene-Containing Poly(ether imide)s.*
1/91-8/94	Research Assistant, University of North Carolina at Chapel Hill. Ph.D. Dissertation: *Synthesis and Characterization of Thiophene-Based Poly(arylene ether ketone)s and Poly(arylene ether sulfone)s.* Advisor: Professor Joseph M. DeSimone
9/89-12/90	Teaching Assistant, University of North Carolina at Chapel Hill. Instruction of undergraduate analytical and introductory organic synthesis laboratories.

III. HONORS

1. Academic Service Award (NAACP) – 1/14
2. UNC General Alumni Association – Faculty Service Award 12/13
3. Johnston Teaching Award – UNC Chapel Hill 4/13
4. Order of the Golden Fleece – member 3/12
5. Tau Sigma Honor Society – honorary member 5/10
6. National Science Foundation American Competitiveness and Innovation Fellow (2/10)
7. UNC Chapel Hill Student Undergraduate Teaching Award (SUTASA) (4/09)
8. J. Carlyle Sitterson Freshman Teaching Award – UNC Chapel Hill 2008
9. UNC Faculty Marshall – (6/08 - present)
10. Bowman and Gray Distinguished Term Professorship (7/07-6/12)
11. Honored by the American Chemical Society in Chemical and Engineering News (8/02)
12. Institute for Defense Analysis, Defense Science Study Group (1/04-12/05)
13. President's and Provost's Award for Iowa State University (5/02)
14. Iowa State University, College of Liberal Arts and Sciences Master Teacher (8/01)
15. Outstanding Professor- given by the Department of Chemical Engineering undergraduate students (5/01)
16. Outstanding Faculty Member – given by the Interfraternity and Pan-Hellenic Council at Iowa State University (5/1)
17. Iowa State University Teacher of the Year, College of Liberal Arts and Sciences (4/01)
18. 3M Young Faculty Award (3/99, 4/00, 4/01)
19. Early Excellence in Research Award, Iowa State University (4/00)
20. Early Excellence in Teaching Award, College of Liberal Arts and Sciences, Iowa State (4/99)
21. Nominated for Iowa State University Teacher of the Year, College of Liberal Arts and Sciences (4/97, 4/98, 4/00)

22. DuPont Young Faculty Award (1/98-12/00)
23. National Science Foundation Faculty Early Career Development Award (1/98-12/02)
24. 1995 ACS Polymeric Materials: Science and Engineering and Polymer Chemistry Division Sherwin Williams Student Award (Presented 3/96)
25. National Science Foundation Postdoctoral Fellowship in Chemistry (2/95-1/96)
26. NATO/National Science Foundation Postdoctoral Fellowship in Science (9/94-2/95)
27. Kodak Corporate Research Fellowship (8/91-5/94)

IV. SERVICE

University Service

1. Research Advisory Council - Vice Provost for Research Office (8/14 -)
2. Nominating Committee, Faculty Council (1/15-3/15)
3. Dean's Advisory Board (College of Arts and Sciences) – (7/13 -)
4. Dean Karen Gil Review Committee – (1/13 – 11/13)
5. UNC Chancellors Scholars Steering Committee (7/13 -)
6. UNC Chancellor's Search Committee (9/12 – 4/13)
7. Morehead Cain Scholarship Committee, Member (3/08 – 2/14)
8. UNC Tanner Graduate Student Teaching Award Selection Committee, Member (9/11 - 10/11)
9. UNC Bowman and Gordon Gray Distinguished Term Professorship Selection Committee, Member (10/11 - 2/12)
10. College of Arts and Sciences Faculty Diversity Task Force Committee, Chair (1/11- 6/11)
11. UNC Institutional Conflict of Interest Committee, Chair (7/10 – 6/12)
12. UNC General Alumni Association Board of Directors, Faculty Representative (5/10 - 5/11)
13. Arts and Science Foundation Board of Directors, Faculty Representative (10/08 – 8/12)
14. UNC Faculty Executive Committee, Member (7/07 - 6/10)
15. Search Committee: UNC-Chapel Hill Provost, Member (Fall 09/Spring 10)
16. Search Committee: Dean of the Graduate School, Member (Fall 07/Spring 08)
17. Search Committee: Director of the Institute of African American Research, Member (Fall 07/Spring 08)
18. Search Committee – Director Recruitment and Retention for the Graduate School, Member (5/07 – 9/08)

Departmental Service

1. Facilities Committee Chair – (7/13 – 1/14)
2. Search Committee: Applied Sciences Faculty Search, Member (5/11-10/11)
3. Strategic Planning Committee, Member (8/10-6/12)

4. Search Committee Nanomedicine/Chemistry Faculty, Chair (7/10-1/11)
5. External Review Committee, Polymer/Materials Representative (2009)
6. Grievance/EEOC, Member (8/08-7/09)
7. Undergraduate Studies Committee, Chair (8/05-8/07), Member (8/09-7/10)

Professional Organizations

1. American Association for the Advancement of Science – member
2. American Chemical Society Member: Division of Polymer Chemistry (Assistant Secretary – 2000-2002) and Division of Polymeric Materials Science and Engineering
3. National Organization of Black Chemists and Chemical Engineers (member) and UNC-Chapel Hill Chapter (advisor) – 2005-2008
4. Faculty co-founder of new UNC Chapter of National Organization of Black Chemists and Chemical Engineers (9/05)
5. American Chemical Society, Ames Local Section, Chair (1/99-12/99)

Proposal/Journal Reviews/Panels

1. Florida International University, Department of Chemistry Reviewer (2/15)
2. Howard Hughes Medical Institute Reviewer - Undergraduate Science Education Competition for Research Universities (12/13)
3. University of South Florida, Department of Chemistry Review (11/13)
4. National Science Foundation Panel, Biomaterials (DMR) (2/13)
5. National Science Foundation Panel, Materials Research Panel (12/11)
6. AAAS Panel Reviewer for King Abdulaziz City of Science and Technology (KACST), Saudi Arabia
7. National Science Foundation Nanostructured Polymers and Composites Panel (5/11)
8. American Association for the Advancement of Science – Research Competitiveness Program Reviewer (7/09, 6/11)
9. National Science Foundation Materials Research Science and Engineering Center (MRSEC) Reviewer (9/06, 3/08)
10. National Institutes of Health Biomaterials Panel (3/08)
11. National Science Foundation Biomaterials Panel (2/08)
12. National Science Foundation Collaborative Research in Chemistry Panel (9/06)
13. National Science Foundation Interdisciplinary Research Panel (Chemistry) (4/05)
14. National Science Foundation Career Award Panel Division of Materials Research, Polymers (2004, 2005, 2010)
15. Journal Reviewer – Journal of the American Chemical Society, Macromolecules, The Journal of Polymer Science (Pt A), Biomacromolecules, Polymer, Macromolecular Chemie, Advanced Materials
16. ACS Petroleum Research Fund Proposal Reviewer

Other Service/Activities

1. Keynote Speaker, HHMI Meyerhoff, Chancellor's Science Scholars, Millennium Scholars Program – (10/14)
2. Keynote Speaker, HHMI EXROP program – (5/14)
3. UNC NSF MIRT Workshop Leader – Mentor/Mentee Relationships in Graduate School (7/14)
4. Speaker, NCSU, IMSD program for underrepresented graduate students, "The Imposter Syndrome", (3/10, 4/11, 3/14)
5. HHMI Diversity Workshop – UNC (11/13)
6. Speaker, UNC Graduate School – "Women in Academia" (10/13)
7. UNC NSF MIRT Workshop Leader – Mentor/Mentee Relationships in Graduate School (7/13)
8. UNC CHANL Judge, Scientific Art Competition (4/13)
9. Keynote Speaker, Elizabeth City State University, Undergraduate Research Day (4/12)
10. Speaker, UNC Chemistry Majors, Jr/Sr banquet (11/11)
11. Panel Presenter, Carolina Women's Center, Careers for Women in the Sciences (10/11)
12. Materials Research Society, poster competition judge (7/11)
13. Panel Presenter, Carolina Postdoctoral Program for Faculty Diversity, "The Path to a Job in Academia" (6/11)
14. Panel Presenter, Arts and Sciences Foundation Women's Leadership Council (2/11)
15. Presenter, Preparing Future Faculty Workshop for Minority Graduate Students, Howard University (9/10)
16. Speaker, Winston Salem State University, HBCU-UP Summer Research Program (6/10)
17. Speaker, Fayetteville State University, Minority Research Program (7/10)
18. Preparing Future Faculty Workshop for Minority Graduate Students in Material Science, UMass Amherst (6/10)
19. Keynote Speaker, Office of Postdoctoral Affairs Orientation, (2/10)
20. UNC December Graduation Speaker (12/08)
21. Workshop Presenter, Alliance Day 2009 Conference, "The Imposter Syndrome"
22. Speaker, Training Initiative in Biomedical and Biological Sciences luncheon (10/08)
23. UNC Sister Circle Speaker– "Responsibilities and Responses of Women in Academia" (2/08)
24. Workshop Presenter, ACS sponsored "Life After graduate School" (5/07)
25. Speaker, Academic Achievement Ceremony, UNC Office of Student Counseling (4/07)
26. Science Spectrum Organizer, "Addressing Biological Questions with Chemistry", UNC High School Recruitment Program (3/07)
27. High School Student Recruitment presentation and lab demonstrations (11/06, 9/05)
28. Workshop Presenter, UNC Summer Pregraduate Research Experience (SPGRE) (7/05)

29. Workshop Presenter, UNC Freshman Visitation Weekend (8/04)

30. Speaker, Summer Pregraduate Research Experience (SPGRE) closing program (8/04)

31. Workshop Presenter: Project Uplift, UNC-CH (6/04)

32. Speaker: Science Bound Achievement Banquet (5/03)

33. Speaker: PIPELINES (Program in Pursuit of Excellence and Learning in Engineering and Science) (7/26/01)

34. Speaker/Facilitator, Science Bound Program (10/28/00)

35. Visiting Minority Scholar, University of Wisconsin, Eau Claire (10/16/00-10/20/00)

    taught 4 classes (organic chemistry, chemical education, freshman chemistry and industrial chemistry); facilitated a McNair Scholars workshop; presented university and chemistry department research lectures

36. Freshman Orientation Workshop Facilitator. Title: Reality Works (8/18/00).

37. Mentor: PIPELINES (Program in Pursuit of Excellence and Learning in Engineering and Science) (5/00-8/00)

38. Consultant: Chevron Phillips (1999-2003)

39. Mentor: McNair Scholars Program (1999-2003)

40. Vision 2020 Workshop participant, sponsored by DOE, NSF, NIST, Denver, Colorado (9/29/99)

41. Keynote Speaker, Program for Women In Science and Engineering Summer Interns (8/99)

42. Keynote Speaker, Program for Women In Science and Engineering Summer Interns (8/98)

43. Speaker, Early Outreach Program for 8th grade minority students focused on science and math (7/8/98)

44. Speaker, Early Success Program for Minority Freshmen students (4/22/98)

45. Panelist, Undergraduate Research Experience (Work Study Program) for Minority Student Affairs (3/98)

46. Judge, Ames Lab Science Bowl (3/97)

47. Mentor:, McNair Scholars Program, Women In Science and Engineering Program, and EXCELLE Liberal Arts and Sciences Program for Minority Freshman (1997-98)

48. Speaker, Science Bound Program (VEISHEA) (4/97)

49. Panelist, Women in Science and Engineering (3/97)

50. Keynote Speaker, Career Conference for Iowa High School Girls Interested in Engineering, Mathematics, Science and Technology (10/15/96)

51. Keynote Speaker, Program for Women In Science and Engineering Summer Interns (8/1/96)

V. RESEARCH PROGRAM

Present UNC Graduate Students

1. Sara Turner – (8/11 -), 4th Year, UNC Impact Award for Graduate Research
2. Katelyn Houston – (8/12 -), 3rd Year

3. Rufai Ibrahim – (8/13 -), 2nd Year
4. Yung Wang – (8/13 -), 2nd Year
5. Nandhini Ranganathan (8/13 -), 2nd Year

Present UNC Undergraduate Students

1. Stephanie Liffland – (8/14 -)
2. Linden Allison (5/14-7/14), UNC MIRT REU

Previous UNC Research Group

Postdoctoral Associates.

1. Dr. Charles Jones – (9/04-3/06), University of North Carolina at Chapel Hill
   Research Topic – "Fluorinated High Performance Polymers"
   Presently employed with Syngenta, Greensboro, NC

UNC Theses.

1. Anne-Martine Jackson – (8/10 – 11/14)
   Research Topic – "Utilizing Functionalization to Access Advanced Materials Properties"
   Presently employed with Eastman Chemical, Kingsport, TN

2. Sarah White – (8/08 – 12/12)
   Research Topic – "Shape Memory Polyester Based Biomaterials"
   Presently a postdoctoral researcher with Professor Antonetti, Germany
   *NSF Postdoctoral Fellow in Biology

3. Jason Rochette – (8/07 – 6/12)
   Research Topic – "Versatile Routes to Photo-Responsive Polyesters for Dual and Triple Shape Memory Biomaterials"
   Presently employed with Ashland Inc., Wilmington, DE

4. Hayden Black – (8/07 - 4/12), Ph.D.
   Research Topic – "Expanding the Scope of Oligothiophene Based Semiconductors: Perfluoroalkylated Materials and Fused Thienoacenes"
   Presently a postdoctoral researcher with Professor Dmitri Perepichka, McGill University

5. Duy Le – (8/07 - 3/12), Ph.D.
   Research Topic – "Shape Memory Biomaterials"
   Presently employed with Lord Corporation, Durham, NC

6. Peter Uthe – (8/05-5/10), Ph.D.
   Research Topic – "Design of Polymeric Materials for the Enhancement of Gene Delivery"
   Presently employed with Bayer Co., West Virginia

7. Matthew Cottle (8/03-8/08), Ph.D
   Research Topic – "Polyphenylene Based Photovoltaics"
   Presently employed with Syngenta, Inc., Greensboro, NC

8. Jinrong Liu (8/03-7/08), Ph.D.
   Research Topic – "Degradable Polyester Elastomers for Tissue Engineering Applications"

Presently employed with Rohm and Haas, Marlborough, MA

8. Benjamin Pierce (8/03-6/08), Ph.D.

   Research Topic – "Polyester Urethane Shape Memory Materials"
   Presently employed with GKSS Research Center Geesthacht, Germany

9. Andy Brown (8/04-5/08), Ph.D.
   Research Topic – "New Methodologies for Functionalized Polyester Materials"
   Presently employed with the Center for Naval Analysis, Arlington, VA

10. Jake Sprague – (8/05-5/07), M.S.
    Research Topic – "Polyester Elastomers"
    Presently employed with Liquidia, North Carolina

11. David Olson – (8/02-5/06), Ph.D.
    Research Topic – "Functionalized Aliphatic Biomaterials"
    Presently employed with 3M, Minneapolis, MN

12. Irene Yang – (8/00-5/06), Ph.D.
    Research Topic – "New Block Copolymers for Gene Therapy Applications"
    Presently employed with Bayer Co., West Virginia

Undergraduate Students.

1. Daniel Liauw – (7/12 – 5/14) (Phi Beta Kappa 2014, Jason Altom Chemistry Undergraduate Research Award 2014)
2. Hung Nguyen – (5/12 – 12/13), SURF program (Phi Beta Kappa 2014)

   (Graduate School: MIT)

3. Farihah Hague – (5/13 – 8/13), UNC NSF MIRT program

   (Graduate School: Tulane University)

4. Sheila Enoh – (6/12-8/12)
5. Shaina Ly – (10/10-5/12)
6. Sean Hemp, (10/07- 5/09)

   (Graduate school: Virginia Tech)

7. Andrew Heiser – junior, 9/06-1/08
8. Brittany Allen, sophomore, SMART summer research program 5/08-8/08
9. Albert Hainsworth, freshman, SMART summer research program 5/08-8/08
10. Steven Brown – junior, SMART summer research program 5/07-8/07
11. *Dominique Downing – (10/04-5/07), Research Education Support Program and AGEP Programs

    (Graduate school: University of Maryland 8/07)

    *(*recipient of the National Organization of Black Chemists and Chemical Engineers National Undergraduate Research Award 2006)*

12. Bobby Shaw – junior, summer researcher 5/06-9/06
13. Charity Brown – junior, SMART summer research program 5/06-8/06
14. Shakia Hardy - junior, SMART summer research program 5/05-8/05
15. Irene Mora –senior, Exchange Student – Spain (11/03-7/04)

High School Students

1. Amira Carter – junior, Project SEED summer student (5/08-8/08)
2. Jenay Powell – junior, Research Experience in Chemistry, Astronomy and Physics (RECAP) program (5/07- 7/07)
3. Steven Ko – senior, North Carolina School of Math and Science, Research Experience in Chemistry, Astronomy and Physics (RECAP) program (5/06-12/06)
4. Carletta Muse – junior, Project SEED summer student (5/06-8/06)

Iowa State Postdoctoral Associates

1. Dr. Jie Wang - (1/97-8/98), Syracuse University, NY
   Research Topic - "Polythiophenes via Ni-Catalysis"
2. Dr. Mikhail Zolotukhin - (5/98-9/98), Russian Academy of Sciences
   Research Topic - "Synthesis of High Performance Polymers via Nickel-Catalysis, Design of Polymer-Quasicrystal Composites"
3. Dr. D. K. Mohanty - (4/99-5/00), Technical University of New Delhi
   Research Topic - "Synthesis of High Performance Polymer via Nickel Catalysis"
4. Dr. Kirk Arvidson - (8/99-9/00), Iowa State University
   Research Topic - "Synthesis of Polar Functionalized Diene-Containing Materials"

Iowa State Theses

1. Dejan Andjelkovic – (8/01-5/06), Ph.D., joint student with Richard Larock, ISU
   Research Topic – "Fluorinated High Performance Polymers"

   Presently employed with Ashland Chemical, Columbus, OH
2. Laura Salazar - (1/99-5/03), Ph.D.
   Research Topic - "Synthesis and Study of Block Copolymers Containing Polar Dienes", presently employed at Grandview College, Des Moines, IA
3. Erik Hagberg - (8/98-10/03), Ph.D.
   Research Topic - "Synthesis and Study of Triblock Copolymers Containing Rigid and Coil Segments", presently employed at General Electric, Plastics Division
4. Melissa Rath - (8/98-4/02), M.S.
   Master's Thesis - "Free Radical Polymerizations of Disubstituted, Polar Dienes", presently employed at ATMI, Danbury, Connecticut
5. Olivia Wu - (8/97-5/01), M.S.
   Master's Thesis - "Synthesis and Free Radical Polymerization of Amino-Functionalized Diene Derivatives", presently employed at Boehringer-Ingelheim Pharmaceuticals, Inc.
6. *Paul Bloom – (8/97-8/01), Ph.D. (recipient of the Iowa State University Research Excellence Award 2001)
   Dissertation – "High Performance Polymers and Quasicrystal /Polymer Composites", presently employed at Archer-Daniels-Midland
7. Yi Jing - (8/97-5/00), M.S.
   Master's Thesis - "Free Radical Polymerization of Cyano Functionalized Dienes"
8. Matt Beery - (8/97-11/99), M.S.
   Master's Thesis - "Free Radical Polymerization of Disubstituted, Polar Dienes",

employed at Johnson and Johnson Inc. until 2002, presently employed in the U.S. Naval Service

9. Pamela Havelka - (8/96-2/00), M.S.
Master's Thesis - "Fluorinated Phenylene-Containing Polymers via Nickel Catalysis", presently employed at Bayer Corporation

10. Yunxiao Li - (8/96-11/99), M.S.
Master's Thesis - "Emulsion Polymerization of Amine Functionalized Dienes", presently employed at Symyx Corporation

11. Anthony Pasquale - (8/95-11/98), M.S.
Master's Thesis - "Poly(benzophenones and sulfone)s via Nickel Catalysis", Ph.D. at Virginia Tech 2002

Iowa State Undergraduate Students

1. Brandon Goodridge - (5/01-5/03), Senior
2. Alicia Thomas - (5/01-5/02), McNair Scholars Program
3. Maiysha Rudison - (8/98-5/02), McNair Scholars Program
4. Tanya Indelicato - (5/99-5/01), Women in Science and Engineering Program
5. Glen Post - (8/98-5/99), attended University of Colorado chemistry/biochemistry graduate school
6. Brian Vanhatten - (5/99-5/00)
7. Uzoamaka Obikeze - (5/98-5/99)
8. Tatanya Emmick - (5/96-8/99), presently employed at Kemin Corp.
9. Matt Beery - (1/97-8/97), employed at Johnson and Johnson until 2002, presently employed in the U.S. Naval Service
10. Ingrid Roseborough - (11/96-12/97), McNair Scholars Program, M.D., University of Chicago 2002
11. Shari Terbstra - (10/96-5/98), Women in Science and Engineering Program, presently employed at Becker Underwood Company
12. Tim Folly - (5/96-7/97), Ph.D. chemistry, University of Florida, Gainesville 2002
13. Layli Springer - (5/96-7/97), McNair Scholars Program

Iowa State High School Students

1. Adina Rollins - (5/96-6/97), Women in Science and Engineering Program, presently an Ohio State chemical engineering senior
2. Chrystal Martin - (6/97-9/98), Women in Science and Eng. Program, presently a University of Minnesota chemistry junior
3. Jasmyn Dyer - (5/00-8/02), PIPELINES (Program in Pursuit of Excellence and Learning in Engineering and Science), presently an Iowa State University freshman.

VI. PUBLICATIONS

Refereed Papers

1. “Reversible Shape Memory Optical Gratings”, Tippets, C.A.; Li, Q.; Fu, Y.; Donev, E.; Zhou, J.; Turner, S.A.; Jackson, A.-M.S.; Ashby, V.S.; Sheiko, S.S.; Lopez R. *ACS Applied Materials and Interfaces* **2015**, submitted.

2. “Grafting Poly(OEGMA) Brushes from a Shape Memory Elastomer and Subsequent Wrinkling Behavior", Jackson, A.-M; Sheiko, S.S.; Ashby, V.S. *Langmuir* **2015**, accepted 4/30/15.

3. “Isothermal Programming of Triple Shape Memory”, Zhou, J.; Li, Q.; Turner, S.A.; Ashby, V.S.; Sheiko, S.S. *Polymer,* **2015**, doi:10.1016/j.polymer.2015.02.023.

4. "Shape Memory Particles Capable of Controlled Geometric and Chemical Asymmetry made from Aliphatic Polyesters", Brosnan, S. M.; Jackson, A. M.; Wang, Y.; Ashby, V. S. *Macromol. Rapid. Comm.,* DOI: 10.1002/marc.201400199 July 24, 2014.

5. "Switchable Micropatterned Surface Topographies Mediated by Reversible Shape Memory", Turner, S.A.; Zhou, J.; Sheiko, S.S.; Ashby, V.S. *ACS Appl. Mater. Interfaces*, **2014**, *6* (11), pp 8017–8021.

6. “Shapeshifting: Reversible Memory in Semicrystalline Elastomers”, Zhou, J.; Turner, S.A.; Brosnan, S.M.; Li, Q.; Carrillo, J-M Y.; Nykypanchuk, D; Gang, O.; Ashby, V.S.; Dobrynin, A.V.; Sheiko, S. *Macromolecules*, **2014**, *47* (5), pp 1768–1776.

7. "It is the Outside That Counts: Chemical and Physical Control of Dynamic Surfaces", Brosnan, Sarah M.; Brown, Andrew H.; Ashby, Valerie S. *J. Am. Chem. Soc.* **2013**, *135*, 3067-3072.

8. “Photo-Responsive Polyesters for Tailorable Shape Memory Biomaterials”, Rochette, J.M.; Ashby, V.S. *Macromolecules* **2013**, *46 (6)*, 2134.

9. **“**Near-Infrared Activation of Semi-Crystalline Shape Memory Polymer Nanocomposites”, Le, D.M.; Tycon, M.A.; Fecko, C.J.; Ashby, V.S. *J. Appl. Poly. Sci.* **2013**, *130(6)*, 4551-4557.

10. Perfluoroalkyl-substitution *versus* electron-deficient building blocks in design of oligothiophene semiconductors”, Black, H.T.; Dadvand, A.; Liu, S.; Ashby, V.S.; Perepichka, D.F. **2013**, *1*, 260.

11. “Dynamic Topographical Control of Mesenchymal Stem Cells by Culture on Responsive Poly(ε-caprolactone) Surfaces”, Le, D.M.; Kulangara, K.; Adler, A.F.; Leong, K.; Sheares Ashby, V. *Adv. Mat.* **2011**, *23(29)*, 3278.

12. “Synthesis, Crystal Structures, and Electronic Properties of Nonlinear Fused Thienoacene Semiconductors”, Black, Hayden; Liu, Shubin; Sheares, V. *Organic Letters* **2011**, *13*, 6492.

13. “Thermoplastic Poly(ester urethane)s with Novel Soft Segments”, Pierce, B.F.; Brown, A.H.; Sheares, V.V., *Macromolecules* **2008**, *41(11)*, 3866.

14. “Amorphous Unsaturated Aliphatic Polyesters Derived from Dicarboxylic Monomers Synthesized by Diels-Alder Chemistry”, Brown, A.H.; Sheares, V.V. *Macromolecules* **2007**, *40(14)*, 4848.

15. “Isomeric Hexafluoroisopropylidene-Linked Benzophenone Polymers via Nickel Catalysis”, Andjelkovic, D.; Sheares, V.V. *Macromolecules* **2007**, *40(20)*, 7148-7156.

16. “Synthesis of Disubstituted Amine-Functionalized Diene-Based Polymers”, Yang, Y.; Sheares, V.V. *Polymer* **2007**, *48(1)*, 105-109.

17. "Synthesis of Amine-Functionalized Diene-Based Polymers as Novel Gene Delivery Vectors", Yang, Y.; Lee, J.; Cho, M.; Sheares, V. V. *Macromolecules* **2006**, *39*(25), 8625-8631.

18. "Amorphous Linear Aliphatic Polyesters for the Facile Preparation of Tunable Rapidly Degrading Elastomeric Devices and Delivery Vectors", Olson, D.A.; Sheares, V.V. *J. Am. Chem. Soc.* **2006**, *128*(41), 13625-13633.

19. "Preparation of Unsaturated Linear Aliphatic Polyesters Using Condensation Polymerization", Olson, D.A.; Sheares, V.V. *Macromolecules* **2006**, *39*(8); 2808-2814.

20. "Alicyclic photoresists for CO_2-based next-generation microlithography: A tribute to James E. McGrath", Boggiano, M.K.; Vellenga, D.; Carbonell, R.; Sheares**,** V.V.; DeSimone, J.M. *Polymer* **2006**, *47(11)*, 4012-4017.

21. Novel Poly(paraphenylene)s via Nucleophilic Aromatic Substitution of Poly(4'-fluoro-2,5-benzophenone)", Bloom, P.D.; Jones, C.H.; Sheares, V.V *Macromolecules* **2005**, *38(6)*, 2159.

22. "Development of a Versatile Methodology for the Synthesis of Poly(2,5-benzophenone) Containing Coil-Rod-Coil Triblock Copolymers", Hagberg, E.C.; Goodridge, B.; Ugurlu, O.; Chumbley, S.; Sheares, V.V. *Macromolecules* **2004**, *37(10)*, 3642 .

23. "Advances in Ni(0)-Catalyzed Coupling for the Synthesis of Polythiophenes and Polyphenylenes", Hagberg, E.C.; Olson, D.A.; Sheares, V.V. *Macromolecules* **2004**, *37(13)*, 4748.

24. "Surfactant solvation effects and micelle formation in ionic liquids", Anderson, J.L.; Pino, V.; Hagberg, E.C.; Sheares, V.V.; Armstrong, D.W. *Chem. Comm.* **2003**, *19*, 2444.

25. "A versatile method for tuning the chemistry and size of nanoscopic features by living free radical polymerization", von Werne, T.A.; Germack, D.S.; Hagberg, E.C.; Sheares, V.V.; Hawker, C.J.; Carter, K.R. *J. Am. Chem. Soc.* **2003**, *125 (13)*, 3831.

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34. "Synthesis and Characterization of Water Soluble Block Copolymers for pH-Sensitive Delivery", Anderson, B.; Bloom, P.D.; Sheares, V.V.; Mallapragada, S.K. *Mat. Res. Soc. Symp.* **2001**, *662*.

35. "Polar, Functionalized Diene-Based Materials. 5. Free Radical Polymerization of 2-[(*N*-Benzyl-*N*-methylamino)methyl]-1,3-butadiene and Copolymerization with Styrene", Wu, L.; Sheares; V.V. *J. Polym. Sci., Polym. Chem. Ed.* **2001**, *39*, 3227.

36. "Synthesis of Poly(*p*-phenylene) Macromonomers and Multiblock Copolymers", Bloom, P.D.; Sheares, V.V. *J. Polym. Sci., Polym. Chem. Ed.* **2001**, *39*, 3505.

37. "Bilayer Nanocomposite Molecular Coatings from Elastomeric/Rigid Polymers: Fabrication, Morphology and Micromechanical Properties", Luzinov, I.; Julthongpiput, D.; Bloom, P.D.; Sheares, V.V.; Tsukruk, V.V. *Macromol. Symp.* **2001**, *166*, 227.

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39. "Polar, Functionalized Diene-Based Materials. 2. Free Radical Copolymerization Studies of 2-Cyanomethyl-1,3-butadiene with Styrene and Acrylonitrile", Jing, Y.; Sheares; V.V. *Macromolecules* **2000**, *33*, 6262.

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41. "Development of Novel Polymer/Quasicrystal Composite Materials", Bloom, P.D.; Baikerakar, K.G.; Otaigbe, J.U.; Sheares, V.V. *Materials Science and Engineering A.* **2000**, *294-296*, 156.

42. "Synthesis and Characterization of Poly[[1,1'-biphenyl]-4,4'-diyl[2,2,2-trifluoro-1-(trifluoromethyl)ethylidene]]", Havelka, P.A.; Sheares, V.V. *Macromolecules* **1999**, *32*, 6418.

43. "Alkyl-Substituted Poly(2,5-benzophenone)s Synthesized via Ni(0)-Catalyzed Coupling of Aromatic Dichlorides and Their Miscible Blends", Pasquale, A.J.; Sheares, V.V. *J. Polym. Sci., Polym. Chem. Ed.* **1998**, *36*, 2611.

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45. "Useful Model Systems for the Study of $S_{RN}1$ Chemistry in the Synthesis of Poly(arylene ether ketone)s", Dukes, K.E.; Forbes, M.D.E.; Jeevarajan, A.S.; Belu, A.M.; DeSimone, J.M.; Linton, R.W.; Sheares, V.V. *Macromolecules* **1996**, *29*, 3081.

46. "Isometric Poly(benzophenone)s: Synthesis of Highly Crystalline Poly(4,4'-benzophenone) and Amorphous Poly(2,5-benzophenone), a Soluble Poly(*p*-phenylene) Derivative", Phillips, R.W.; Sheares, V.V.; Samulski, E.T.; DeSimone, J.M. *Macromolecules* **1994**, *27*, 2354.

47. "Thiophene-Based Poly(arylene ether)s - Imide Arylene Ether Ketone Statistical Copolymers", Sheares, V.V.; DeSimone, J.M.; Hedrick, J.L.; Carter, K.; Labadie, J.W. *Polymer* **1994**, *35*, 3782.

48. "New Polymerization Methodology: Synthesis of Thiophene-Based Heterocyclic Polyethers", DeSimone, J.M.; Sheares. V.V. *Macromolecules* **1992**, *25*, 4235.

VII. PATENTS

1. "Shape Memory Materials and Biomaterials with Fabrication of Nanoscopic and Microscopic Features", Patent filed, 5/14.
2. "Iodinated Polymers for CT Contrast Agents", Patent filed 8/14.
3. "Polyester Based Degradable Materials and Implantable Biomedical Articles Formed Therefrom", issued 9/6/11, U.S. Patent No. 8,013,061
4. "pH-Sensitive Methacrylic Copolymers and the Production Thereof", issued 1/07, U.S. Patent Number 7,160,971.
5. "Functionalized Diene Monomers and Polymers Containing Functionalized Dienes and Methods for Their Preparation", Continuation issued 6/03, Patent No. 6,583,260
6. "Functionalized Diene Monomers and Polymers Containing Functionalized Dienes and Methods for Their Preparation", Continuation Issued 2/02, Patent No. 6,344,538
7. "Functionalized Diene Monomers and Polymers Containing Functionalized Dienes and Methods for Their Preparation", Issued 8/00, Patent No. 6,100,373
8. "High Performance Fluorinated Polymers and Methods", Issued 2/03, Patent No. 6,515,101

VIII. PRESENTATIONS

Invited Lectures

1. American Chemical Society National Meeting, San Francisco, CA (8/14), "Functionalized biomaterials: From shape memory materials to computed tomography contrast agents"
2. Royal Society of Chemistry, Georgia Tech, (7/14), "Functionalized biomaterials: from shape memory materials to computed tomography contrast agents"
3. American Vacuum Society National Meeting, Long Beach, CA (11/13), "Shape Memory Polyester Biomaterials"
4. Southeast Regional Meeting of the American Chemical Society (11/12), "Polyester biomaterials: Variation and study of functionality, shape memory effects, topography and processing"
5. North Carolina Central University, Department of Chemistry and Biochemistry (11/12), "Polyester biomaterials: Variation and study of functionality, shape memory effects, topography and processing"
6. UNC-Chapel Hill, Materials Research Society (9/12), "Shape Memory Biomaterials"
7. University of Maryland, Baltimore County, Department of Chemistry (8/12)
8. 2012 IUPAC Polymers World Congress, Virginia Tech, (6/12), "Shape Memory Biomaterials: Variation of Topography, Functionality and Stimuli"
9. UNC School of Pharmacy (4/11), "Design of Polyester Based Biomaterials"
10. American Chemical Society National Meeting, Anaheim, CA (3/11), "Shape Memory Biomaterials: Variation and Study of Topography, Functionality and Stimuli"
11. Materials Research Society, (9/10), "Shape Memory Biomaterials"

12. Gordon Research Conference – Biomaterials, Holderness School, Plymouth, NH (7/09), "Polyester and polyester-urethane based biomaterials"

13. Bayer Material Science Symposium, keynote speaker, Pittsburgh, PA (10/08), "Polyester and Polyester Urethane–Based Biomaterials"

14. American Chemical Society National Meeting, New Orleans, LA (4/08), "Design of polyester-based biomaterials: A structure-property approach", Sheares, V.V.; Brown, A.H.; Pierce, B.F.; Liu. J.; Uthe, P. (Functional Nanomaterials from New Polymer Synthetic Methodologies Symposium)

15. American Chemical Society National Meeting, New Orleans, LA (4/08), "Polyester and polyester urethane-based biomaterials", Sheares, V.V.; Brown, A.H.; Pierce, B.F.; Liu, J.; Uthe, P. (ACS Award in Polymer Chemistry Symposium)

16. National Organization of Black Chemists and Chemical Engineers, Philadelphia, PA (3/08), "Polyester-based biomaterials"

17. American Chemical Society National Meeting, Boston, MA (8/07), "Design of Polyesters and Polyester Urethanes", Sheares, V.V.; Brown, A.H.; Pierce, B.F.; Sprague, J.J. (Women on the Frontiers of Chemistry Symposium)

18. Gordon Research Conference - Polymers East, Mount Holyoke (6/07), "Biomaterials Design Using a Structure-Property Approach"

19. University of Chicago (12/06), "Design and Synthesis of Degradable Bioelastomers"

20. North Carolina Central University, Durham, NC (11/06), "Design ad Synthesis of Functionalized Bioelastomers"

21. American Chemical Society National Meeting, San Francisco, CA (9/06), "Design and Synthesis of Novel Biomaterials: A Structure-Property Approach", Sheares Ashby, V.; Yang, Y.; Olson, D.; Cottle, M.; Pierce, B.F.; Liu, J.; Brown, A.H. (ACS Polymer Industrial Sponsors Award Symposium)

22. Salem College, Winston-Salem, NC (9/06), "A Structure-Property Approach to Biomaterials Design"

23. Princeton, Department of Chemistry (3/06), "Design and Synthesis of Novel Biomaterials: A Structure-Property Approach"

24. American Chemical Society National Meeting, San Diego, CA (3/05), "Functionalized Polyesters and Polycarbonates for Biomaterials Applications", Sheares, V.V.; Olson, D.A.; Pierce, B.F. (ACS Polymer Award Symposium for Creative Invention)

25. Chevron Phillips, Bartlesville, Oklahoma (11/04), "Design of Block Copolymer Compatibilizers for PPS Blends"

26. Polycondensation 2004, Roanoke, Virginia (9/04), "Advances in Ni(0)-Catalyzed Coupling in Polymer Synthesis"

27. Eleventh International Conference on Composites and Nanoengineering, Hilton Head, South Carolina (8/04), "Design of Polymer Quasicrystal Composites for Biomaterials Applications"

28. Chevron Phillips, Bartlesville, Oklahoma (10/03), "Advances in Nickel Catalyzed Coupling Polymerization"

29. Iowa State University, The Osborne Club (10/14/02), "Design of Polymer-Quasicrystal Composites"

30. Iowa State University, Department of Chemical Engineering, "Design of Materials from High Temperature Polymers to Elastomers and Composites" (9/02)

31. The American Chemical Society, “Women at the Forefront of Chemistry Symposium”, Boston, Massachusetts (8/19/02), “Design and Fabrication of Polymer Quasicrystal Composites”

32. The Robert Hearin Foundation Symposium, The University of Southern Mississippi, Hattiesburg, Mississippi (4/4/02), “Novel Al-Cu-Fe Polymer Quasicrystal Composites”

33. Creighton University, Omaha, Nebraska (10/01), “High Performance Polymers via Nickel-Coupling and Polymer/Quasicrystal Composites”

34. The University of Nebraska , Omaha, Nebraska (10/01), “High Performance Polymers via Nickel-Coupling and Polymer/Quasicrystal Composites”

35. 3M Central Research and Development, Minneapolis, Minnesota (10/01), “New Materials from High Temperature Polymers and Composites to Functionalized Elastomers”

36. Pacifichem 2000 (International Chemical Congress of Pacific Basin Societies), Honolulu, Hawaii (12/17/00), “Poly(*p*-phenylene) Derivatives via Nickel Coupling Chemistry and New Quasicrystal/Polymer Composites”

37. Materials Research Society Meeting, Boston, Massachusetts (11/30/00), “High Performance Quasicrystal-Reinforced Polymer Composites”

38. The University of Wisconsin-Eau Claire, Eau Claire, Wisconsin (10/16-10/20/00), Visiting Minority Scholars Program, “High Performance Polymer Design”, “New Quasicrystal/Polymer Composites”, “Polar, Functionalized Diene-Containing Materials”

39. Georgia Technical Institute of Technology, Atlanta, Georgia (9/28/00), “New Materials from High Temperature Polymers and Composites to Functionalized Elastomers”

40. St. Olaf College, Northfield, Minnesota (9/21/00), “New Quasicrystal-Polymer Composites”

41. Stanford University, Center on Polymer Interfaces and Macromolecular Assemblies (CPIMA) Forum on Polymer Synthesis in the New Millennium (8/4/00), “Polar, Functionalized Materials via Free Radical Polymerization of Novel Substituted Dienes”

42. 3M Central Research and Development, Minneapolis, Minnesota (4/21/00), “New Materials from High Temperature Polymers and Composites to Functionalized Elastomers”

43. Central Michigan University, Mount Pleasant, Michigan (4/10/00), “New Materials via Nickel-Catalyzed Coupling Polymerization”

44. American Chemical Society National Meeting, San Francisco, California, Frontiers in Polymer Science in the 21st Century Symposium, (3/28/00), “New Directions in Functionalized Materials”

45. The University of North Carolina at Chapel Hill (3/10/00), “New Materials from High Temperature Polymers and Composites to Functionalized Elastomers”

46. The North Carolina ACS Polymer Group, Raleigh, N.C. (3/9/00), “New Materials from High Temperature Polymers and Composites to Functionalized Elastomers”

47. The University of Florida, Gainesville, Florida (10/14/99), “New Materials from High Temperature Polymers and Composites to Functionalized Elastomers”

48. Virginia Tech, Blacksburg, Virginia (8/13/99), “High Performance Polymers Via Nickel-Catalyzed Coupling Polymerization”

49. Goodyear Tire and Rubber Company, Akron, Ohio (6/23/99), “New Materials from High Temperature Polymers and Composites to Functionalized Elastomers”

50. Phillips Corporation Central Research and Development, Bartlesville, Oklahoma (5/15/99), “New Materials from High Temperature Polymers and Composites to Functionalized Elastomers”

51. 5th European Technical Symposium on Polyimides and High Performance Functional Polymers (Stepi 5), Montpellier, France (5/3/99), “New Materials via Nickel-Catalyzed Coupling Polymerization”

52. Dupont Central Research and Development, Wilmington, Delaware (4/28/99), “Polar, Functionalized Materials via Free Radical Polymerization of Novel Substituted Dienes”

53. American Chemical Society Carl Marvel Creative Polymer Chemistry Award Symposium (3/23/99), “New Functionalized Materials Based on Substituted Butadienes”

54. Illinois State University, Bloomington, Illinois (2/5/99), “New Materials Via Nickel-Catalyzed Coupling Polymerization”

55. University of Massachusetts at Amherst (11/5/98), “Polar, Functionalized Materials via Free Radical Polymerization of Novel Substituted Dienes”

56. International Polycondensation Conference, Annapolis, Maryland (9/27/98), “New Materials Via Nickel-Catalyzed Coupling Polymerization”

57. 3M Central Research and Development, Minneapolis, Minnesota (5/15/98), “High Performance Polymers Based on Nickel-Catalyzed Coupling Polymerization”

58. The University of Minnesota, Minneapolis, Minnesota (5/14/98), “High Performance Polymers Based on Nickel-Catalyzed Coupling Polymerization”

59. Macromolecular Symposium (Rohm and Haas) - Organization for Black Chemists and Chemical Engineers National Meeting, Orlando, Florida (3/21/97), “Soluble Polyphenylenes and Polythiophenes”

60. Loras College, Dubuque, Iowa (3/3/97), “Polymer Chemistry: From Airplane Wings to Membranes”

Conference Abstracts/Oral Presentations

1. American Chemical Society National Meeting, San Francisco, CA (8/14), “Iodinated polyesters as a versatile platform for radiopaque biomaterials and nanoparticles”, Houston, K.R.; Lee, Y.Z.; Ashby, V.S.

2. American Chemical Society National Meeting, San Francisco, CA (8/14), “Functionalization of an engineering thermoplastic for self-healing applications”, Turner, S.A.; Sheiko, S.; Ashby, V.S.

3. American Chemical Society National Meeting, San Francisco, CA (8/14), “Grafting from shape memory substrates: Physically dynamic materials resulting in chemically switching surfaces”, Jackson, A-M. S.; Sheiko, S.; Ashby, V.S.

4. American Chemical Society National Meeting, San Francisco, CA (8/14), “Shapeshifting: General principles of reversible shape memory in semicrystalline elastomers”, Dobrynin, A.V.; Zhou, J.; Turner, S.; Li, Q; Ashby, V.S.; Sheiko, S.

5. American Chemical Society National Meeting, Dallas, TX (3/14), “Self-healing properties of functionalized poly(ether sulfone) thermoplastic elastomers”, Turner, S.; Ashby, V.

6. American Chemical Society National Meeting, Dallas, TX (3/14), “Highly Iodinated nanoparticles for use as a computed tomography contrast agents”, Houston, K.R.; Brosnan, S.M.; Lee, Y.Z.; Ashby, V.S.

7. Gordon Research Seminar in Polymers, South Hadley, MA (6/13), “Reversible shape memory behavior of microscale semi-crystalline polyester features”, Turner, S.

8. American Chemical Society National Meeting, Anaheim, CA (3/11), “Shape Memory Polymers in Dictating Cellular Response”, Le, D.M.; Kulangara, K.; Leong, K.W.; Ashby, V.

9. American Chemical Society National Meeting, Anaheim, CA (3/11), “Supramolecular Control of Morphology in Poly(3-hexylthiophene) Thin Films via Polymer End-group Modification”, Black, H.; Ashby, V.

10. American Chemical Society National Meeting, Anaheim, CA (3/11), “Photo-responsive Polyesters for Shape Memory Biomaterials”, Rochette, J.; Ashby, V.

11. American Chemical Society National Meeting, Anaheim, CA (3/11), “Functional Shape Memory Polymers Tailored for Cellular Response Applications”, White, S.M.; Brown, A.; Leong, K.W.; Ashby, V.

12. American Chemical Society National Meeting, New Orleans, LA (4/08), “Synthesis and evaluation of new photocurable and biodegradable elastomers”, Liu, J.; Sprague, J.J.; Samulski, E.T.; Sheares, V.V.

13. American Chemical Society National Meeting, New Orleans, LA (4/08), “Grafting carboxylic acids and tertiary amines onto azide-containing aliphatic polyesters”, Brown, A.H.; Sheares, V.V.

14. American Chemical Society National Meeting, New Orleans, LA (4/08), “Development of novel amino polyesters used in gene delivery”, Uthe, P.; Sheares, V.V.

15. American Chemical Society National Meeting, New Orleans, LA (4/08), “Photochemically cured biodegradable shape-memory polymers”, Pierce, B.F.; Brown, A.H.; Sheares, V.V.

16. American Chemical Society National Meeting, New Orleans, LA (4/08), “Alternating donor-acceptor copolymers containing thermally removable solubilizing groups for use in photovoltaic devices”, Cottle, M.R.; Sheares, V.V.

17. American Chemical Society National Meeting, San Francisco, CA (9/06), “Functional Cyclic Unsaturated Aliphatic Polyesters for Biological Applications”, Brown, A.H.; Sheares, V.V.

18. American Chemical Society National Meeting, Chicago, IL (3/07), “Amorphous Unsaturated Aliphatic Polyesters Derived from Dicarboxylic Monomers Synthesized by Diels-Alder Chemistry”, Brown, A.H.; Sheares, V.V.

19. American Chemical Society National Meeting, Chicago, IL (3/07), “Biocompatible Thermoplastic Poly(ester urethane)s with Novel Soft Segments”, Pierce, B.F.; Brown, A.H.; Sheares, V.V.

20. American Chemical Society National Meeting, San Francisco, CA (9/06), “Completely amorphous rapidly degrading polyester based elastomers”, Olson, D.A.; Sheares, V.V. (*ACS Graduate Polymer Award Symposium)

21. American Chemical Society National Meeting, Atlanta, GA (3/06), “Biodegradable Aliphatic Polyester-Based Materials: Tunable Functional Elastomers”, Olson, D.A.; Sheares, V.V.

22. American Chemical Society National Meeting, Atlanta, GA (3/06), “Functional Cyclic Unsaturated Aliphatic Polymers for Biomedical Applications”, Brown, A.H.; Sheares, V.V.

23. American Chemical Society National Meeting, Atlanta, GA (3/06), “Design and Synthesis of Novel Biomaterials: A Structure-Property Approach”, Olson, D.A.; Yang, Y.; Pierce, B.F.; Brown, A.H.; Sheares, V.V.

24. DARPA Workshop Speaker – Institute for Defense Analysis (8/05), “Multiscale Design of Mechanically Active Materials”, Gall, K.; Sheares Ashby, V.V.

25. American Chemical Society National Meeting, Washington, DC (8/05), “Preparation of novel functionalized aliphatic polyesters through condensation polymerization”, Olson, D.A.; Sheares, V.V.

26. American Chemical Society National Meeting, Washington, DC (8/05), “Synthesis of Poly(aminoisoprene)-*b*-poly(ethylene glycol) as Gene Delivery Vectors”, Yang, Y.; Sheares, V.V.

27. Gordon Conference – Polymers East, Mt. Holyoke (6/05), “Amine-Containing Block Copolymer Gene Delivery Vectors”, Yang, Y.; Sheares, V.V.

28. Gordon Conference – Polymers East, Mt. Holyoke (6/05), “Functionalized Bioelastomers”, Olson, D.; Sheares, V.V.

29. American Chemical Society National Meeting, San Diego, CA (3/05), “Synthesis and Characterization of New Hexafluoroisopropylidene-linked Benzophenone Polymers”, Jones, C.A.; Andjelkovic, D.D.; Sheares, V.V.

30. American Chemical Society National Meeting, San Diego, CA (3/05), “A Versatile Route to Novel Functionalized Aliphatic Polyesters for Biomedical Applications”, Olson, D.A.; Sheares, V.V.

31. American Chemical Society National Meeting, (3/03), “Free Radical Polymerization of 2,3-bis(dimethylaminomethyl)-1,3-butadiene”, Yang, Y.; Sheares, V.V.

32. American Chemical Society National Meeting, Orlando, Florida (4/10/02), “Controlled Polymerizations of Functionalized 1,3-Butadienes”, Rusch-Salazar, L.A.; Rath-Murphy, M.; Sheares, V.V.

33. American Chemical Society National Meeting, Orlando, Florida (4/10/02), “Synthesis and Characterization of Functionalized Poly(arylene phosphine oxide)s”, Rusch-Salazar, L.; Sheares, V.V.

34. American Chemical Society National Meeting, Chicago, Illinois (8/25/01), ”Synthesis of Functional Poly(arylene Phosphine Oxide)s”, Salazar, L.; Sheares, V.V. *Polym. Prepr. (Am. Chem. Soc. Div. Polym. Chem.)* **2001**, *42(2)*, 591.

35. American Chemical Society National Meeting, Chicago, Illinois (8/25/01), “Endcapped Poly(*p*-phenylenes): Chain End Chlorination and Macroinitiated ATPR”, Hagberg, E.; Sheares, V.V. *Polym. Prepr. (Am. Chem. Soc. Div. Polym. Mat. Sci. and Eng.)* **2001**, *85*, 480.

36. American Chemical Society National Meeting, Chicago, Illinois (8/25/01), “Ultra High Molecular Weight Polyethylene Quasicrystal Composites for Hip Arthroplasty Femoral Components”, Bloom, P.D.; Anderson, B.; Mallapragada, S.K.; Sheares, V.V. *Polym. Prepr. (Am. Chem. Soc. Div. Polym. Mat. Sci. and Eng.)* **2001**, *85*, 592.

37. American Chemical Society National Meeting, San Diego, California (4/1/01), "Polar, Functionalized Materials via Free Radical Polymerization of Substituted Dienes", Sheares, V.V.; Wu, L.; Jing, Y.; Beery, M.; Rath, M.K. *Polym. Prepr. (Am. Chem. Soc. Div. Polym. Mat. Sci. and Eng.)* **2001**, *84*, 1047.

38. American Chemical Society National Meeting, San Diego, California (4/1/01), "Nucleophilic Aromatic Substitution of Poly(4'-fluoro-2,5-benzophenone)", Bloom, P.D.; Sheares, V.V. *Polym. Prepr. (Am. Chem. Soc. Div. Polym. Mat. Sci. and Eng.)* **2001**, *84*, 562.

39. American Chemical Society National Meeting, San Diego, California (4/1/01), "Nucleophilic Aromatic Substitution of Poly(4'-fluoro-2,5-benzophenone)", Bloom, P.D.; Sheares, V.V. *Polym. Prepr. (Am. Chem. Soc. Div. Polym. Mat. Sci. and Eng.)* **2001**, *84*, 562.

40. Midwest Regional ACS Meeting, St. Louis, Missouri (10/25/00), "Development and Characterization of Polymer/Quasicrystal Composites", Bloom, P.D.; Baikerikar, K.G.; Sheares, V.V.

41. American Chemical Society National Meeting, San Francisco, California (3/26/00) "Copolymerization of 2-Cyanomethyl-1,3-butadiene With Styrene and Acrylonitrile", Jing, Y.; Sheares, V.V. *Polym. Prepr. (Am. Chem. Soc. Div. Polym. Chem.)* **2000**, *41(1)*, 44.

42. American Chemical Society National Meeting, New Orleans, Louisiana (8/22/99), "Functional Derivatives of Poly(4′-fluoro-2,5-diphenylsulfone) via Nucleophilic Aromatic Substitution", Bloom, P. D.; Sheares, V. V. *Polym. Prepr. (Am. Chem. Soc. Div. Polym. Chem.)* **1999**, *40(2)*, 567.

43. American Chemical Society National Meeting, New Orleans, Louisiana (8/22/99), "Gas Permeability Properties of Poly[[1,1′-biphenyl]-4,4′-diyl[2,2,2-trifluoro-1-(trifluoromethyl)ethylidene]]", Havelka, P.; Nagai, K.; Freeman, B. D.; Sheares, V. V. *Polym. Prepr. (Am. Chem. Soc. Div. Polym. Mat. Sci. and Eng.)* **1999**, *81*, 533.

44. American Chemical Society National Meeting, Anaheim, California (3/20/99), "Polar, Functionalized Materials via Emulsion Polymerization of *N,N*-Dialkyaminoisoprenes", Li, Y; Sheares, V. V. *Polym. Prepr. (Am. Chem. Soc. Div. Polym. Mat. Sci. and Eng.)* **1999**, *80*, 589.

45. American Chemical Society National Meeting, Anaheim, California (3/20/99), "Polar, Functionalized Materials via Free Radical Polymerization of Substituted Dienes", Sheares, V. V.; Li, Y.; Emmick, T. K.; Martin, C. D.; Jing, Y.; Beery, M. *Polym. Prepr. (Am. Chem. Soc. Div. Polym. Mat. Sci. and Eng.)* **1999**, *80*, 79.

46. American Chemical Society National Meeting, Boston, Massachusetts (8/23/98), "Polar, Functionalized Materials: Free Radical Polymerization of *N,N*-Diethylaminoisoprene", Sheares, V.V., Li, Y *Poly. Prepr. (Am. Chem. Soc. Div. Polym. Chem.)* **1998**, *39(2)*, 365.

47. American Chemical Society National Meeting, Dallas, Texas (3/29/98), "New Materials Via Ni(0)-Catalyzed Coupling Polymerization", Sheares, V.V.; Pasquale, A.J. *Polym. Prepr. (Am. Chem. Soc. Div. Polym. Mat. Sci. and Eng.)* **1998**, *78*, 46.

48. American Chemical Society National Meeting, Dallas, Texas (3/29/98), “Synthesis and Characterization of Soluble Poly[3-(*p*-substituted)benzoyl-2,5-thiophene] Derivatives”, Wang, J.; Sheares, V.V. *Poly. Prepr. (Am. Chem. Soc. Div. Polym. Chem.)***1998**, *39(1)*, 240.

49. American Chemical Society National Meeting, Las Vegas, Nevada (9/8/97), “Poly(3-benzoyl-2,5-thiophene) via Nickel-Catalyzed Coupling Polymerization”, Wang, J.; Vonhof, T.K.; Sheares, V.V. *Poly. Prepr. (Am. Chem. Soc. Div. Polym. Chem.)* **1997**, *38(2)*, 263.

50. American Chemical Society National Meeting, San Francisco, California (4/13/97), “Poly(*p*-phenylene) Derivatives via Nickel-Catalyzed Coupling of Aromatic Dichlorides” Pasquale, A.J.; Sheares, V.V. *Poly. Prepr. (Am. Chem. Soc. Div. Polym. Chem.)* **1997**, *38(1)*, 170.

Conference Posters

1. Polymers East Gordon Research Conference in Polymers, South Hadley, MA (6/15) "Supramolecular Polyester Adhesives Capable of Bonding and De-Bonding on Demand." Turner, S.A.; Ashby, V.S.

2. Polymers East Gordon Research Conference, South Hadley, MA (6/15) “Endgroup Functionalization of Poly(ethylene terephalate) Derivatives with Ureidopyrimidinone”, Houston, K.R., Jackson, A-M., Yost, R., Ashby, V.S.

3. American Chemical Society National Meeting, Dallas, TX (3/15) “Radiopaque Shape Memory Polymers”, Allison, L.; Houston, K.; Ashby, V.S. (undergraduate research symposium).

4. 11th National Graduate Research Polymer Conference, Baton Rouge, LA, (6/14), “Aliphatic Iodinated Polyesters as a Versatile Platform for Radiopaque Biomaterials and Nanoparticles”, Houston, K.R., Brosnan, S.M., Lee, Y.Z., Ashby, V.S.

5. American Chemical Society National Meeting, Dallas, TX (8/14), “One-way and two-way reversible shape shifting in semicrystalline elastomers”, Li, Q; Zhou, J.; Turner, S.; Brosnan, S.M.; Nykypanchuk. M.; Gang, O.; Ashby, V.S.; Dobrynin, A.V.; Sheiko, S.

6. American Chemical Society 247th National Meeting, Dallas, TX (4/13), LA, POLY/PMSE Poster Session, “Self-healing properties of functionalized poly(ether sulfone) thermoplastic elastomers”, Turner, S.A.; Sheiko, S.S.; Ashby, V.S.

7. Triangle Materials Research Society Meeting, Duke University, Durham, NC (8/13), “Highly Iodinated Nanoparticles for Use as Computed Tomography Contrast Agent”, Houston, K.R., Brosnan, S.M., Lee, Y.Z., Ashby, V.S.

8. Triangle Materials Research Society Meeting, Duke University, Durham, NC (8/13), "Varying grafting density of surface-tethered polymers on physically and chemically dynamic shape memory elastomers", Jackson, A-M.; Brosnan, S.; Sheiko, S.; Ashby, V.S.

9. American Chemical Society 247th National Meeting, Dallas, TX (4/13), LA (4/13), POLY/PMSE Poster Session, “Highly Iodinated Nanoparticles for Computed Tomography Contrast Agents”, Houston, K.R., Brosnan, S.M., Lee, Y.Z., Ashby, V.S.

10. Materials Research Society Meeting, (4/13) "Highly Iodinated Polyesters as Radiopaque Biomaterials: Exploring the Development of Novel Contrast Agents", Brosnan, S.M.; Wang, A.Z.; Ashby, V.S.

11. American Chemical Society 245th National Meeting, New Orleans, LA (4/13), POLY/PMSE Poster Session, “Two-way shape memory behavior of microscale semi-crystalline polyester features”, Turner, S.A.; Ashby, V.S.

12. American Chemical Society 245th National Meeting, New Orleans, LA (4/13), POLY/PMSE Poster Session, "Varying Grafting Density of Surface-Tethered Polymers on Physically and Chemically Dynamic Shape Memory Substrates", Jackson, A.M.S.; Brosnan, S.M.; Ashby, V.S.

13. 2011 Eastman Focus School Forum, Kingsport, TN (6/11), “Photo-Responsive Polyesters for Biodegradable Shape Memory Materials”, Rochette, J.M.; Ashby, V.S.

14. 3rd Triangle Soft Matter Workshop, Chapel Hill, NC (8/11), “Photo-Responsive Polyesters”, Rochette, J.M.; Ashby, V. S.

15. NC American Chemical Society 125th Sectional Conference, Raleigh, NC (9/11), “Light-Induced Shape Memory for Biomaterials Applications: Versatile Photo-Responsive Polyester Systems”, Rochette, J.M.; Ashby, V.S.

16. 3rd Triangle Soft Matter Workshop, Chapel Hill, NC (8/11), “Physically and Chemically Dynamic Surfaces: Functionalizable Shape Memory Polymers”, White, S.M.; Brown, A.; Ashby, V.S. “Physically and Chemically Dynamic Surfaces: Functionalizable Shape Memory Polymers” August 22, **2011**.

17. American Chemical Society National Meeting, Chicago, IL (3/07), “Click Functionalization of Aliphatic Polyesters”, Brown, A.H.; Sheares, V.V.

18. American Chemical Society National Meeting, Washington, D.C. (8/05), “Synthesis and characterization of poly(dialkylaminoisoprene) as gene delivery vectors”, Yang, Y.; Sheares, V.V.

19. American Chemical Society National Meeting, San Diego, CA, (3/05), “Anionic Synthesis of Polyaminoisoprenes as Gene Delivery Vectors”, Yang, Y.; Sheares, V.V.

20. American Chemical Society National Meeting, Boston, Massachusetts, (8/18/02), “Poly(2,5-benzophenone) Rod-Coil-Rod Block Copolymers and Their Phase Separation Behavior”, Hagberg, E.C.; Sheares, V.V.

21. American Chemical Society National Meeting, Boston, Massachusetts, (8/18/02), “Polymerization and Copolymerization of 2,5-Dichloro-3-(2-thiophenecarbonyl)thiophene by Nickel(0)-Catalyzed Coupling”, Hagberg, E.C.; Sheares, V.V.

22. American Chemical Society National Meeting, Orlando, Florida, (4/10/02), “Polymerization and Copolymerization of 2,5-Dichloro-3-(2-thiophenecarbonyl)thiophene by Nickel(0)-Catalyzed Coupling”, Hagberg, E.C.; Sheares, V.V.

23. Polymers East Gordon Conference, New London, New Hampshire (7/01), “Design, Fabrication and Properties of Polymer-Quasicrystal Composites”, Sheares, V.V and Bloom, P.D.

24. Polymers East Gordon Conference, New London, New Hampshire (7/01), “A New Methodology for the Functionalization of Poly(*p*-phenylene) Derivatives”, Sheares, V.V and Bloom, P.D.

25. American Chemical Society National Meeting, San Diego, California (4/1/00), “Copolymerization of Disubstituted, Polar Functionalized 1,3-Butadienes”, Bloom, P.D.; Sheares, V.V. *Polym. Prepr. (Am. Chem. Soc. Div. Polym. Chem.)* **2001**, *42(1)*, 472.

26. American Chemical Society National Meeting, San Diego, California (4/1/00), “High Performance Polymer Quasicrystal-Reinforced Composites”, Bloom, P.D.; Baikerakar, K.G.; Sheares, V.V. *Polym. Prepr. (Am. Chem. Soc. Div. Polym. Mat. Sci. and Eng.)* **2001**, *84*, 984.

27. American Chemical Society National Meeting, San Diego, California (4/1/00), “Synthesis and Characterization of Novel Poly(arylene ether ketone)s Containing Bithiophene Mesogens”, Bloom, P.D.; Ramaswamy, S.; Sheares, V.V. *Polym. Prepr. (Am. Chem. Soc. Div. Polym. Mat. Sci. and Eng.)* **2001**, *84*, 630.

28. American Chemical Society National Meeting, San Diego, California (4/1/00), “Endcapped Poly(*p*-phenylenes): Building Blocks for Coil-Rod-Coil Triblock Copolymers”, Hagberg, E.C.; Sheares, V.V. *Polym. Prepr. (Am. Chem. Soc. Div. Polym. Mat. Sci. and Eng.)* **2001**, *84*, 507.

29. American Chemical Society National Meeting, San Diego, California (4/1/01), “Synthesis of Poly(*p*-phenylene) Macromonomers and Multiblock Copolymers”, Bloom, P.D.; Sheares, V.V. *Polym. Prepr. (Am. Chem. Soc. Div. Polym. Mat. Sci. and Eng.)* **2001**, *84*, 424.

30. Midwest Regional ACS Meeting, St. Louis, Missouri (10/25/00), “Free Radical Polymerization of 2-[*N*-Benzyl-*N*-methylamino)methyl]-1,3-butadiene”, Wu, L. and Sheares, V.V.

31. Midwest Regional ACS Meeting, St. Louis, Missouri (10/25/00), “Synthesis and Polymerization of 2-(*N*-Piperidylmethyl)-1,3-butadiene”, Salazar, L.A. and Sheares, V.V.

32. Midwest Regional ACS Meeting, St. Louis, Missouri (10/25/00), “Free Radical Copolymerization of 2,3-Bis(cyanopropyl)-1,3-butadiene and 2,3-Bis(4-ethoxy-4-oxobutyl)-1,3-butadiene”, Rath, M.K. and Sheares, V.V.

33. Midwest Regional ACS Meeting, St. Louis, Missouri (10/25/00), “Synthesis and Characterization of Rod-Coil ABA Block Copolymers”, Hagberg, E. and Sheares, V.V.

34. Polymers East Gordon Conference (6/00), “New Polar, Functionalized Materials Based on Substituted Butadienes”, Sheares, V.V., Wu, L., Rath, M.K., Jing, Y.

35. American Chemical Society National Meeting, San Francisco, California (3/26/00), “Free Radical Polymerization of 2-[(*N,N*-Dialkylamino)methyl]-1,3-butadienes”, Wu, L.; Mohanty, A.K.; Sheares, V.V. *Polym. Prepr. (Am. Chem. Soc. Div. Polym. Chem.)* **2000**, *41(1)*, 97.

36. American Chemical Society National Meeting, San Francisco, California (3/26/00), “Free Radical Polymerization of 2-(2-Hydroxy-2-phenylpropyl)-1,3-butadiene”, Arvidson,

K.B.; Sheares, V.V. *Polym. Prepr. (Am. Chem. Soc. Div. Polym. Chem.)* **2000**, *41(1)*, 150.

37. American Chemical Society National Meeting, San Francisco, California (3/26/00), "Free Radical Polymerization of 2,3-Bis(cyanopropyl)-1,3-butadiene", Rath, M.K.; Arvidson, K.B.; Sheares, V.V. *Polym. Prepr. (Am. Chem. Soc. Div. Polym. Chem.)* **2000**, *41(1)*, 148.

38. American Chemical Society National Meeting, San Francisco, California (3/26/00, "Synthesis of Self-Crosslinking Poly(*p*-phenylene)s", Bloom, P.D.; Sheares, V.V. *Polym. Prepr. (Am. Chem. Soc. Div. Polym. Chem.)* **2000**, *41(1)*, 109.

39. American Chemical Society National Meeting, San Francisco, California (3/26/00), "Wear Properties of Novel Al-Cu-Fe Quasicrystal Polymer Composites", Bloom, P.D.; Sheares, V.V. *Polym. Prepr. (Am. Chem. Soc. Div. Polym. Mat. Sci. and Eng.)* **2000**, *82*, 89.

40. International Quasicrystal Conference, Stuttgart, Germany (9/20/99), "Development of New Polymer/Quasicrystal Composites", Bloom. P.D.; Sheares, V.V.

41. American Chemical Society National Meeting, New Orleans, Louisiana (8/22/99), "Free Radical Polymerization of Diethyl5,6-bis(methylene)decanedioate", Beery, M.; Sheares, V.V. *Polym. Prepr. (Am. Chem. Soc. Div. Polym. Mat. Sci. and Eng.)* **1999**, *81*, 144.

42. American Chemical Society National Meeting, Anaheim, California (3/20/99), "High Performance Quasicrystal-Reinforced Polymer Composites", Bloom, P.D.; Otaigbe, J.U.; Sheares, V.V. *Polym. Prepr. (Am. Chem. Soc. Div. Polym. Mat. Sci. and Eng.)* **1999**, *80*, 406.

43. American Chemical Society National Meeting, Anaheim, California (3/20/99), "Polar Functionalized Materials Via Free Radical Polymerization of 2-Cyanomethyl-1,3-butadiene", Jing, Y.; Sheares, V.V. *Polym. Prepr. (Am. Chem. Soc. Div. Polym. Mat. Sci. and Eng.)* **1999**, *80*, 149.

44. American Chemical Society National Meeting, Anaheim, California (3/20/99), "Fluorinated Polymer as a New Separations Membrane with a Low Dielectric Constant", Havelka-Rivard, P.; Sheares, V.V. *Polym. Prepr. (Am. Chem. Soc. Div. Polym. Mat. Sci. and Eng.)* **1999**, *80*, 147.

45. American Chemical Society National Meeting, Anaheim, California (3/20/99), "Free Radical Polymerization of 2-[(Dimethylamino)methyl)-1,3-butadiene", Emmick, T.K.; Martin, C.D.; Sheares, V.V. *Polym. Prepr. (Am. Chem. Soc. Div. Polym. Mat. Sci. and Eng.)* **1999**, *80*, 130.

46. American Chemical Society National Meeting, Dallas, Texas (3/29/98), "Synthesis of Poly[[1,1'-biphenyl]-4,4'-diyl[2,2,2-trifluoro-1-(trifluoromethyl)ethylidene]] by Nickel Catalyzed Coupling Polymerization", Havelka, P.A.; Sheares, V.V. *Poly. Prepr. (Am. Chem. Soc. Div. Polym. Chem.)* **1998**, *39(1)*, 304.

47. American Chemical Society National Meeting, Dallas, Texas (3/29/98), "Poly(*p*-phenylene)s Containing Sulfone Pendant Groups via Ni(0) Catalyzed Coupling of Aromatic Dichlorides", Pasquale, A.J.; Sheares, V.V. *Poly. Prepr. (Am. Chem. Soc. Div. Polym. Chem.)* **1998**, *39(1)*, 331.

48. Polymers East Gordon Conference (7/98), “Polar, Functionalized Materials from 2 and 2,3-Disubstituted Butadienes”, Sheares, V.V., Vonhof, T.K.; Jing, Y.; Beery, M.

IX. RESEARCH GRANTS

Proposals Funded (at UNC Chapel Hill)

1. Eastman Chemical, “Design synthesis and characterization of aromatic polyesters modified by endgroup functionalization”, $320,000 (6/14-5/16)
2. National Science Foundation, “Shape Memory Biomaterials Possessing Independent Photo and Thermal Switches for Dual and Triple Shape Memory”, $420,000 (8/12-7/15)
3. National Science Foundation, “Evaluation of AGEP Collaborative Research Training: North Carolina Alliance to Create Opportunity Through Education”, $149,480 (8/11-9/12)
4. National Science Foundation – MIRT, “Stressed Polymers – Exploiting Tension in Soft Matter”, co-PI: $60,000/year ($3,600,000 total) (8/11-7/14)
5. National Science Foundation, American Competitiveness and Innovation Fellowship, $316,000 (5/10-4/12)
6. University Cancer Research Fund, “Iodine Containing Shape Memory Polymers for CT Contrast Materials” $50,000/yr (4/11-5/12) (pilot grant)
7. Department of Energy, Energy Frontier Research Center, “Solar Fuel and Next Generation Photovoltaics”, $60,000/yr. (8/09-8/11)
8. National Science Foundation, “Functionalized Biocompatible, Biodegradable Elastomers”, $354,000 (5/07-4/10)
9. National Science Foundation, Alliance for Graduate Education and the Professoriate (AGEP) Program, $4,907,193 (2/05-9/11), UNC-CH (Lead), NC State and NC A&T (collaborators)
10. Collaborative Research: SBES Alliance: Atlantic Coast Social, Behavior and Economic Sciences Alliance, $541,406 (6/08-11/12), UNC-CH (Lead), Howard University, University of Miami, University of Florida, University of Maryland (collaborators)
11. National Science Foundation, Science and Technology Center, Solvent Free Processing Methods for Biocompatible Materials”, $42,663 (10/07-9/08); $54,601 (10/06-09/07), $59,590 (10/08-9/09)
12. Petroleum Research Fund, “Versatile Methodologies to Poly(2,5-benzophenone) Containing Coil-Rod-Coil Triblock Copolymers”, $80,000 (9/05-8/07)
13. National Science Foundation, “New Functionalized Biomaterials: Design, Synthesis and Evaluation of Polyesters, Polyanhydrides, Polyethers, and Polycarbonates from Diene-Based Monomers”, $400,000 (9/04-8/07)
14. Chevron Phillips, “Design, Synthesis and Characterization of Block Copolymer Blend Compatibilizers for Poly(phenylene sulfide)”, $30,000 (4/04-3/06)
15. Chevron Phillips, “Design of New Polyurethanes from Modified Oils”, $15,000 (7/04-12/05)

Proposals Funded (at Iowa State University)

1. U.S. Department of Energy/NETL, "Advanced Materials for PEM-Based Fuel Cell Material Systems", James McGrath, Virginia Tech, co-PI, $100,000 of $1,999,798 project to the Sheares group (8/02-7/04)

2. Ames Laboratory of the U.S. Department of Energy, "High Performance Polymers and Polymer/Quasicrystal Composites", $39,405 (10/01-9/02)
3. Iowa Soybean Promotion Board, "Development of Environmentally Friendly Soy Plastics", Professor Richard Larock, co-PI, $80,000 (10/01-8/02)

4. Iowa Energy Center, "Novel Plastics from Soybean Oil", Professor Richard Larock, co-PI, $281,677 (7/01-6/04)

5. Ames Laboratory of the U.S. Department of Energy, "High Performance Polymers and Polymer/Quasicrystal-Polymer Composites", $78,154 (10/00-9/01)

6. Dow Corporation Scholarship, $4,000 (6/00-7/01)

7. Iowa Soybean Promotion Board, "Development of Environmentally Friendly Soy Plastics", Professor Richard Larock, co-PI, $80,000 (9/00-5/01)

8. Iowa Soybean Promotion Board, "Development of Environmentally Friendly Soy Plastics", Professor Richard Larock, co-PI, $50,000 (5/00-8/00)

9. 3M Young Faculty Award, $10,000 (4/99-4/00)

10. Ames Laboratory of the U.S. Department of Energy, "Polyphenylenes and Polythiophenes for Membrane Applications", $59,700 (10/99-9/00)

11. Ames Laboratory of the U.S. Department of Energy, "High Performance Polymers and Polymer/Quasicrystal Composites", $39,405 (10/99-9/00)

12. Dow Corporation Scholarship, $4,000 (6/99-7/00)

13. Petroleum Research Fund (Type G), "New Functionalized Materials Based on Substituted Butadienes", $25,000 (9/99-9/01)

14. Iowa Soybean Promotion Board, "Polymeric Materials From Soybean Oil Using Facile, Inexpensive Free Radical Chemistry", Professor Richard Larock, co-PI, $39,130 (4/99-4/00)

15. Ames Laboratory of the U.S. Department of Energy, "Polyphenylenes and Polythiophenes for Membrane Applications", $71,400 (10/98-9/99)

16. Ames Laboratory of the U.S. Department of Energy, "High Performance Polymers and Polymer/Quasicrystal Composites", $35,687 (9/98-9/99)

17. Dow Corporation Scholarship, $4,000 (6/98-7/99)

18. Iowa Soybean Promotion Board, "Polymeric Materials From Soybean Oil Using Facile, Inexpensive Free Radical Chemistry", Professor Richard Larock, co-PI, $39,130 (4/98-4/99)

19. Special Research Initiation Grant Iowa State University, “Quasicrystals as Additives in Polymeric Materials”, Professor Joshua Otaigbe (Materials Science and Engineering), co-PI, $10,000 (1/98-1/99)

20. National Science Foundation Career Award, “Synthesis and Characterization of Poly-*N*,*N*-Dialkylaminoisoprenes”, $350,000 (1/98-1/03)

21. 3M Young Faculty Award, $10,000 (4/98-3/99)

22. DuPont Young Faculty Award, $75,000 (1/98-12/00)

23. Ames Laboratory of the U.S. Department of Energy, “Polyphenylenes and Polythiophenes for Membrane Applications”, $67,000 (10/97-9/98)

24. Ames Laboratory of the U.S. Department of Energy, “Polyphenylenes and Polythiophenes for Membrane Applications”, $12,000 (10/97-9/97)

25. Iowa Soybean Promotion Board, “Polymeric Materials From Soybean Oil Using Facile, Inexpensive Free Radical Chemistry”, Professor Richard Larock, co-PI, $39,130 (4/97-3/98)

26. Ames Laboratory of the U.S. Department of Energy, Materials Research Program, “High Performance Polymers”, $35,687 (10/97-9/98)

27. Ames Laboratory of the U.S. Department of Energy, Laboratory Directed Research and Development Grant, “Use of Molecular Simulations for Design of New Polymers For Membrane Gas Separations”, $17,500 (10/96-9/97)

28. University Research Grant, “New Polymers for Separations Membranes”, $11,500 (5/96-4/97)

29. National Science Foundation, “Synthesis and Characterization of New Poly(*p*-phenylene)s for Gas Separations Membranes”, $17,891 (7/96-12/97)

30. National Science Foundation, “New Aminoisoprene-Containing Block Copolymers”, $39,999 (6/97-6/98)

X. TEACHING RECORD

Courses taught at UNC

2004-2005

Chem 61, Introduction to Organic Chemistry I (undergraduate, 3 credit hours) Enrollment: 219	Fall 2004
Chem 61, Introduction to Organic Chemistry I (undergraduate, 3 credit hours) Enrollment: 175	Spring 2005

2005-2006

Chem 121, Synthesis of Polymers (graduate, 3 credit hours) Enrollment: 45	Fall 2005
Chem 62, Introduction to Organic Chemistry II (undergraduate, 3 credit hours) Enrollment: 209	Spring 2006

2006-2007

General Descriptive Chemistry I (undergraduate, 3 credit hours) Enrollment: 418	Fall 2006
Chemistry 262, Introduction to Organic Chemistry II (undergraduate, 3 credit hours) Enrollment: 319	Spring 2007

2007-2008

Chemistry 261, Introduction to Organic Chemistry I (undergraduate, 3 credit hours) Enrollment: 217	Fall 2007
Chemistry 262H, Introduction to Organic Chemistry II Honors (undergraduate, 3 credit hours) Enrollment: 70	Spring 2008

2008-2009

Chemistry 261, Introduction to Organic Chemistry I (undergraduate, 3 credit hours) Enrollment: 202	Fall 2008
Chemistry 262, Introduction to Organic Chemistry II (undergraduate, 3 credit hours) Enrollment: 211	Spring 2009

2010-2011

Chemistry 261, Introduction to Organic Chemistry I (undergraduate, 3 credit hours) Enrollment: 212	Fall 2010
Chemistry 262, Introduction to Organic Chemistry II (undergraduate, 3 credit hours) Enrollment: 223	Spring 2011

2011-2012

Chemistry 261, Introduction to Organic Chemistry I (undergraduate, 3 credit hours) Enrollment: 167	Fall 2011
Chemistry 262, Introduction to Organic Chemistry II (undergraduate, 3 credit hours) Enrollment: 213	Spring 2012

Teaching Evaluations

Summary of Student Course Evaluations

Course Scale: 1 (low)	**Semester** – 5 (high)	**Overall Assessment**	**Course/ Instructor**	**Teaching Award Recommendation**
Chem 61	F04	4.6	4.6	167 Yes / 5 No
Chem 61	S05	4.7	4.6	107 Yes / 2 No
Chem 121	F05	4.4	4.2	24 Yes / 4 No
Chem 62	S06	4.7	4.6	160 Yes / 7 No
Chem 101	F06	4.3	4.4	253 Yes / 31 No
Chem 262	S07	4.6	4.5	151 Yes/7 No
Chem 261*	F07	n/a	n/a	n/a
Chem 262H	S08	4.6	4.6	58 Yes/1 No
Chem 261	F08	4.5	4.5	149 Yes/6 No
Chem 262	S09	4.7	4.8	82Yes/1 No
Chem 261	S10	4.6	4.6	173 Yes/9 No
Chem 261	F10	4.6	4.8	4.7 (New online system)
Chem 262	S11	4.6	4.7	4.7
Chem 261	F11	4.7	4.8	4.8
Chem 262	S12	4.6	4.7	4.7

Scale 1(low)-5(high

*Team taught Chem 261 in F07 (no individual evaluations received)

Teaching Honors/Awards

Bowman and Gray Distinguished Professorship for Undergraduate Teaching (7/07-6/12)

J. Carlyle Sitterson Freshman Teaching Award (4/08)

UNC Chapel Hill Student Undergraduate Teaching Award (SUTASA) (4/09)

Johnston Teaching Award (4/13)