Keisha B. Walters

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PROFESSIONAL EXPERIENCE

Professor of Chemical Engineering — 2016-present
Mississippi State University, Mississippi State, MS

Associate Professor of Chemical Engineering — 2011-2016
Mississippi State University, Mississippi State, MS

Dow Faculty Fellow, Bagley College of Engineering — 2014-2016
Mississippi State University, Mississippi State, MS

Interim Associate Dean for Strategic Initiatives — 2013
Bagley College of Engineering
Mississippi State University, Mississippi State, MS

Assistant Professor of Chemical Engineering — 2005-2011
Mississippi State University, Mississippi State, MS

Research Assistant and Research Associate — 2002-2005
Center for Advanced Engineering Fibers and Films
Department of Chemical and Biomolecular Engineering
Clemson University, Clemson, SC

Research Assistant — 1998-2001
Department of Chemical Engineering
Clemson University, Clemson, SC

Research Associate — 1996-1998
Specialty Chemicals Division
Milliken Chemical, Spartanburg, SC

EDUCATION

Ph.D. Chemical Engineering, Clemson University — August 2005
Dissertation: Surface Grafting of pH-Responsive Polymer Layers

M.S. Chemical Engineering, Clemson University — August 2001
Thesis: Surface Segregation of Fluorinated and Hyperbranched Additives in LLDPE Films

B.S. Biological Sciences, Clemson University — May 1996
Minor in Environmental Science

HONORS / AWARDS

Dow Faculty Fellow, Bagley College of Engineering, Mississippi State University (2014-2015)

Outstanding Young Alumni Award, College of Engineering and Science, Clemson University (2014)

Raymond W. Fahien Award, American Society of Engineering Education (ASEE) (2012)

Outstanding Woman Faculty, Mississippi State University (2012)

Selected Participant, David Carlisle Hull Faculty Leadership Program, Mississippi State University (2011-2012)

Selected Participant, National Academy of Engineering, Frontiers of Engineering Education (FOEE) Symposium (2010)

StatePride Faculty Award, Mississippi State University (2010, 2011)

Best Paper Award, ASEE-SE Conference, Co-author: Judy Schneider (2010)

Bagley College of Engineering Academy of Distinguished Teachers, Mississippi State University (2010)

Thomas Evans Instructional Paper Award, ASEE SE, Co-authors: R. Toghiani and A. Minerick (2009)

Best Educational Paper Award, Swalm School of Chemical Engineering, MS State University (2008)

Best Technical Paper Awards, Swalm School of Chemical Engineering, MS State University, Co-Authors: R. Toghiani and A. Minerick (2006, 2007)

Ralph E. Powe Junior Faculty Enhancement Award, Oak Ridge Associated Universities (2006)

MSU IMAGE/NSBE Appreciation Award, Bagley Diversity Programs, MS State University (2006)

Outstanding Woman Graduate Student, President's Commission on the Status of Women, Clemson Univ. (2004)

GAANN (Graduate Assistance in Areas of National Need) Fellowship, Clemson University (2002-04)

Harshman Scholarship, Clemson University (1998-99)

MEMBERSHIPS

American Institute of Chemical Engineers (AIChE), 1998-present
Society of Plastics Engineers (SPE), 1999-present
American Society for Engineering Education (ASEE), 2002-present
American Chemical Society (ACS), 2003-present
American Society of Mechanical Engineers (ASME), 2014-present
AAAS, 2011-2012
Society for Biological Engineering (SBE), 2004-2011
Sigma Xi, 2006-2012

REFEREED JOURNAL PUBLICATIONS IN PRINT (Key: *Graduate students*; Undergraduate/high school students) [Impact Factor / # Citations]

1. Rowe, M.; Eyiler, E.; Walters, K.B. "Hydrolytic degradation of bio-based polyesters: Effect of pH and time," *Polymer Testing* (2016) 52:192–199, DOI: 10.1016/j.polymertesting.2016.04.015 [2.322 / NA]
2. Vasquez, Erick S.; Feugang, Jean M.*; Willard, Scott T.; Ryan, Peter L.; Walters, Keisha B.* "Bioluminescent magnetic nanoparticles as potential imaging agents for mammalian spermatozoa," Journal of Nanobiotechnology (2016) 14:20, DOI: 10.1186/s12951-016-0168-y [2.596 / 0]
3. A. B. M. Zakaria, Erick S. Vasquez, Keisha B. Walters, Danuta Leszczynska, "Functional holey graphene oxide: a new electrochemically transformed substrate material for dopamine sensing," *RSC Advances*, 2015, 5:107123-107135, DOI: 10.1039/C5RA19991C [3.84 / 0]
4. Vasquez, E.S.; *Cunningham, J.L.*; McMahan, J.B.; Simpson, C.L. and Walters, K.B.* "Fetuin-A Adsorption and Stabilization of Calcium Carbonate Nanoparticles in a Simulated Body Fluid," *Journal of Materials Chemistry B* (2015) 3:6411-6419, DOI: 10.1039/C5TB00565E [4.726 / 5] This article is part of a themed collection, 2015 Journal of Materials Chemistry B Hot Papers.
5. Vasquez, E.S.; *Cunningham, J.L.*; McMahan, J.B.; Simpson, C.L. and Walters, K.B.* "Front Cover" *Journal of Materials Chemistry B* (2015), 3, 6393-6394. DOI: 10.1039/C5TB90112J [4.726 / NA]
6. J. Lu, J. Wu, J. Chen, Y. Jin, T. Hu, K.B. Walters, S. Ding*, "Fabrication of pH-sensitive poly (2-(diethylamino) ethyl methacrylate)/palygorskite composite microspheres via Pickering emulsion

polymerization and their release behavior," *Journal of Applied Polymer Science* (2015) 132(26):42179, DOI: 10.1002/app.42179 [1.64 / 0]

7. *J.G. Monroe*; E.S. Vasquez; *Z.S. Aspin*, K.B. Walters, M.J. Berg, S.M. Thompson* "Electromagnetic induction by ferrofluid in an oscillating heat pipe," *Applied Physics Letters* (2015) 106(26):263901, DOI: 10.1063/1.4923400 [3.569 / 1]
8. Erick Vasquez, Keisha B. Walters, Keith Walters*, "Analysis of Particle Transport and Deposition of Micron-sized Particles in a 90° Bend Using a Two-fluid Eulerian-Eulerian Approach," *Aerosol Science and Technology* (2015) 49(9):691-703, DOI: 10.1080/02786826.2015.1062466 [3.155 / 1]
9. Jia Lu, Xiaoxiao Tian, Yeling Jin, Jing Chen, Keisha B. Walters, Shijie Ding*, "Pickering Emulsions Stabilized by Palygorskite Particles Grafted with pH-responsive Polymer Brushes" *RSC Advances* (2015) 5:9416-9424, DOI: 10.1039/C4RA14109A [3.708 / 5]
10. Mariola J. Edelmann; *Leslie B. Shack; Caitlin D Naske*; Keisha B. Walters; Bindu Nanduri*, "SILAC-Based Quantitative Proteomic Analysis of Human Lung Cell Response to Copper Oxide Nanoparticles," (2014) *PLoS ONE*, 9(12): e114390, DOI: 10.1371/journal.pone.0114390 [3.730 / 5]
11. *Samantha A. Ranaweera*, *Mathew D. Rowe*, Keisha B. Walters, Jose M. Rodriguez, Mark G. White, and William P. Henry, "Support of Dinuclear Copper Triketonate Complexes on Silica: Monolayer Loading from Complex Footprint and the First Crystallographically Characterized cis Dipyridine Adduct," *Inorganica Chimica Acta* (2014) 423:281–289, DOI: 10.1016/j.ica.2014.07.078 [2.041 / 1]
12. Jia Lu, Xiaoxiao Tian, Yeling Jin, Jing Chen, Keisha B. Walters, Shijie Ding*, "A pH Responsive Pickering Emulsion Stabilized by Fibrous Palygorskite Particles," *Applied Clay Science*, (2014) 102:113–120, DOI: 10.1016/j.clay.2014.10.019 [2.798 / 5]
13. *Mat Rowe*, *Ersan Eyiler*, Keisha B. Walters, "Nanomechanical Properties of Poly(trimethylene malonate) and Poly(trimethylene itaconate) During Hydrolytic Degradation," *Journal of Applied Polymer Science* (2014) 131(22): 41069, DOI: 10.1002/APP.41069 [1.600 / 0]
14. Vasquez, E.S., Bowser, J., Swiderski, C., Walters, K.B.*, and Kundu, S.* "Rheological Characterization of Mammalian Lung Mucus," *RSC Advances* (2014) 4:34780–34783, DOI: 10.1039/c4ra05055j [2.562 / 4]
15. *Siriwardana, K.*; *Gadogbe, M.*; *Ansar, S.M.*; Vasquez, E.S.; Collier, W.; Zou, S; Walters, K.B.; Zhang. D. "Ligand Adsorption and Exchange on Pegylated Gold Nanoparticles," *The Journal of Physical Chemistry C* (2014) 118(20):11111–11119, DOI: 10.1021/jp501391x [4.814 / 9]
16. Erick S. Vasquez, I-Wei Chu, and Keisha B. Walters*, "Janus Magnetic Nanoparticles with Bicompartmental Polymer Brush Prepared Using Electrostatic Adsorption to Facilitate Toposelective Surface-initiated ATRP," *Langmuir* (2014) 30(23):6858–6866, DOI: 10.1021/la500824r [5.008 / 11].
17. *Ersan Eyiler*, I-Wei Chu, Keisha B. Walters*, "Toughening of Poly(lactic acid) with Poly(trimethylene malonate)," *Journal of Applied Polymer Science* (2014) 131(20):40888, DOI: 10.1002/app.40888 [1.395 / 3]
18. Ding, Shijie; Shen, Youqing; Walters, Keisha; Chen, Jing; Jin, Yeling; "pH Responsive Behavior of Fe_3O_4@PDEA-PEGMA Core-Shell Hybrid Magnetic Nanoparticles," *International Journal of Polymeric Materials* (2014) 63(10), 487-492, DOI: 10.1080/00914037.2013.854219 [1.865 / 3]
19. *Ersan Eyiler*, Keisha Walters* "Magnetic iron oxide nanoparticles grafted with poly(itaconic acid) and poly(n-isopropylacrylamide)," *Colloids and Surfaces A: Physicochemical and Engineering Aspects* (2014) 444C: 321-325, DOI: 10.1016/j.colsurfa.2013.12.070 [2.333 / 3]
20. *Siyam M. Ansar*, *Ganganath S. Perera*, George Salomon, Erick S. Vasquez, *Shengli Zou*, Charles U. Pittman, Jr., Keisha B. Walters, and Dongmao Zhang, "Mechanistic Study of Continuous Reactive Aromatic Organothiol Adsorption onto Silver Nanoparticles," *The Journal of Physical Chemistry C* (2013) 117(51) 27146-27154, DOI: 10.1021/jp4090102 [4.814 / 16]

21. *Vangala, K.*; *Siriwardana, K.*; *Vasquez, E.S.*; Xin, Y.; Pittman, C.U.; Walters, K.B.; Zhang, D.* "Simultaneous and Sequential Protein and Organothiol Interactions with Gold Nanoparticles," *The Journal of Physical Chemistry C* (2013) 117(3) 1366-1374, DOI: 10.1021/jp310085u [4.805 / 10]
22. *Naske, C.D.*; Polk, P.; *Wynne, Z.*; Speed, J.; Holmes, W.E.; Walters, K.B.* "Postcondensation Filtration of Pine and Cottonwood Pyrolysis Oil and Impacts on Accelerated Aging Reactions" *Energy & Fuels* (2012) 26(2), 1284-1297, DOI: 10.1021/ef200541d [3.326 / 11]
23. *Trim, M.W.**; Horstemeyer, M.F.; Rhee H.; Park, S.-J.; El Kadiri H.; Williams, L.; Liao, J.; Walters, K.B.; McKittrick, J. "The effects of water and microstructure on the mechanical properties of bighorn sheep (*Oviscanadensis*) horn keratin," *Acta Biomaterialia* (2011) 7(3), 1228-1240,DOI: 10.1016/j.actbio.2010.11.024 [3.975 / 18]
24. Ding, S.; Floyd, A.; Walters, K.B.* "Comparison of Surface Confined ATRP and SET-LRP Syntheses for a Series of Amino (Meth)acrylate Polymer Brushes on Silicon Substrates," *Journal of Polymer Science Part A: Polymer Chemistry* (2009) 47(23), 6522-6560, DOI: 10.1002/pola.23698 [3.971 / 47]
25. *Martin, H.J.*; Schulz, K.H.; Walters, K.B. "Piranha Treated Titanium Compared to Passivated Titanium as Characterized by XPS," *Surface Science Spectra* (2008) 15(1), 23-30, DOI: 10.1116/11.20070702 [NA / 1]
26. *Martin, H.J.*; Schulz, K.H.; Bumgardner, J.D.; Walters, K.B., "An XPS Study on the use of Triethoxsilylbutyraldehyde to Bond Chitosan to a Titanium Surface," *Applied Surface Science* (2008) 254(15), 4599-4605 [1.616 / 43]
27. Walters, K.B.; Hirt, D.E. **"**Synthesis and Characterization of a Tertiary Amine Polymer Series from Surface-Grafted Poly(tert-Butyl Acrylate) via Diamine Reactions,**"** *Macromolecules* (2007) 40(14), 4829-4838 [4.539 / 12]
28. *Martin, H.J.*; Schulz, K.H.; Bumgardner, J.D.; Walters, K.B. "An XPS Study on the use of 3-Aminopropyltriethoxysilane to Bond Chitosan to a Titanium Surface," *Langmuir* (2007) 23(12), 6645-6651 [3.898 / 87]
29. Walters, K.B., and Hirt, D.E., "Grafting of End-functionalized Poly(tert-butyl acrylate) to Poly(ethylene-co-acrylic acid) Film," *Polymer* (2006) 47(19), 6567-6574 [3.573 / 15]
30. *Ramirez, M.X.*; Walters, K.B.; Hirt, D.E., "Relationship Between Erucamide Surface Concentration and Coefficient of Friction of LLDPE Film," *Journal of Vinyl and Additive Technology* (2005) 11(1), 9-12 [1.11 / 13]
31. Walters, K.B.; Schwark, D.W.; Hirt, D.E., "Surface Characterization of LLDPE Films Modified with Fluorinated Additives," *Langmuir* (2003) 19(14), 5851-5860 [3.898 / 49]
32. *Sakhalkar, S.S.*; Walters, K.B.; Hirt, D.E.; Miranda, N.R.; Roberts, W.P., "Surface Characterization of LLDPE Film Containing Glycerol Monosterate," *Journal of Plastic Film and Sheeting* (2002) 18(1), 33-43 [1.120 / 4]

REFEREED JOURNAL PUBLICATIONS IN PRESS (Key: *Graduate students*; Undergraduate/high school students) [Impact Factor / # Citations]

1. Walters, D.K.*; Walters, K.B. "Summer Instruction in Fluid Mechanics: Increasing High-School Student Interest in and Understanding of Engineering Concepts," *Journal of Pre-College Engineering Education Research (J-PEER),* **Accepted** [NA / NA]

REFEREED JOURNAL PUBLICATIONS UNDER REVIEW (Key: *Graduate students*; Undergraduate/high school students) [Impact Factor / # Citations]

1. *Zhang, Laibao*; Sosa, Andres; Walters, Keisha; Impacts of Thermal Processing on the Physical and Chemical Properties of Pyrolysis Oil Produced by a Modified Fluid Catalytic Cracking Pyrolysis Process, *Energy & Fuels*, **Under Review** submitted 05-21-16 [2.835 / NA].
2. *Mohan, Vijitha*; *Naske, Caitlin*; *Varadarajan, Anandavalli*; Walters, Keisha*, "FTIR Spectroscopic Study on the Hydroxide-catalyzed Cleavage of Ester Bonds in Phosphatidylcholine" *The Journal of Physical Chemistry: B*, **Under Review** (submitted 08-28-2015) [3.302 / NA]
3. *Anandavalli Varadarajan*, Andres F. Chapparo, Keisha B. Walters* "Impacts of centrifugal filtration for solids removal in pyrolysis oil," *Energy & Fuels*, **Under Review** (submitted 08-07-2015) [2.790/NA]
4. *Mathew D. Rowe*, *Ersan Eyiler*, Keisha B. Walters, "Synthesis and Characterization of Bio-based Polyesters: Poly(trimethylene malonate) and Poly(trimethylene itaconate)," *Materials Science and Engineering: C*, **Under Review** (submitted 06-02-2015) [2.596 / NA]

REFEREED BOOK CHAPTERS

1. Ding, S.; Walters, K.B. "Comparisons of Surface Confined ATRP and SET Polymerizations," *invited contribution* for Polymer Brushes: Substrates, Technologies and Properties, (ed) Mittal Vikas, Taylor and Francis, CRC Press (2012), ISBN: 9781439857946 [cited: 2].
2. Burgreen, G.; Hester, R.; Soni, B.; Thompson, D.; Walters, D.K.; Walters, K.B. "DigitalLung: Application of High-Performance Computing to Biological System Simulation," in Advances in Computational Biology, AEMB (Advances in Experimental Medicine and Biology) Springer Series (2010) Vol. 680, 573-584, DOI: 10.1007/978-1-4419-5913-3_63 [cited: 1].
3. Walters, K.B. "Tethered Stimuli-Responsive Polymer Films," *invited contribution* for Smart Coatings III, American Chemical Society Symposium Series, eds. J. Baghdachi, T. Provder (2010),Vol. 1050, 21–30, DOI: 10.1021/bk-2010-1050.ch002.

PATENTS

1. I-Wei Chu; Ersan Eyiler; Keisha B. Walters "Use of oxidation and pH-shift to selectively remove solubilized metals," Provisional Patent Application, Mississippi State University, filed December 20, 2012.
2. "Polymeric Structures with Patterned Reactivity," Douglas E. Hirt, Scott M. Husson, Keisha B. Walters, and Chun Zhang, U.S. Patent 7,727,300, filed October 24, 2006 (Serial No. 11/585,664), issued June 1, 2010.
3. "Multilayer Polymer Structures," Keisha B. Walters, Douglas E. Hirt, Scott M. Husson, U.S. Provisional Patent (Serial No. 60/729,620), filed October 24, 2005.

REVIEWED CONFERENCE PAPERS (Key: *Graduate students*; Undergraduate/high school students)

1. *Ersan Eyiler* and Keisha B. Walters, "Magnetic Nanoparticles Surface Modified with Stimuli-Responsive Polymers: An Initial Study of Stimuli-Triggered Phase Transfer," 46th IUPAC World Polymer Congress (MACRO 2016), Istanbul, Turkey, July 17-21, 2016 [*Upcoming*].
2. Juganta Roy, Henry Pinto, Erick Vasquez, Keisha Walters, Jerzy Leszczynski, "First principles studies of gold nanoparticles and end terminated thiolates," ACS 250th National Meeting, August 2015, Boston, MA.
3. *Swati Kumari*, Cayla Cook, Evan Prehn, Erick S. Vasquez, Keisha B. Walters, "Synthesis and characterization of temperature and pH responsive polymers grafted from surface-modified magnetic nanoparticles," Proceedings of the SMATDAP 2015 Annual Review Symposium, August 10-11, 2015, Tulane University, New Orleans, LA.

4. Vasquez Guardado, Erick; Gabe Monroe; Berg, Matthew; Thompson, Scott; Walters, Keisha, "Utilization of Ferrofluids in an Oscillating Heat Pipe for Thermal-to-Electrical Energy Conversion," Proceedings for the 1st Thermal and Fluids Engineering Summer Conference, American Society of Thermal and Fluids Engineers (ASTFE), New York, NY, August 9-12, 2015.
5. *J. Gabriel Monroe*, Erick S. Vasquez, *Zachary S. Aspin*, John D. Fairley, Keisha B. Walters, Matthew J. Berg, Scott M. Thompson, "Energy harvesting via ferrofluidic induction," 2015 SPIE Sensing Technology + Applications, April 20-24, 2015, Baltimore, MD, International Society for Optics and Photonics, paper ID: 94930G-94930G-7.
6. Erick S. Vasquez; *Janice L. Cunningham*; Justin McMahan; C. LaShan Simpson; Keisha B. Walters*, "Fetuin-A Therapy: A New Approach for the Treatment of Vascular Calcification in Chronic Kidney Disease Patients," Society for Biomaterials (SFB) Annual Meeting and Exposition, April 15-18, 2015, Charlotte, NC, paper ID: 34.
7. *Janice L. Cunningham*; Erick S. Vasquez; Keisha B. Walters; LaShan Simpson*, "Human Fetuin-A Treatment for Demineralization of Arteriosclerosis," Society for Biomaterials (SFB) Annual Meeting and Exposition, April 15-18, 2015, Charlotte, NC, paper ID: 117.
8. *Andrew Weeks*, Erick Vasquez, Keisha Walters, Amol Janorkar, "Aminated Elastin-like Polypeptide Coatings for Liver Cell Culture," Society for Biomaterials (SFB) Annual Meeting and Exposition, April 15-18, 2015, Charlotte, NC, paper ID: 38.
9. Chaparro, A.F.; Vásquez, E.S.; Walters, K.B. "Synthesis and Characterization of Hybrid Polymer-Magnetic Coatings," SHPE (Society of Hispanic Professional Engineers) Conference 2014, November 5-9, 2014, Detroit, MI.
10. *J. Cunningham*, C.L. Simpson, E.S. Vasquez, K.B. Walters "Targeted Therapy to Treat Cardiovascular Calcification in ESRD Patients," 30th Southern Biomedical Engineering Conference, Society For Biomaterials, April 10-13, 2014, Gulfport, MS.
11. *E.S. Vasquez*, I. Chu, K.B. Walters, "Stimuli-responsive biphasic-polymer Janus magnetic nanoparticles prepared via electrostatic interactions and surface-confined ATRP," POLY: Division of Polymer 245th ACS National Meeting, New Orleans, Louisiana, April 7-11, 2013, paper ID: 299.
12. *K.H. Parsons*, K.B. Walters, D.K. Walters, R. Hester, C.L. McCormick, "Gold nanoparticles via polymer micelle molecular templates for pulmonary imaging," POLY: Division of Polymer Chemistry 245th ACS National Meeting, New Orleans, Louisiana, April 7-11, 2013, paper ID: 287.
13. Ding, S.; Walters, K.B. "Fe_3O_4-PDEA-PEGMA core-shell pH responsive magnetic nanoparticles," PMSE: Division of Polymeric Materials Science and Engineering, 245th ACS National Meeting, New Orleans, Louisiana, April 7-11, 2013, paper ID: 317.
14. Toghiani, R.K., Minerick, A.R., Walters, K. B., Hill, P. J., Henington, C. Engineering Future Chemical Engineers: Incorporation of Process Intensification Concepts into the Undergraduate Curriculum. 2012 ASEE Annual Conference Proceedings, San Antonio, TX, June 10-13, 2012, AC 2012-3670.
15. *Rowe, M.D.*; *Eyiler, E.*; Chu, I.; Walters, K.B. "Effects of Hydrolytic Degradation on the Mechanical Properties of Renewable Bioplastics: Poly(trimethylenemalonate) and Poly(trimethyleneitaconate)," Proceedings of ANTEC – Society of Plastics Engineers (SPE), Orlando, FL, April 2-4, 2012.
16. *E.S. Vasquez*, W.B. Nicholson, K.B. Walters "Surface Modification of Iron Oxide (Fe_3O_4) Micro- and Nano-particles with Stimuli Responsive Polymers," Nanotech Conference & Expo 2011, Technical Proceedings: Nanotechnology 2011: Advanced Materials, CNTs, Particles, Films and Composites, Chapter 6: Polymer & Soft Nanotechnology, Boston, MA, June 13-16, 2011, 1:612-615.
17. Toghiani, R., Minerick, A.R., Walters, K.B., Hill, P.J., Henington, C. "Engineering Future Chemical Engineers: Incorporation of Process Intensification Concepts into the Undergraduate Curriculum," 2011 ASEE Annual Conference & Exposition, Vancouver, BC, Canada, June 26-29, 2011, AC 2011-1239.
18. *Rowe, M.D.*; *Eyiler, E.*; Walters, K.B. "pH and Time Dependent Hydrolytic Degradation of Bioplastics from Renewable Monomers," Proceedings of ANTEC, Society of Plastics Engineers (SPE), Boston, MA, May 1-5, 2011,69, 306-311.

19. Walters, D.K.; Walters, K.B. "Introducing Talented High School Students to Engineering Via Fluid Mechanics," 2010 ASEE National Conference, Louisville, KY, June 20-23, 2010, AC 2010-1097.
20. Walters, K.B.; Minerick, A.R.; *Srivastava, S.*; *Hall, J.I.*; *Parker, A.*; *Thomas, H.*; *Leonard, K.* "Instructor and Student Perspectives on a Graduate Professional Development Course: Career Issues for Women in Engineering," 2010 ASEE National Conference, Louisville, KY, June 20-23, 2010, AC 2010-467.
21. Toghiani, R.; Walters, K.B.; Hill, P.H.; Minerick, A.R.; Henington, C. "Engineering Future Chemical Engineers: Incorporation of Process Intensification Concepts in to the Undergraduate Curriculum," 2010 ASEE National Conference, Louisville, KY, June 20-23, 2010, AC 2010-1882.
22. Schneider, J.; Walters, K.B. "Interdisciplinary and Experiential Approach Towards the Teaching of Materials Science and Engineering," Southeastern Regional ASEE Conference, April 18-20, 2010, Virginia Polytechnic Institute and State University, Blacksburg, VA. [Best Paper Award]
23. *Rowe, M.D.*; Walters, K.B. "Synthesis and Characterization of Bioplastics from Polyfunctional Renewable Monomers," Proceedings of ANTEC – Society of Plastics Engineers (SPE), Chicago, IL, June 22-24, 2009, 67, 508-512.
24. Minerick, A.R.; Walters, K.B., Elmore, B.B; Toghiani, R.; Hill, P.J.; Hernandez, R.; French, T. "Cross-Curricular Topic Inventory: Strategic Topic Placement and Resulting Student Accountability," ASEE Annual Conference Proceedings, Chemical Engineering Division, Austin, TX (2009) AC 2009-2241.
25. Toghiani, R.; Minerick, A.R.; Walters, K.B., "Making the Connections: Facilitation Student Integration of Chemical Engineering Concepts into a Coherent Framework," ASEE Annual Conference Proceedings, Chemical Engineering Division, Pittsburgh, PA (2008) AC 2008-2170.
26. *Rowe, M.D.*, Smith, E.M., Walters, K.B., "Development of Renewable Polymers From 1,3-Propane Diol and Malonic Acid," Proceedings of ANTEC – Society of Plastics Engineers, Cincinnati, OH (2007) 65, 1562-1568.
27. *Mohan, V.*, Hubbard, L.E., Walters, K.B., "Phosphate Ester Cleavage in Phospholipids," Proceedings of the MS Academy of Sciences 71st Annual Meeting (2007) 52(1), 80-81.
28. *Rowe, M.D.*, Smith, E.M., Walters, K.B., "Development of Renewable Polymers From 1,3-Propane Diol and Malonic Acid," Proceedings of the MS Academy of Sciences 71st Annual Meeting (2007) 52(1), 81.
29. Aich, S., Walters, K.B., Minerick, A.R., "Nano-Encapsulation of Trace Metal Impurities in Biodiesel," Proceedings of the MS Academy of Sciences 71st Annual Meeting (2007) 52(1), 77.
30. Walters, K.B., Hirt, D.E., "Tethered Stimuli-Responsive Polymer Films," Proceedings of the ACS Smart Coatings Symposium, invited paper (2007) 205-212.
31. Walters, K.B., Rugh, A., and Hirt, D.E., "Melt Grafting of End-Functionalized Poly(tert-butyl acrylate) to Silicon Substrates," Proceedings of ANTEC - Society of Plastics Engineers (2005) 3273-3277.
32. Walters, K.B., Wang, W., Harris, R.P., and Hirt, D.E., "Chemically Tailored Polymeric Layers Grafted To and From a Copolymer Film Surface," Proceedings of ANTEC – Society of Plastics Engineers (2004) 3859-3864.
33. Walters, K.B. and Hirt, D.E., "Polymer Layers Grown From Gold and Polymer Film Via Surface-Confined ATRP," Proceedings of ANTEC – Society of Plastics Engineers (2003) 2793-2797.
34. Walters, K.B. and Hirt, D.E., "Migration of Fluorinated Additives to HDPE Film Surfaces," Proceedings of ANTEC – Society of Plastics Engineers (2001) 2644-2648 [cited:3].
35. McKibbin, J.P., *Sankhe, S.Y.*, Bishop, K.A., and Hirt, D.E., "Comparison of Techniques to Measure Additive Diffusivity in Polymer Films," Proceedings of ANTEC – Society of Plastics Engineers (2000) 3497-3501.

ONLINE SCHOLARLY PUBLICATIONS

1. Walters, Keisha B. "Why we created glow in the dark magnetic sperm," BioMed Central Blog Network (2016) http://blogs.biomedcentral.com/on-biology/2016/03/23/created-glow-dark-magnetic-sperm/.

PUBLICATIONS IN PREPARATION (Key: *Graduate students*; Undergraduate/high school students)

1. *Laibao Zhang*, Andres Chaparro Sosa and Keisha B. Walters, "Impacts of Thermal Processing on the Physical and Chemical Properties of Pyrolysis Oil", submission planned to *Energy & Fuels*, Sept. 2015.
2. *Mohan, V.*, Walters, K.B. "Ester Cleavage Promoted by Lithium Hydroxide in a Series of Phospholipids," planned submission in *Biophysical Journal*, Sept. 2015.
3. Walters, K.B.; Ding, S.; Vasquez, E.S. "A Study of the pH and Thermo-responsive Behavior of a Series of Amino (Meth)acrylate Polymer Brushes on Silicon Substrates," planned submission to *Macromolecules*, Sept. 2015.
4. *Cornell, A.L.;* Frisch, J., Walters, K.B.* "Chemical Grafting and Optical Characterization of Surface-modified EAA-OBC and EAA-BDMF Polymer Films," submission planned to *Journal of Polymer Science Part A: Polymer Chemistry*, Oct. 2015.
5. *Rowe, M.D.*; Smith, E. M.; Terrell, L.B.; Walters, K.B. "Synthesis, Characterization, and Degradability of Renewable Copolymers," planned submission to *Polymer*, Oct. 2015.
6. Vasquez, E.S.; Walters, K.B.; Kundu, S. "Nanoparticle-Biopolymer Effects on the Rheological Properties of Mucus, planned submission in *Biomacromolecules*, Nov. 2015.
7. *Laibao Zhang*, Andres Chaparro Sosa and Keisha B. Walters, "Alcohol Addition for the Stabilization of Pine Clear Wood Pyrolysis Oil" submission planned to *Energy & Fuels*, Oct. 2015.
8. *Vasquez, E.S.*; *Stein, N.*; Walters, K.B.; Walters, D.K., "Multiscale Simulations of Particle Transport in a Physiologically Realistic Bifurcation Lung Geometry," planned submission to *Journal of Aerosol Science*, November 2015.
9. *Cornell, A.*; Lamb, M.; *Rowe, M.D.*; Walters, K.B. "Physiochemical Properties of Human Lung Tissue and Interactions with Fluid Surrogates," submission planned to *Biomacromolecules*, December 2015.
10. *Naske, C.D.*; Speed, J.; Rodriquez, J.; Holmes, W.E.; Walters, K.B. "Effects of Methanol Addition on Fractionated and Total Pine Needle Pyrolysis Oil during Accelerated Aging," planned submission in *Biomass & Bioenergy*, Dec. 2015.
11. Aich, S.; Walters, K.B.; Minerick, A.R. "Silica Shell Nano-encapsulation of Colloidal Nanoparticles: A Review," planned submission in the *Beilstein Journal of Nanotechnology*, Jan. 2016.
12. *Trim, W.*; Gurtowski, C.; Ohno, M.; Park, S.J.; Walters, K.B.; Horstemeyer, M. "Bio-inspired Composites: An Overview of Structures, Properties, and Mimicry in Engineering Design," for submission in *Composites Science and Technology*, Feb. 2016.
13. *Naske, C.D.*; Speed, J.; Walters, K.B. "Evolution of Phase Separation and Resultant Properties of Pine Pyrolysis Oil," planned submission in *Energy & Fuels*, Feb. 2016.
14. *Cornell, A.*; Lamb, M.; *Rowe, M.D.*; Walters, K.B. "Physiochemical Properties of Human Lung Tissue and Interactions with Fluid Surrogates," planned submission to *Biophysical Journal*, March 2016.
15. *Wynne, P.Z.*; Walters, K.B. "Pyrolysis Oil Filtration Methods: A Review," planned submission in *Energy & Fuels*, April 2016.

PRESENTATIONS—Technical (Key: **Presenters**; *Graduate students*; Undergraduate/high school students)

1. **Keisha B. Walters**, "Material Design: Surface Modification, Surface-Initiated Polymerization, and Stimuli Responsive Polymers," NSF EPSCoR Track II MS-LA SMATDAP Consortium Seminar Series, March 24, 2016.

2. **Keisha B. Walters**, "Material design . . . from molecular structure to engineering function," School of Chemical, Biological and Materials Engineering, University of Oklahoma, Norman, OK, December 8, 2015 [***Invited Talk***].

3. Erick S. Vasquez, Greg W. Burgreen, **Keisha B. Walters** and D. Keith Walters, "Implementation of a Two-Fluid Eulerian-Eulerian Modeling Approach for Particle Transport and Deposition in Different Case Studies," 2015 AIChE Annual Meeting, Salt Lake City, UT, November 11, 2015.
4. **Erick S. Vasquez**, *J. Gabriel Monroe*, Zachary S. Aspin, *Swati Kumari*, Matthew J. Berg, Scott M. Thompson and Keisha B. Walters, "Thermal, Stability, and Morphological Effects of Multicore Surface-Functionalized Magnetic Nanoparticles," 2015 AIChE Annual Meeting, Salt Lake City, UT, November 10, 2015.
5. **Erick S. Vasquez**, *Swati Kumari*, Erik S. Antonio and Keisha B. Walters, "Counterion, pH, and Temperature Effects on Poly(dimethylaminoethyl methacrylate) Thin Films," 2015 AIChE Annual Meeting, Salt Lake City, UT, November 10, 2015.
6. *Laibao Zhang* and **Keisha B. Walters**, "Alcohol Stabilization of Bio-Oils during High Temperature Treatment," 2015 AIChE Annual Meeting, Salt Lake City, UT, November 10, 2015.
7. Erick S. Vasquez, Elizabeth Duggan, Jordan Metcalf, **Santanu Kundu** and Keisha B. Walters, "Surface and Rheological Effects of Mucus/Mucin Coupled with Chitosan-Coated Gold Nanoparticles," 2015 AIChE Annual Meeting, November 9, 2015, Salt Lake City, UT.
8. *Kumari, S.*; Cook, C.; **Varadarajan, A.**; Walters, K.B. "CZF@PNIPAM as a temperature responsive material for biomedical applications," poster presentation, 3rd Annual APTEC November meeting, Tulane University, New Orleans, LA, November 9, 2015.
9. *Swati Kumari*, Erick S. Vasquez, D. Keith Walters, **Keisha B. Walters**, "Surface-modified nanoparticles designed for biomedical applications with computational simulation validation of particle transport within the human lung," poster presentation, 2015 National NSF EPSCoR Meeting, Portsmouth, New Hampshire, November 1-4, 2015 [***Invited Talk***].
10. Juganta Roy, Henry Pinto, Erick Vasquez, Keisha Walters, Jerzy Leszczynski, "First principles studies of gold nanoparticles and end terminated thiolates," ACS 250th National Meeting, Boston, MA, August 18, 2015.
11. Vasquez Guardado, Erick; *Gabe Monroe*; Berg, Matthew; Thompson, Scott; **Walters, Keisha**, "Utilization of Ferrofluids in an Oscillating Heat Pipe for Thermal-to-Electrical Energy Conversion," Thermal and Fluids Engineering Summer Conference, American Society of Thermal and Fluids Engineers (ASTFE), New York, NY, August 9-12, 2015.
12. Erick S. Vasquez; Santanu Kundu; **Keisha B. Walters**, "Rheological and Nanomechanical Characterization of Mammalian Lung Mucus," Thermal and Fluids Engineering Summer Conference, American Society of Thermal and Fluids Engineers (ASTFE), New York, NY, August 9-12, 2015.
13. *Swati Kumari*, **Cayla Cook**, Keisha B. Walters "CZF@PNIPAM as temperature responsive material for biomedical applications," poster presentation, SMATDAP 2015 Annual Review Symposium, Tulane University, New Orleans, LA, August 10-11, 2015.
14. ***Swati Kumari***, Cayla Cook, Evan Prehn, Erick S. Vasquez, Keisha B. Walters, "Synthesis and characterization of temperature and pH responsive polymers grafted from surface-modified magnetic nanoparticles," poster presentation, SMATDAP 2015 Annual Review Symposium, Tulane University, New Orleans, LA, August 10-11, 2015.
15. Erick S. Vasquez, **Evan M. Prehn**, Keisha B. Walters "Thermal Fracturing of Modified Magnetic Nanoparticles," 2015 Summer Undergraduate Research Symposium, Mississippi State University, Mississippi State, MS, July 30, 2015.
16. **Justyn Forehand**, *Mahla Zabet*, Ornella Tempo, Erick Vasquez, Keisha Walters, Santanu Kundu "Effect of pH and Temperature on poly(n-isopropylacrylamide-co-methacrylic acid)," 2015 Summer Undergraduate Research Symposium, Mississippi State University, Mississippi State, MS, July 30, 2015.
17. **Erik S. Antonio**, Erick S. Vasquez, I-Wei Chu, Keisha B. Walters "Swelling of Poly(dimethylamino ethylmethacrylate) Brushes as a Function of pH and Salt-type Monitored by in situ Ellipsometry and AFM," 2015 Summer Undergraduate Research Symposium, Mississippi State University, Mississippi State, MS, July 30, 2015.

18. **Ornella Tempo**; Erick Vasquez, Justyn Forehand; Santanu Kundu, Keisha B. Walters "Characterization of Poly (N-Isopropylacrylamide-Co-Methacrylic Acid)," 2015 Summer Undergraduate Research Symposium, Mississippi State University, Mississippi State, MS, July 30, 2015.
19. *Swati Kumari*, **Cayla Cook**, Evan Prehn, Erick S. Vasquez, Keisha B. Walters, "Synthesis and characterization of thermo and pH responsive polymers grafted from APTS-coated magnetic nanoparticles," 2015 Summer Undergraduate Research Symposium, Mississippi State University, Mississippi State, MS, July 30, 2015.
20. **Walters, K.B.** "Utilizing Stimuli Responsive Polymers in Functional Nanoparticle Design" 15th Southern School on Computational Chemistry and Materials Science, Jackson State University, Jackson, MS, July 23-24, 2015 [**Invited Presentation**].
21. **Thompson, S.M.**, *Monroe, J.G.*, Vasquez, E.S., *Aspin, Z.S.*, Berg, M.J., Walters, K.B., "Thermal-to-Electrical Energy Conversion and Enhanced Heat Transfer with a Ferrofluid Oscillating Heat Pipe," ASME International Technical Conference and Exhibition on Packaging and Integration of Electronic and Photonic Microsystems (InterPACK), San Francisco, CA, July 6-9, 2015.
22. ***J. Gabriel Monroe***, Erick S. Vasquez, *Zachary S. Aspin*, John D. Fairley, Keisha B. Walters, Matthew J. Berg, Scott M. Thompson, "Energy harvesting via ferrofluidic induction," 2015 SPIE Sensing Technology + Applications, April 20-24, 2015, Baltimore, MD.
23. **Antonio, Erik, S.**; Vasquez, Erick, S.; Walters, Keisha B., "Counterion and pH Effects on the Stimuli-Responsive Polymer Poly(dimethylamino ethylmethacrylate)," poster presentation, Mississippi State University Undergraduate Research Symposium, Mississippi State, MS, April 23, 2015 **[2nd Place Award]**.
24. **Erick S. Vasquez**; *Janice L. Cunningham*; Justin McMahan; C. LaShan Simpson; Keisha B. Walters, "Fetuin-A Therapy: A New Approach for the Treatment of Vascular Calcification in Chronic Kidney Disease Patients," Society for Biomaterials (SFB) Annual Meeting and Exposition, April 15-18, 2015, Charlotte, NC.
25. ***Janice L. Cunningham***; Erick S. Vasquez; Keisha B. Walters; LaShan Simpson, "Human Fetuin-A Treatment for Demineralization of Arteriosclerosis," Society for Biomaterials (SFB) Annual Meeting and Exposition, April 15-18, 2015, Charlotte, NC.
26. ***Andrew Weeks***, Erick Vasquez, Keisha Walters, Amol Janorkar, "Aminated Elastin-like Polypeptide Coatings for Liver Cell Culture," Society for Biomaterials (SFB) Annual Meeting and Exposition, April 15-18, 2015, Charlotte, NC.
27. ***Laibao Zhang,*** Keisha B. Walters, "Effect of storage temperature and time on the physical and chemical properties of pyrolysis oil," poster presentation, 13th Annual Graduate Student Research Symposium, Mississippi State University, Mississippi State, MS, March 21, 2015 [***First place award***].
28. **Chaparro, A.F.**; Vásquez, E.S.; Walters, K.B. "Exploring the Synthesis and Characterization of Nanoscale Multifunctional Surfaces," poster presentation, 2014 AIChE Annual meeting, Atlanta, GA, November, 16-21, 2014.
29. **Erick S. Vasquez**, Shijie Ding, Keisha B. Walters. "Analysis of the pH and Thermo-Responsive Behavior of a Series of Amino (Meth)Acrylate Polymer Brushes on Silicon Substrates By in-Situ Ellipsometry and AFM Measurements" poster presentation, 2014 AIChE Annual meeting, Atlanta, GA, November, 16-21, 2014.
30. *Anandavalli Varadarajan*, Andres F. Chaparro, **Keisha B. Walters** "Feedstock, Collected Condensate Fraction, and Filtration Considerations in Upgrading and Pyrolysis Oil Stability," podium presentation, 2014 AIChE Annual meeting, session: General Topics Chemical Engineering, Atlanta, GA, November, 16-21, 2014.
31. Vasquez, E.S., Ding, S., **Walters, K.B.** "pH and Thermo-Responsive Behavior of Amino (Meth)Acrylate Polymer Brushes on Silicon Substrates By In-situ Ellipsometry and Atomic Force Microscopy" podium presentation, 2014 American Institute of Chemical Engineers Annual Meeting, Atlanta, GA, November 16-21, 2014.

32. **Vasquez, E.S.**, Kundu, S., Walters, K.B., "Rheological and Microstructural Characterization of Native Lung Mucus," podium presentation, 2014 American Institute of Chemical Engineers Annual Meeting, Atlanta, GA, November 16-21, 2014.
33. ***Zhang, L.***, Walters, K.B. "Impacts of Thermal Processing on the Physical and Chemical Properties of Renewable Crude Oil" 2014 American Institute of Chemical Engineers Annual Meeting, Atlanta, GA, November 16-21, 2014.
34. ***Varadarajan, A.***, Walters, K.B. "Effects of Feedstock, Collected Condensate Fraction, and Filtration on Pyrolysis Oil Stability" 2014 American Institute of Chemical Engineers Annual Meeting, Atlanta, GA, November 16-21, 2014.
35. ***J. Cunningham***, C.L. Simpson, E.S. Vasquez, K.B. Walters "Nano-sized Polymersomes for Fetuin-A Delivery to Reverse Cardiovascular Calcification," 2014 Biomedical Engineering Society (BMES) Annual Meeting, San Antonio, Texas, October 22-25, 2014.
36. **Chaparro, A.F.**; Vásquez, E.S.; Walters, K.B. "Synthesis and Characterization of Hybrid Polymer-Magnetic Coatings," poster presentation at the 2014 SHPE (Society of Hispanic Professional Engineers) Conference, November 5-9, 2014, Detroit, MI.
37. Erick Vasquez, **Jeffrey Johnston**, Jean Feugang, Keisha B. Walters, "Synthesis and Characterization of Magnetic Iron Oxide Nanoparticles for Life Science Imaging Applications," Chemistry Department, Mississippi State University, November 6, 2014.
38. **Walters, Keisha B.**, "SMATDAP: The Smart MATerials Design Analysis and Processing Consortium, Synthetic Thrust 3: Responsive Nanocomposites," Tulane University, New Orleans. LA, October 14, 2014.
39. **Walters, Keisha B.**, "From Molecule to Function: Using Stimuli-responsive Polymers to Design Nanostructured Materials," Department of Chemistry, Louisiana State University, Baton Rouge, LA, October 13, 2014 **[Invited Presentation]**.
40. *Ersan Eyiler*, **Keisha B. Walters**, "Nanomechanical Properties of Bioplastics During Degradation," 2014 SPE Bioplastics TopCon, Chicago, IL, October 2, 2014.
41. **Johnston, Jeffrey**; Vasquez, Erick S.; Feugang, Jean M.N.; Walters, Keisha B., "Magnetic Nano-composite for Life Sciences Applications," poster presentation, Mississippi State University Summer Undergraduate Research Symposium, July 31st, 2014. [1st place award, Physical Science and Engineering Division].
42. **McMahan, J.**; *Cunningham, Janice L.*; Vasquez, Erick S.; Walters, Keisha B.; Simpson, Lashan. "Characterization of the Fetuin-Calcium Binding Interactions," podium presentation, MSU Summer Undergraduate Research Symposium, July 31, 2014. [3rd place award, Outstanding Research, Biological Science and Engineering Division].
43. **Chaparro, Andres F.**; Vasquez, Erick S.; Walters, Keisha B., "Development of pH-Responsive Polymer-Magnetic Nanocomposite Surfaces," poster presented at the Mississippi State University Summer Undergraduate Research Symposium, July 31st, 2014.
44. Vasquez, Erick S.; Chu, I-Wei; **Walters, Keisha, B.**, "Polymer-Metal Nanoparticle Composites: Incorporation of Janus, Magnetic, Stimuli Responsive, and/or Reversible Agglomeration Features," 14th Southern School on Computational Chemistry & Materials Science Conference, Jackson State University, Jackson, MS, July 24, 2014 [**Invited Presentation**].
45. **Chaparro, Andres F.**; Vasquez, Erick S.; Walters, Keisha B., "Development of pH-Responsive Polymer-Magnetic Nanocomposite Surfaces," poster presented at the Mississippi State University Summer Undergraduate Research Symposium, June 30, 2014.
46. **Walters, Keisha B.** "Material Design...from molecule to function," Oregon State University, Corvallis, OR, May 30, 2014 [**Invited Presentation**].
47. Vasquez, E.S., Chu, I.-W., Gresham, M., **O'Horo, A.**, Barnett, G., Walters, K.B., "Multiphase Stimuli-Responsive Polymers and Magnetic Nanoparticles Systems: Synthesis and Characterization Methods,"

poster presentation, Bagley College of Engineering Undergraduate Research Symposium, MS State University, April 22, 2014.

48. *Varadarajan, A.*; **Chaparro, A.F.**; Walters, K.B. "Can we use timber residue to produce pyrolysis oil? Effects on the physicochemical properties of pyrolysis oil from the inclusion of bark in the feed stock," poster presentation, Bagley College of Engineering Undergraduate Research Symposium, MS State University, April 22, 2014.
49. Vasquez, E.S., *Kumari, S.*, Gompa, T., **Johnston, J.**, Walters, K.B., "Analysis of Thermal Failing of Mosaic Magnetic Nanoparticles," poster presentation, Bagley College of Engineering Undergraduate Research Symposium, MS State University, April 22, 2014.
50. ***J. Cunningham***, C.L. Simpson, E.S. Vasquez, K.B. Walters "Targeted Therapy to Treat Cardiovascular Calcification in ESRD Patients," 30th Southern Biomedical Engineering Conference, Society For Biomaterials, Gulfport, MS, April 10-13, 2014.
51. **Walters, K.B.** "BioSystems Simulation (BioSim) Focus Area Overview," National Science Foundation MS EPSCoR Annual Meeting, Mississippi State University, April 2, 2014.
52. **Vasquez, E.S.**, Kundu, S., Walters, K.B., Walters, D.K., Swiderski, C., Bowser, J. "Mechanical Properties of Pulmonary Mucus," National Science Foundation MS EPSCoR Annual Meeting, Mississippi State University, April 2, 2014.
53. ***Varadarajan, A.***; Chaparro, A.F.; Walters, K.B. "Can we use timber residue to produce pyrolysis oil? Effects on the physicochemical properties of pyrolysis oil from the inclusion of bark in the feed stock," poster presentation, Bagley College of Engineering Graduate Research Poster Competition, Mississippi State University, March 24-25, 2014. [*Distinguished M.S. Research Award*]
54. Vasquez, E.S., ***Kumari, S.***, Gompa, T., Johnston, J., Walters, K.B., "Analysis of Thermal Failing of Mosaic Magnetic Nanoparticles," poster presentation at Bagley College of Engineering Graduate Research Poster Competition, Mississippi State University, March 24-25, 2014.
55. ***Cunningham, J L.***; Vasquez, E.S.; Walters, K.B.; Simpson, C.L., "Targeted Therapy to Treat Cardiovascular Calcification in ESRD Patients," 12th Annual Graduate Student Research Symposium, Mississippi State University, March 22, 2014. [*1st Place Outstanding Research Award -- Life and Biomedical Sciences and Engineering*]
56. ***Zhang, L.***, Walters, K.B. "Effects of Thermal Processing on the Physical and Chemical Properties of KiOR's Renewable Crude Oil," 12th Annual Graduate Student Research Symposium, Mississippi State University, March 22, 2014.
57. ***Varadarajan, A.***; Chaparro, A.F.; Walters, K.B. "Can we use timber residue to produce pyrolysis oil? Effects on the physicochemical properties of pyrolysis oil from the inclusion of bark in the feed stock," podium presentation, 12th Annual Graduate Student Research Symposium, Mississippi State University, March 22, 2014.
58. Vasquez, E.S., ***Kumari, S.***, Gompa, T., Johnston, J., Walters, K.B., "Analysis of Thermal Failing of Mosaic Magnetic Nanoparticles," poster presentation, 12th Annual Graduate Student Research Symposium, Mississippi State University, March 22, 2014.
59. **Vasquez, E.S.**; Johnston, J.; Walters, K.B. "Electrophoretic mobility measurements of polymer-magnetic nanoparticle systems," poster presentation, POLY: Division of Polymer Chemistry, 247th ACS National Meeting, Dallas, TX, March 18, 2014.
60. Vasquez, E.S., Chu, I.-W., Gresham, M., **O'Horo, A.**, Barnett, G., Walters, K.B., "Multiphase Stimuli-Responsive Polymers and Magnetic Nanoparticles Systems: Synthesis and Characterization Methods," poster presentation, NSF MS EPSCoR Capitol Day, Jackson, MS, February 18th, 2014.
61. **Walters, K.B.** "Material design ... from molecule to function: Stimuli-responsive polymers and polymer-metal nanocomposites," Department of Chemical Engineering, NC State University, February 10th, 2014 [**Invited Seminar**].
62. ***Varadarajan, A.***; Walters, K.B. "Effects of Centrifugal Filtration on the Physicochemical Properties of Pyrolysis oil," podium presentation, 2013 AIChE Annual Meeting, San Francisco, CA, November 6, 2013.

63. ***Zhang, L.;*** *Zhou, P.*; Liu, J.; Yu, F.; Walters, K.B. "Production of Hydrogen via Steam-Reforming Reactions of Bio-Oil over Nickel Based Catalysts," poster presentation, 2013 AIChE Annual Meeting, San Francisco, CA, November 6, 2013.
64. *Vasquez, E.S.*, **Walters, K.B.**, "Electrophoretic Mobility Measurements of Polymer-Magnetic Nanoparticle Systems," 2013 AIChE Annual Meeting, San Francisco, CA, November 7, 2013.
65. ***Vasquez, E.S.***, Walters, K.B., Walters, D.K. "Transport Modeling of Micron-Sized Particles in Different Geometries Using a Two-Fluid Eulerian-Eulerian Approach," 2013 AIChE Annual Meeting, San Francisco, CA, November 3-8, 2013.
66. ***Varadarajan, A.***, Walters, K.B. "Effects of Post-Condensation Centrifugal Filtration on Pyrolysis Oil," 2013 AIChE Annual Meeting, San Francisco, CA, November 3-8, 2013.
67. ***Zhang, L.***, *Zhou, P., Liu, J.*, Yu, F.*, Walters, K.B* "Production of Hydrogen Via Steam-Reforming Reactions of Bio-Oil Over Nickel Based Catalysts," 2013 AIChE Annual Meeting, San Francisco, CA, November 3-8, 2013.
68. *Vasquez, E.S.*, **Walters, K.B.**, Walters, D.K. "Transport Modeling of Micron-sized Particles in a 90-degree Bend/PRB Using a Two-fluid Eulerian-Eulerian Approach," FEDSM2013 (25-2 Numerical Methods for Multiphase Flows II), Incline Village, NV, July 9, 2013 [**Invited Presentation**].
69. Ersan Eyiler, Mathew D. Rowe, **I-Wei Chu**, and Keisha B. Walters, "Mechanical Properties of Poly(lactic acid) and Poly(trimethylene malonate) Blends," Seeing at the Nanoscale 2013, Evanston, Illinois, April 17, 2013.
70. Ding, S.; **Walters, K.B**. "Fe_3O_4-PDEA-PEGMA core-shell pH responsive magnetic nanoparticles," PMSE: Division of Polymeric Materials Science and Engineering, 245th ACS National Meeting, New Orleans, Louisiana, April 9, 2013.
71. ***E.S. Vasquez***, I. Chu, K.B. Walters, "Stimuli-responsive biphasic-polymer Janus magnetic nanoparticles prepared via electrostatic interactions and surface-confined ATRP," POLY: Division of Polymer 245th ACS National Meeting, New Orleans, Louisiana, April 9, 2013.
72. ***K.H. Parsons***, K.B. Walters, D.K. Walters, R. Hester, C.L. McCormick, "Gold nanoparticles via polymer micelle molecular templates for pulmonary imaging," POLY: Division of Polymer Chemistry -245th ACS National Meeting, New Orleans, Louisiana, April 9, 2013.
73. Ding, S.; **Walters, K.B.** "Fe_3O_4-PDEA-PEGMA core-shell pH responsive magnetic nanoparticles," PMSE-POLY Sci-Mix, 245th ACS National Meeting, New Orleans, Louisiana, April 8, 2013.
74. ***Eyiler, E.;*** Rowe, M.D.; Chu, I.-W.; Walters, K.B. "Thermal and Mechanical Properties of Poly(lactic acid) and Poly(trimethylene malonate) Blends," 11th Annual Graduate Student Research Symposium, Mississippi State University, March 23, 2013.
75. ***Maryam Dadgarmoghaddam***, I-Wei Chu, Mehdi Hajianmaleki, D. Keith Walters, Keisha B. Walters, "Thickness, Morphology, and Hydrolytic Stability of Aminosilane Layers on Silicon Substrate," poster presented at ASME 2012 International Mechanical Engineering Congress & Exposition, November 9-15, 2012, Houston, Texas, IMECE2012-93820.
76. **Walters, K.B.** "BioSim: Digital Lung," NSF MS EPSCoR Fall Forum Presentation, Mississippi State University, MS State, MS, September 28, 2012.
77. **Toghiani, R.K.**, Minerick, A.R., Walters, K. B., Hill, P. J., & Henington, C. Engineering Future Chemical Engineers: Incorporation of Process Intensification Concepts into the Undergraduate Curriculum. 2012 ASEE Annual Conference Proceedings, San Antonio, TX, June 11, 2012.
78. ***Vasquez, E.S.***; Ding, S.; Walters, K.B. "A Study of the pH and Thermo-responsive Behavior of a Series of Amino (Meth)acrylate Polymer Brushes on Silicon Substrates by In-situ Ellipsometry and AFM Measurements," poster presentation at the 10th National Graduate Research Polymer Conference, Case Western Reserve University, Cleveland, OH, May 22-24, 2012.

79. ***Eyiler, E.;*** *Rowe, M.D.;* Walters, K.B. "Effects of Comonomer and Catalyst:Monomer Ratios on Polycondensation Reactions to Synthesize Renewable Bioplastics," MSU Graduate Research Symposium, Mississippi State, MS, April 14, 2012.

80. **Walters, K.B.** "BIOSIM Research Component," NSF MS EPSCoR Statewide Meeting, University of Mississippi, Oxford, MS, April 11, 2012.

81. **Walters, K.B.** "Report to the Advisory Board, BioSim Focus Area," NSF MS EPSCoR Statewide Meeting, University of Mississippi, Oxford, MS, April 11, 2012.

82. **Gresham, M.D.**; *Vasquez, E.S.;* Walters, K.B. "Impact of Impurities and Substrate Crystal Structure on the Formation of 11-Mercapto-1-undecanol Self Assembled Monolayers on Gold and Subsequent Grafting of PNIPAM Polymer Brushes," 44th Annual Southeast Regional American Chemical Society Undergraduate Research Conference (SURC), Mississippi State University, Mississippi State, MS, April 12-13, 2012.

83. **Walters, K.B.** "Overview of EPSCoR Year 3 BioSim Research Components," NSF MS EPSCoR Annual Meeting, University of Mississippi, Oxford, MS, April 11, 2012.

84. **Walters, K.B.** "EPSCoR Year 3: Update on Walters' Group Research," NSF MS EPSCoR Annual Meeting, University of Mississippi, Oxford, MS, April 11, 2012.

85. ***Cornell, A.L.;*** *Smith, E.A.;* Walters, K.B. "Modeling Diffusion of Aerosol Drugs Through Pulmonary Mucus," NSF MS EPSCoR Annual Meeting, University of Mississippi, Oxford, MS, April 10, 2012.

86. ***Vasquez, E.S.;*** Stein, N.; Walters, K.B.; Walters, D.K. "Eulerian-Eulerian Particle Transport and Deposition of Micron-sized Particles in a 90° Bend and a Human Lung Geometry," NSF MS EPSCoR Annual Meeting, University of Mississippi, Oxford, MS, April 10, 2012.

87. ***Eyiler, E.;*** *Rowe, M.D.;* Chu, I.; **Walters, K.B.** "Effects of Hydrolytic Degradation on the Mechanical Properties of Renewable Bioplastics: Poly(trimethylenemalonate) and Poly(trimethyleneitaconate)," podium presentation at ANTEC – Society of Plastics Engineers (SPE), Orlando, FL, April 2-4, 2012.

88. ***Eyiler, E.;*** *Rowe, M.D.;* Chu, I.; Walters, K.B. "Mechanical Properties of Poly(lactic acid) and Poly(trimethylenemalonate) Blends," poster presentation at ANTEC – Society of Plastics Engineers (SPE), Orlando, FL, April 2-4, 2012.

89. **Lemus, M.**; *Vasquez, E.S.;* Ding, S.; Walters, K.B. "Exploring the Temperature and pH Response of Amino (Meth)acrylate Polymer Brushes Using In-situ Spectroscopic Ellipsometry Measurements," poster presented at the 2011 Society of Hispanic Professional Engineers (SHPE) Annual meeting, Anaheim, California, October 27, 2011.

90. ***Vasquez, E.S.;*** Stein, N.; Walters, K.B.; Walters, D.K. "Deposition and Transport of Micron-sized Particles in the Human Tracheobronchial Tree," poster presented at the 2011 National NSF EPSCoR Conference, Couer D'Alene, Idaho, October 25, 2011.

91. ***Wynne, P.Z.;*** *Naske, C.D.;* Polk, P.; Waters, K.B. "Preliminary Investigations of Pyrolysis Oil Filtration Methods," poster presented at the 2011 BioFuels Conference, Mississippi State University, October 6, 2011.

92. **Chu, I.-W.**; *Vasquez, E.S.; Eyiler, E.; Dadgarmoghaddam, M.;* Walters, K.B. "The Synthesis and Characterization of Novel 3-D Asymmetric Nanoparticles," poster presentation at the 9th Annual Seeing at the Nanoscale Conference, University of California, Santa Barbara, CA, July 19-22, 2011.

93. ***Vasquez, E.S.;*** Nicholson, B.; Walters, K.B. "Surface Modification of Iron Oxide (Fe_3O_4) Micro- and Nano-particles with Stimuli Responsive Polymers," 2011 Nanotech Conference and Exposition, Boston, MA, June 13-16, 2011.

94. *Rowe, M.D.;* ***Eyiler, E.;*** Walters, K.B. "pH and Time Dependent Hydrolytic Degradation ofBioplastics from Renewable Monomers," Annual Technical Conference (ANTEC) of the Society of Plastics Engineers (SPE), Boston, MA, May 1-5, 2011.

95. **Walters, K.B.** "Material design . . . from molecule to function," Department of Chemical Engineering, University of Utah, April 25th, 2011. [**Invited Seminar**]

96. **Lemus, M.**; *Vasquez, E.S.;* Ding, S.; Walters, K.B. "Exploring the Temperature and pH Response of Amino (Meth)acrylate Polymer Brushes Using *In-situ* Spectroscopic Ellipsometry Measurements," Mississippi State University Undergraduate Research Symposium, April 21, 2011.

97. *Rowe, M.D.;* ***Eyiler, E.;*** Walters, K.B. "pH and Time Dependent Hydrolytic Degradation of Bioplastics," 9th Annual Graduate Student Research Symposium, Mississippi State University, April 16, 2011.

98. ***Vasquez, E.S.;*** Stein, N.; Walters, K.B. and Walters D.K., "Transport Modeling of Micron-sized Particles in a Human Lung Geometry," 9th Annual Graduate Student Research Symposium, Mississippi State University, April 16, 2011. [**Outstanding Research Award**]

99. ***Cornell, A.L.;*** Walters, K.B. "Diffusion Studies in Artificial Saliva and Mucus to Predict Lung Aerosol and Particulate Transport," poster presentation at the 2011 NSF MS EPSCoR Annual Meeting, Mississippi State University, Starkville, MS, April 14-15, 2011.

100. ***Williams, A.M.;*** Walters D.K.; Walters, K.B. "Modeling the Fate of Inhaled Particulate Matter," poster presentation at the 2011 NSF MS EPSCoR Annual Meeting, Mississippi State University, Starkville, MS, April 14-15, 2011.

101. ***Vasquez, E.S.;*** Stein, N.; Walters, K.B.; Walters, D.K. "Computational Modeling of Particle Inhalation in the Human Lung," poster presentation at the 2011 NSF MS EPSCoR Annual Meeting, Mississippi State University, Starkville, MS, April 14-15, 2011. [**1st Place Poster Award, BioSim Focus Group**]

102. Walters, K.B. "Development of Polymer-based Materials: From Nano-scale Drug Delivery to Degradable Cutlery," Mechanical Engineering Seminar Series, Mississippi State University, April 11, 2011.

103. Walters, K.B. "Material design. . . from molecule to function," Chemistry Seminar Series, Mississippi State University, April 1, 2011.

104. ***Vasquez, E.S.;*** Stein, N.; Walters, K.B.; Walters, D.K. "Computational Modeling of Particle Inhalation in the Human Lung," poster presented at the 2011 NSF MS EPSCoR Capitol Day, Jackson, MS, March 16, 2011.

105. ***Ranaweera, S.A.;*** Henry, W.P.; *Rowe, M.D.;* Walters, K.B.; White, M.G.; Rodriguez, J.M. "Preparation, Characterization and Catalytic Activity of Supported Binuclear Cobalt Complexes on Cab-O-Sil," poster presented at the 2010 ACS SWRM/SERMACS Meeting, New Orleans, LA, November 30-December 4, 2010.

106. ***Vasquez, E.S.;*** Walters, K.B.; Walters, D.K. "Transport Modeling of Micro- and Nanometer-Sized Particles in a Human Lung Geometry," 2010 AIChE Annual Meeting, Salt Lake City, UT, November 11, 2010.

107. *Rowe, M.D.;* ***Eyiler, E.;*** Walters, K.B. "pH-Dependent Hydrolytic Degradation of Poly(trimethylenemalonate) and Poly(trimethyleneitaconate)," poster presented at the 2010 AIChE Annual Meeting, Salt Lake City, UT, November 8, 2010.

108. ***Vasquez, E.S.***,Young, M.J., Walters, K.B. "Temperature and pH Response of a Series of Amino Methacrylate Polymer Brushes Grafted by in-Situ Spectroscopic Ellipsometry Measurements," 2010 AIChE Annual Meeting, Salt Lake City, UT, November 8, 2010.

109. *Vasquez, E.S.,***Jones, M.Y.**, Walters, K.B. "Synthesis, Characterization, and Swelling/Contraction Behavior of PNIPAm and PMAA Polymer Brushes Grafted On Gold Substrates," poster presented at the 2010 AIChE Annual Meeting, Salt Lake City, UT, November 8, 2010.

110. ***Naske, C.D.***, Walters, K.B. "Liquid Phase Serial Filtration of Pine and Cottonwood Pyrolysis Oils and Observed Effects On Aging," poster presented at the 2010 AIChE Annual Meeting, Salt Lake City, UT, November 9, 2010.

111. ***Ranaweera, S.A.***, Henry, W.P., *Rowe, M.D.*, Walters, K.B., White, M.G., Rodriguez, J.M. "Preparation and Characterization of Supported Binuclear Copper Complexes on Cab-O-Sil and their Catalytic Activity," poster presented at the ACS National Meeting, Boston, MA, August 22–26, 2010.

112. *Naske, C.D.,* **Polk, P.**, Speed, J., Holmes, W.E., Walters, K.B., "Evolution of Phase Separation During Aging in Pine Pyrolysis Oil," poster presented at the Summer 2010 Undergraduate Research Symposium, Mississippi State University, July 29, 2010.

113. *Naske, C.D.,* **Onwubiko, A.**, Walters, K.B. "Monitoring Molecular Weight and Polydispersity Changes During the Aging of Pine and Cottonwood Pyrolysis Oil," poster presented at the Summer 2010 Undergraduate Research Symposium, Mississippi State University, July 29, 2010.

114. *Cornell, A.,* **Miller, J.**, Walters, K.B. "Physiochemical Analyses of Drug-doped Artificial Saliva Solutions for Improved Aerosol Drug Delivery," poster presented at the Summer 2010 Undergraduate Research Symposium, Mississippi State University, July 29, 2010.

115. *Vasquez, E.S.,* **Young, M.J.**, Walters, K.B. "Temperature and pH Response of Poly(2-(diethylamino)ethyl methacrylate) Polymer Brushes Grafted on Silicon Substrates by *In-situ* Spectroscopic Ellipsometry Measurements," poster presented at the Mississippi State University Undergraduate Research Symposium, April 22, 2010. [**1st place award, Life Sciences Division, MSU Undergraduate Research Symposium, 2010**]

116. *Naske, C.D.,* **Speed, J.**, Wynne, P.Z., Walters, K.B. "Effects of Methanol Addition on the Aging of Bio-oil Produced from Pine Needles," poster presented at the Mississippi State University Undergraduate Research Symposium, April 22, 2010.

117. ***Vasquez, E.S.***, Walters, K.B. "A Mathematical Model for the Transport of Micron and Nanometer-sized Particles in the Human Lung," poster presented at the MS EPSCoR Annual Meeting, Jackson, MS, April 15, 2010. [**1st place award, Computational Biological Simulation Division, 2010 MS EPSCoR Meeting**]

118. ***Naske, C.D.;*** Crosby, S.E.; McMaster, A.; Walters, K.B. "Preliminary Studies of pH and Char Particle Content on Bio-oil Aging," presented at the AIChE 2009 Annual Meeting, Nashville, TN, November 11, 2009.

119. *Naske, C.D.,* **Speed, J.**, Wynne, P.Z., Crosby, S.E., Walters, K.B., "Effects of Char Particles On the Aging of Bio-Oil Produced From Timber Biomass Pyrolysis," poster presented at the AIChE 2009 Annual Student Conference, Nashville, TN, November 9, 2009.

120. ***Naske, C.D.;*** Crosby, S.E.; Speed, J.; Wynne, P.Z.; Walters, K.B. "Examination of Char Particle Effects on Bio-oil Aging Reactions," presented at the Mississippi State University 8th Annual Graduate Research Symposium, November 6, 2009.

121. ***Rowe, M.D.***, Walters, K.B. "Green Bioplastic -- Synthesis, Characterization, and Kinetic Modeling," presented at the Mississippi State University 8th Annual Graduate Research Symposium, November 6, 2009.

122. ***Vasquez, E.S.***, Walters, K.B. "Magnetic Nanoparticle Transport Through Liquid-Liquid Interfaces," presented the Mississippi State University 8th Annual Graduate Research Symposium, November 6, 2009.

123. *Rowe, M.D.;* **Walters, K.B.** "Synthesis and Characterization of Bioplastics from Polyfunctional Renewable Monomers," Annual Technical Conference (ANTEC) of the Society of Plastics Engineers (SPE), Chicago, IL, June 22-24, 2009.

124. ***Naske, C.D.;*** Crosby, S.E.; McMaster, A.; Walters, K.B. "Investigation of pH and Char Particles on Bio-oil Aging Reactions," poster presented at the 8th Annual Southern Bioproducts and Renewable Energy Conference, Jackson, MS, May 20-21, 2009.

125. ***Rowe, M.D.***, Smith, E.M., Walters, K.B. "Synthesis and Characterization of Bioplastics from 1,3-Propanediol, Malonic Acid, and Itaconic Acid," poster presented at the 8th Annual Southern Bioproducts and Renewable Energy Conference, Jackson, MS, May 20-21, 2009.

126. **Wynne, P.Z.**; *Rowe, M.D.;* Walters, K.B. "A Preliminary Study of Thiol and Silane Self Assembled Monolayer Formation on Copper Substrates," poster presented at the Undergraduate Research Symposium, Mississippi State University, April 21, 2009.

127. *Naske, C.D.;* **Crosby, S.E.**; Walters, K.B.; "Pine and Cottonwood Bio-oil Ageing," poster presented at the Mississippi State University Undergraduate Research Symposium, April 21, 2009.

128. **Lamb, M.**; *Rowe, M.D.;* Walters, K.B. "Development of a Drug Deposition Model Incorporating the Physiochemical Surface Properties of Lung Tissue," poster presented at the Undergraduate Research Symposium, Mississippi State University, April 21, 2009.

129. **Lamb, M.**; *Rowe, M.D.;* Walters, K.B. "Development of a Drug Deposition Model Incorporating the Physiochemical Surface Properties of Lung Tissue," poster presented at the 2009 MS EPSCoR Meeting, Mississippi State University, April 16, 2009.

130. ***Naske, C.D.,***Crosby, S.E.; McMaster, A.; Walters, K.B. "Preliminary Chemical and Physical Characterizations of Bio-oil Aging," poster presented at the Mississippi State University 2nd Energy Workshop, April 15, 2009.

131. ***Rowe, M.D.,*** Smith, E.M., Wall, M.C., Walters, K.B. "Chemical Structure and Molecular Weight Dependence on Reaction Time and Temperature for Bioplastics Synthesized From 1,3-Propanediol, Malonic Acid, and Itaconic Acid," 7th Annual Graduate Student Association Research Symposium, Mississippi State University, April 3rd, 2009.

132. **Wynne, P.Z.**; *Rowe, M.D.;* Walters, K.B. "A Preliminary Study of Thiol and Silane Self Assembled Monolayer Formation on Copper Substrates," AIChE Southern Regional Conference, University of Alabama, Tuscaloosa, AL, April 3-5, 2009.

133. *Naske, C.D.;* **Crosby, S.E.**; Walters, K.B. "Initial Aging Studies of Pyrolysis Bio-oil Produced from Pine and Cottonwood," AIChE Southern Regional Conference, University of Alabama, Tuscaloosa, AL, April 3-5, 2009.

134. ***Rowe, M.D.,*** Smith, E.M., Wall, M.C., Walters, K.B., "Synthesis and Chemical Characterization of Renewable Copolymers from 1,3-Propane Diol, Malonic Acid, and Itaconic Acid," poster presented at the Society of Plastic Engineers Mississippi Chapter Meeting, Mississippi State University, March 10, 2009.

135. *Rowe, M.D.,* Crosby, S.E., **Jamison, P.**, Walters, K.B., "Degradation of Renewable Resource Copolymers," poster presented at Society of Plastic Engineers Mississippi Chapter Meeting, Mississippi State University, March 10, 2009.

136. **Walters, K.B.** "Advanced Polymer Systems – Building Function By Design," Louisiana State University, Baton Rouge, LA, March 6, 2009 [**Invited Seminar**].

137. ***Rowe, M.D.,*** Crosby, S.E., Walters, K.B., "Degradation of Renewable Resource Copolymers," poster presented at 2008 American Institute of Chemical Engineers Annual Meeting, Philadelphia, PA, November 16th - 21st, 2008.

138. *Rowe, M.D.;* **Crosby, S.**; Walters, K.B. "Dependence of the Hydrolytic Degradation of Poly(ester-anhydride) Copolymers on pH, Temperature, and Time," poster presented at the 2008 American Institute of Chemical Engineers Annual Meeting, Philadelphia, PA, November 17, 2008.

139. **Lamb, M.**; *Rowe, M.D.,* Walters, K.B. "Physiochemical Surface Properties of Lung Tissues for Modeling Drug Deposition," poster presented at the 2008 American Institute of Chemical Engineers Annual Meeting, Philadelphia, PA, November 17, 2008.

140. ***Rowe, M.D.;*** Walters, K.B. "Development and Characterization of Copolymers from Renewable Resource Monomers," poster presented at the 2008 American Institute of Chemical Engineers Annual Meeting, Philadelphia, PA, November 20, 2008.

141. ***Rowe, M.D.;*** Walters, K.B. "Hydrolytic Degradation Studies of Renewable Copolymers," 2008 American Institute of Chemical Engineers Annual Meeting, Philadelphia, PA, November 19, 2008.

142. ***Ranaweera, S.A.;*** Henry, W.P.; *Rowe, M.D.;* Walters, K.B.; White, M.G.; Rodriguez, J.M. "Preparation and characterization of supported $Cu_2(daa)_2$ complex on Cab-O-Sil as a catalyst precursor," poster

presented at the 60th Southeastern Regional Meeting (SERMACS) of the American Chemical Society (ACS), Nashville, TN, November 12–15, 2008.

143. ***Rowe, M.D.;*** Walters, K.B.; "Synthesis, characterization and degradation of Bioplastics," poster presented at the 60th Southeastern Regional Meeting of the American Chemical Society (SERMACS)of the American Chemical Society (ACS), Nashville, TN, November 12–15, 2008.

144. **Terry, A.**; Minerick, A.; Thibaudeau, G.; Walters, K.B., "Structurally Responsive Materials Inspired by Nature," 2008 Bioinspired Design Conference, Mississippi State University, August 21, 2008.

145. ***Rowe, M.D.;*** Smith, E.M.; Walters, K.B., "Synthesis and Characterization of Renewable Polymers from By-Products of Bio-Refineries," poster presented at the MS State Biofuels Conference, Mississippi State, MS, August 14-15, 2008.

146. *Rowe, M.D.,* **Smith, E.M.**, Walters, K.B., "Synthesis and Characterization of Renewable Copolymers from By-Products of Bio-Refineries," poster presented at the 7th Annual SPE Student Research Poster Session, Mississippi Chapter of the Society of Plastics Engineers (SPE), Starkville, MS, April 8, 2008.

147. ***Rowe, M.D.***,Walters, K.B., "Development and Characterization of Renewable Copolymers," AIChE Spring National Meeting and 235th National Meeting of the American Chemical Society (ACS), New Orleans, LA, April 6-10, 2008.

148. **Lamb, M.**,Álvarez Lugo, E.L., *Rowe, M.D.*,Walters, K.B., "Physiochemical Surface Properties of Lung Tissues for Modeling Drug Deposition," poster presented at the AIChE2008 Southern Regional Conference, Auburn, AL, April 4-6, 2008.

149. Ding, S., **Walters, K.B.**, "Surface-Confined Living Radical Polymerization of pH-Responsive Amino (Meth)Acrylate Brushes," 2007 American Institute of Chemical Engineers Annual Meeting, Salt Lake City, UT, November 2007.

150. ***Rowe, M.D.***, Walters, K.B., "Synthesis, Characterization, and Degradability of Renewable Copolymers," 2007 American Institute of Chemical Engineers Annual Meeting, Salt Lake City, UT, November 2007.

151. ***Mohan, V.***, Walters, K.B., "Selective Ester Cleavage in Phospholipids – Towards the Development of Phosphate Functionalized Polymers," American Institute of Chemical Engineers Annual Meeting, Salt Lake City, UT, November 2007.

152. Aich, S., Schulz, F.; Walters, K.B., **Minerick, A.R.**, "Synthesis and Characterization of Cu-SiO_2 Core-Shell Nanoparticles," 2007 American Institute of Chemical Engineers Annual Meeting, Salt Lake City, UT, November 2007.

153. **Martin, H.J.**, Schulz, K.H., Walters, K.B., Bumgardner, J.D., "Surface Science Studies on the Effects of Triethoxsilylbutyraldehydeand Two Metal Treatments to Bond Chitosan," 2007 American Institute of Chemical Engineers Annual Meeting, Salt Lake City, UT, November 2007.

154. *Rowe, M.D.,***Terrell, L.B.**, Smith, E.M., Walters, K.B., "Synthesis, Characterization, and Degradation of Renewable Copolymers," poster presented at the 2007 American Institute of Chemical Engineers Annual Meeting, Salt Lake City, UT, November 2007.

155. *Rowe, M.D.* ,**Smith, E.M.**, Terrell, L.B., Walters, K.B., "Synthesis and Characterization of Renewable Copolymers: Poly(Glycerol-Fumarate) And Poly(Trimethylene-Malonate)," poster presented the 2007 American Institute of Chemical Engineers Annual Meeting, Salt Lake City, UT, November 2007.

156. Walters, K.B. "Tethered Stimuli-Responsive Polymer Layers," Department of Chemical and Biological Engineering, University of Alabama, September 27, 2007. [**Invited Seminar**]

157. **Schulz, F.**; Aich, S.; Walters, K.B.; Minerick, A.R. "Synthesis and Characterization of Cu-SiO_2 Core-Shell Nanoparticles," poster presented at the 2007 MSU Chemistry:Chemical Engineering – The Bonds Between Us REU Poster Symposium, July 27, 2007.

158. **Álvarez Lugo, E.L.**; *Rowe, M.D.;* Walters, K.B. "Physio-Chemical Properties of Lung Tissue," poster presented at the 2007 MSU Chemistry:Chemical Engineering – The Bonds Between Us REU Poster Symposium, July 27, 2007.

159. **Adler, K.L.**; *Rowe, M.D.;* Walters, K.B. "Surface Characterization of Tethered Responsive Polyamine Films for Biomedical Applications," poster presented at the 2007 MSU Chemistry:Chemical Engineering – The Bonds Between Us REU Poster Symposium, July 27, 2007.
160. ***Mohan, V.***, Hubbard, L.E.; Crosby, S.E.; Walters, K.B. "Selective Ester Cleavage in Phospholipids -- Towards the Development of Phosphate Polymers," presented National Polymer Graduate Research Conference sponsored by the American Chemical Society (ACS) Division of Polymer Chemistry, Oak Ridge National Lab, Oak Ridge TN, June 2007.
161. ***Rowe, M.D.;*** Walters, K.B. "Synthesis and Characterization of Renewable Copolymers: Poly(glycerol-fumarate) and Poly(trimethylene-malonate)," presented National Polymer Graduate Research Conference sponsored by the American Chemical Society (ACS) Division of Polymer Chemistry, Oak Ridge National Lab, Oak Ridge TN, June 2007.
162. ***Rowe, M.D.***, Smith, E.M., Walters, K.B., "Development of Renewable Polymers From 1,3-Propane Diol and Malonic Acid," ANTEC - Society of Plastics Engineers - Cincinnati, OH, May 6-11, 2007.
163. ***Rowe, M.D.***, Walters, K.B., "Synthesis and Characterization of Bioplastics," ANTEC - Society of Plastics Engineers - Cincinnati, OH, May 6-11, 2007.
164. **Aich, S.**; Walters, K.B.; Minerick, A., "An Electron Microscopy Study of Cu/SiO_2 Core-Shell Nanoparticles," 2007 Southeastern Microscopy Annual Meeting, Decatur, GA, April 11-13, 2007.
165. Aich, S.; Walters, K.B.; Minerick, A. "Rendering Trace Metal Particulates Inert Via Nanoencapsulation in Biological Processes," Institute of Biological Engineering, 12th Annual Meeting, St. Louis, MO, March 29-April 1, 2007.
166. ***Mohan, V.;*** Hubbard, L.; Walters, K. B., "Selective Phosphate Ester Cleavage in Phospholipids," GSA Research Symposium, Mississippi State University, March 30, 2007.
167. ***Rowe, M.D.;*** Smith, E.M.; Walters, K.B., "Development of Renewable Polymers from 1,3-Propane Diol and Malonic Acid," GSA Research Symposium, Mississippi State University, March 30, 2007.
168. *Rowe, M.D.;* Smith, E.M.; **McMaster, A.**; Walters, K.B. "Development of Renewable Polymers from 1,3-Propane Diol and Malonic Acid," poster presented at the 2007 AIChE Southern Regional Conference, March 10-12, 2007.
169. *Rowe, M.D.;* Smith, E.M.; **Terrell, L.B.**; Walters, K.B. "Development of Renewable Polymers from 1,3-Propane Diol and Malonic Acid," poster presented at the 2007 SPE Mississippi Chapter Meeting, Mississippi State University, March 6, 2007.
170. **Aich, S.**; Walters, K.B.; Minerick, A. "Nano-Encapsulation of Trace Metal Impurities in Biodiesel," poster presented at the 2007 SPE Mississippi Chapter Meeting, Mississippi State University, March 6, 2007.
171. ***Mohan, V.;*** Hubbard, L.E.; Walters, K.B. "Selective Phosphate Ester Cleavage in Phospholipids," ESCAPE Conference, Mississippi State University March 2-4, 2007.
172. **Ding, S.**; Walters, K.B. "Fe_3O_4-PDEA-PEGMA Core-Shell pH Responsive Magnetic Nanoparticles," ESCAPE Conference, Mississippi State University, March 2-4, 2007.
173. ***Rowe, M.D.;*** Smith, E.M.; Walters, K.B. "Renewable Polymer Development Using 1,3-Propane Diol, Glycolic Acid, and Malonic Acid," ESCAPE Conference, Mississippi State University, March 2-4, 2007.
174. ***Mohan, V.;*** Hubbard, L.E.; Walters, K.B. "Phosphate Ester Cleavage in Phospholipids," MS Academy of Sciences, 71st Annual Meeting, February 21-23, 2007.
175. ***Rowe, M.D.;*** Smith, E.M.; Walters, K. B. "Development of Renewable Polymers From 1,3-Propane Diol and Malonic Acid," MS Academy of Sciences, 71st Annual Meeting, February 21-23, 2007.
176. **Aich, S.**; Walters, K.B.; Minerick, A. "Nano-Encapsulation of Trace Metal Impurities in Biodiesel," MS Academy of Sciences, 71st Annual Meeting, February 21-23, 2007.
177. Ding, S.; Walters, K.B. "Synthesis and Characterization of pH Responsive Polymer Brushes," poster presentation at the MS Academy of Sciences 71st Annual Meeting, February 21-23, 2007.
178. Walters, K.B.; Hirt, D.E. "Tethered Stimuli-Responsive Polymer Films," Smart Coatings Symposium, February 21-23, 2007. [**Invited Presentation**]
179. ***Martin, H.J.;*** Walters, K.B.; Schulz, K.H.; Bumgardner, J.D.; Schneider, J.A. "The Effects of Different Silanes and Metal Surface Treatments on the Binding of Chitosan as Investigated by Mechanical and Biological Testing," AIChE Annual Meeting, San Francisco, CA, November 13-17, 2006.

180. ***Martin***, ***H.J.***; Walters, K.B.; Schulz, K.H.; Bumgardner, J.D. "Surface Science Studies on the Effects of Different Silanes and Metal Surface Treatments on the Binding of Chitosan, a Biopolymer," AIChE Annual Meeting, San Francisco, CA, November 13-17, 2006.

181. **Walters**, **K.B.** "Tethered pH-Responsive Polymer Layers," AIChE Annual Meeting – San Francisco, CA, November 13-17, 2006.

182. **Walters, K.B.** "pH-Responsive Tethered Layers on Copolymer and Silicon Substrates," AIChE Annual Meeting – Cincinnati, OH, November 1-5, 2005.

183. **Walters, K.B.** "Surface Modification Via Grafting: Stimuli Responsive Polymer Surfaces," MSU SPE Student Chapter, September 8, 2005.

184. **Walters, K.B.**; Rugh, A.; Hirt, D.E. "Melt Grafting of End-Functionalized Poly(tert-butyl acrylate) to Silicon Substrates," ANTEC - Society of Plastics Engineers – Boston, MA, May 1-5, 2005.

185. **Walters, K.B.** "Surface-Grafted pH-Responsive Polymers for Functional Devices, Department of Chemical and Petroleum Engineering, University of Wyoming, February 28, 2005 [**Invited Seminar**].

186. **Walters, K.B.** "Surface-Grafted pH-Responsive Polymers for Functional Devices," Department of Chemical and Biomedical Engineering, Florida A&M University - Florida State University, February 10, 2005 [**Invited Seminar**].

187. **Walters, K.B.** "Surface-Grafted pH-Responsive Polymers for Functional Devices," Department of Chemical and Biochemical Engineering, University of Maryland – Baltimore County, February 7, 2005 [**Invited Seminar**].

188. **Walters, K.B.** "Surface-Grafted pH-Responsive Polymers for Functional Devices," Hunter Henry Lecture Series, Dave C. Swalm School of Chemical Engineering, Mississippi State University, February 3, 2005 [**Invited Seminar**].

189. **Walters, K.B.** "Surface-Grafted pH-Responsive Polymers for Functional Devices," Department of Chemical Engineering, Northeastern University, January 28, 2005. [**Invited Seminar**]

190. **Walters, K.B.**; Hirt,D.E. "Chemically Tailored Polymeric Layers Grafted to Copolymer Film and Silicon Surfaces," AIChE Annual Meeting - Austin, TX, November 7-12, 2004.

191. **Walters, K.B.**; Wang, W.; Harris, R.P.; Hirt, D.E. "Chemically Tailored Polymeric Layers Grafted To and From a Copolymer Film Surface," ANTEC - Society of Plastics Engineers - Chicago, IL, May 17-19, 2004.

192. **Walters, K.B.** "Technical Research for Surface Modification Topic," Clemson University, Center for Advanced Engineering Fibers and Films, NSF Site Visit, 2004.

193. **Walters, K.B.**; Hirt, D.E. "Surface-Confined ATRP From Ethylene-Based Copolymer Substrates," AIChE Annual Meeting - San Francisco, CA, November 16-21, 2003.

194. **Walters, K.B.**; Hirt, D.E. "Functional Polymer Layers Grafted From Copolymer Substrates Using Surface-Confined ATRP," 226th ACS National Meeting - New York, NY, September 7-11, 2003.

195. **Walters, K.B.**; Hirt, D.E. "Polymer Layers Grown From Gold and Polymer Film Via Surface-Confined ATRP," ANTEC - Society of Plastics Engineers - Nashville, TN, May 4-8, 2003.

196. **Walters, K.B.** "Technical Presentation on Surface Modification Research," Clemson University, Center for Advanced Engineering Fibers and Films, NSF Site Visit, 2002.

197. **Walters, K.B.;** Hirt, D.E. "Surface Characterization of LLDPE Films Containing Fluorinated Additives," AIChE Annual Meeting - Reno, NV, November 4-9, 2001.

198. **Walters, K.B.**;Hirt, D.E. "Migration of Fluorinated Additives to HDPE Film Surfaces," ANTEC - Society of Plastics Engineers - Dallas, May 6-10, 2001.

PRESENTATIONS—Educational (Key: **Presenters**; *Graduate students*; Undergraduate/high school students)

1. **Walters, K.B.** "Undergraduate Research: Skill Building Process and Career Impacts," ASEE Annual Conference, San Antonio, TX, June 11, 2012. [**Invited Presentation**]
2. **Toghiani, R.K.**, Minerick, A.R., Walters, K. B., Hill, P. J., Henington, C. Engineering Future Chemical Engineers: Incorporation of Process Intensification Concepts into the Undergraduate Curriculum. 2012 ASEE Annual Conference Proceedings, San Antonio, TX, June 10-13, 2012.
3. **Toghiani, R.;** Minerick, A.R.; Walters, K.B.; Hill, P.J.; Henington, C. "Engineering Future Chemical Engineers: Incorporation of Process Intensification Concepts into the Undergraduate Curriculum," 2011 ASEE Annual Conference & Exposition, Vancouver, BC, Canada, June 26-29, 2011.
4. **Walters, K.B.** "Vertical Integration of Fluids Instruction in the Chemical Engineering Curriculum through a Process Intensification Framework," poster presented at the 2010 Frontiers of Engineering Education Symposium, Sponsored by the National Academy of Engineering and the O'Donnell Foundation, Irvine, California, December 13-16, 2010.
5. **Walters, K.B.**; Minerick, A.R.; *Srivastava, S.; Hall, J.I.; Parker, A.; Thomas, H.; Leonard, K.* "Instructor and Student Perspectives on a Graduate Professional Development Course: Career Issues for Women in Engineering," 2010 ASEE National Conference, Louisville, KY, June 23, 2010.
6. **Toghiani, R.**; Walters, K.B.; Hill, P.H.; Minerick, A.R.; Henington, C. "Engineering Future Chemical Engineers: Incorporation of Process Intensification Concepts in to the Undergraduate Curriculum," 2010 ASEE National Conference, Louisville, KY, June 21, 2010.
7. **Walters, D.K.**; Walters, K.B. "Introducing Talented High School Students to Engineering Via Fluid Mechanics," 2010 ASEE National Conference, Louisville, KY, June 21, 2010.
8. **Schneider, J.**, Walters, K.B. "Interdisciplinary and Experiential Approach Towards the Teaching of Materials Science and Engineering," presented at the Southeastern Regional ASEE Conference, April 18-20, 2010, Blacksburg, VA [**Best Paper Award**].
9. **Minerick, A.R.**; Walters, K.B., Elmore, B.B; Toghiani, R.; Hill, P.J.; Hernandez, R.; French, T. "Cross-Curricular Topic Inventory: Strategic Topic Placement and Resulting Student Accountability," ASEE Annual Conference, Austin, TX, June 15, 2009.
10. Toghiani, R.; **Minerick, A.R.**; Walters, K.B., "Making the Connections: Facilitating Student Integration of Chemical Engineering Concepts into a Coherent Framework," ASEE Annual Conference, Pittsburgh, PA, June 24, 2008.

PRESENTATIONS—Outreach/Service (Key: **Presenters**; *Graduate students*; <u>Undergraduate/high school students</u>)

1. **Walters, K.B.** "Poised for Success: A Discussion on An Open and Prepared Mind, Looking for Opportunities, What it Takes to Succeed, and Your Personal Choices," GE 1021: Engineering Success, Mississippi State University, November 11, 2014.
2. **Walters, K.B.** "Considering Graduate School. Questions to Ask: Why? Why Me? How? Where?," Chemical and Biomolecular Engineering Department, Clemson University, April 24, 2014.
3. **Walters, K.B.** "Decisions, Decisions…What do I want to be when I 'grow up'? A Discussion on Career Choices and Careers in STEM: Science, Technology, Engineering, and Mathematics," Starkville Public High School, Starkville, MS, May 2013. [**Invited Lecture**]
4. **Walters, K.B.** "Decisions, Decisions…What do I want to be when I 'grow up'? A Discussion on Career Choices and Careers in STEM: Science, Technology, Engineering, and Mathematics," 2013 Women in Science and Technology (WIST) Conference, East MS Community College—Golden Triangle Campus, February 22nd, 2013. [**Invited Seminar—Keynote Lecture**]
5. **Walters, K.B. "**Graduate School: Why? Why Me? How? Where?," ChE 3331—Professional Development Seminar, Mississippi State University, February 5th, 2013.

6. **Walters, K.B.** "You Don't Know What You Don't Know Until You Know It," NSF TIME: Technology Initiative in Manufacturing and Engineering Workshop, East Mississippi Community College (EMCC), Mayhew, MS October 18th, 2012.
7. **Walters, K.B.**; "What Do I Want To Be When I Grow Up? A Discussion on Career Choices and Careers in STEM (Science, Technology, Engineering, and Mathematics)," East Mississippi Community College (EMCC), Mayhew, MS September 18th, 2012.
8. **Walters, K.B.**, "Navigating Your Career Path," Graduate Women in Science and Engineering (G-WISE), Mississippi State University, MS State, MS, January 30, 2012.
9. **Walters, K.B.; *Parker, A.*** "Graduate School: Why? Why Me? How?" AIChE Student Chapter, Mississippi State University, October 21, 2010.
10. **Walters, K.B.** "What is Chemical Engineering?" Hands On Engineering Workshop, July 21, 2010.
11. **Walters, K.B.** "Nanotechnology and Nanomedicine," Mississippi NSF EPSCoR Teacher's Workshop, Mississippi State University, June 24, 2010.
12. **Walters, K.B.** "Graduate School. Why? Why Me? How? Why MSU?," American Institute of Chemical Engineers (AIChE) Student Group, Louisiana State University, Baton Rouge, LA, March 5, 2009. [**Invited Seminar**]
13. **Walters, K.B.** "Career Paths, Research, Professional/Personal Balance, and You," SWE Student Chapter, Mississippi State University, September 16, 2008. [**Invited Seminar**]
14. **Walters, K.B.** "Engineering Careers," ASME, Northeast Mississippi Section, February 23, 2006. [**Invited Seminar**]

TEACHING AND SUPERVISORY EXPERIENCE

Course Instructor

CHE 3203: Fluid Flow; Mississippi State University [Fall 2009, Fall 2010, Fall 2012]

CHE 3213: Heat Transfer; Mississippi State University [Fall 2005, Spring 2006, Fall 2006, Fall 2007, Spring 2013, Spring 2014, Fall 2014, Spring 2015]

CHE 4000: Directed Individual Study; Mississippi State University
- Evaluation of Non-Aggressive Grafting Chemistries [Spring 2006]
- Copper Surface Chemistries [Summer 2007]
- Demos, Experiments, and Activities for Polymer Concepts [Spring 2009]
- Smart Polymers [Spring 2010]
- Nanoparticle Materials and Transport [Fall 2011]
- Polymer-Magnetic Nanocomposites [Fall 2014]
- Investigations of Polymers and Nanocomposites [Fall 2015]
- Next Generation Polymer Design, Analysis and Processing [Spring 2016]

CHE 4143/6143: Advanced Polymers and Composite Materials; Mississippi State University [Fall 2015]

CHE 4313/6313: Transport Phenomena; Mississippi State University [Spring 2007, Spring 2010*, Spring 2011, Spring 2016] * As Directed Individual Study, CHE 4000

CHE 4990/6990: Advanced Polymeric and Multicomponent Materials; Mississippi State Univ. [Fall 2008, Spring 2012]

CHE 7000: Directed Individual Study, Mississippi State University
- Professional Development for Women in Engineering – [Spring 2009]
- Technical Writing for Publication [Spring 2009]
- Next Generation Polymer Design, Analysis and Processing [Spring 2016]

CHE 8123: Chemical Kinetics and Dynamics; Mississippi State University [Spring 2010*]
* As Directed Individual Study, CHE 7000, Ashley Cornell, Ersan Eyiler, Caitlin Naske

CHE 8523: Advanced Transport Phenomena; Mississippi State University [Spring 2007, Spring 2010, Spring 2011]

Course Co-Instructor

CHE 211: Intro. to Chemical Engineering (Mass and Energy Balance); Clemson Univ. [Spring 2003]

ABE/ChE/ME 4624/6624: Experimental Methods in Materials Research; Mississippi State University [Fall 2005, Fall 2007, Fall 2009, Fall 2011, Fall 2013]

CHE 4313/6313: Transport Phenomena; Mississippi State University [Fall 2012]

Postdoctoral and Research Associate Advisor

Shijie Ding, postdoctoral researcher, July 16, 2006-July 15, 2007

Shampa Aich, postdoctoral researcher [co-advisor: Adrienne Minerick (ChE) - primary], August 1, 2006-July 31, 2007

Shetian Liu, postdoctoral researcher [co-advisor: Mark White (ChE) - primary], July 1, 2008-November 30, 2008

Caitlin Naske, post-baccalaureate researcher, October 16, 2008-May 14, 2009

P. Zach Wynne, post-baccalaureate researcher, August 16, 2009-May 1, 2010

I-Wei Chu, postdoctoral researcher, October 1, 2010-January 4, 2013

Erick Vasquez, postdoctoral researcher, August 16, 2013-July 23, 2015

Anandi Varadarajan, post-masters researcher, May 16, 2015-present

Rangana (Ran) Wijayapala, postdoctoral researcher, September 1, 2015-present

Graduate Research Advisor

Current:

- Gabe Monroe [co-advisor: S. Thompson (ME) - equivalent] – Ph.D. Student, Mechanical Engineering; January 2013-present; Dissertation: "Development and Testing of an Ferrofluidic Oscillating Heat Pipe for Waste Heat Recovery (*tentative*)" [**Awards**: 2016 Bagley College of Engineering Student of Fame; 2nd place oral presentation, Physics and Computations Sciences, Mathematics, and Engineering Division, MSU Graduate Research Symposium, 2015; MSU Bagley Graduate Fellowship, 2013-2015]
- Huiyu Wang [co-advisor: S. Thompson (ME) - equivalent] – Ph.D. Student, Mechanical Engineering; January 2014-present; Dissertation: TBD
- Swati Kumari – M.S. Student, Chemical Engineering; February 2014-present; Thesis: "Synthesis and Characterization of Stimuli Responsive Polymer-based Nanocomposites (*tentative*)"
- Ashley Williams [co-advisor: D. Keith Walters (ME) - equivalent] – Ph.D. Student, Mechanical Engineering; Dissertation: TBD; August 2010-present

Former:

- Anandi Varadarajan – M.S. Student, Chemical Engineering; January 2013-December 2014; ***Graduated Fall 2014***; Thesis: "Impacts of feedstock bark addition and centrifugal filtration on pyrolysis oil properties and storage stability" [**Award**: Bridge Assistantship, MSU Bagley College of Engineering, Fall 2014; Distinguished M.S. Research Award, MSU Bagley College of Engineering Graduate Research Poster Competition, 2014]
- LaiBao Zhang – M.S. Student, Chemical Engineering; January 2013-July 2015; ***Graduated August 2015***; Thesis: "Investigations of the stability of pyrolysis oil during high temperature treatment" [**Award**: 1st Place Award, 13th Annual Graduate Student Research Symposium, Mississippi State University, March 21, 2015]
- Gideon Mabeny – M.S. Student, Chemical Engineering; March 2014-August 2014
- P. Zach Wynne – M.S. in Chemical Engineering; ***Graduated May 2014*** (August 2010-May 2014); Thesis: "Processing pyrolysis oil: pilot plant scale centrifugal filtration and stability testing"
- Bo Portillo – Ph.D. Student, Chemical Engineering; June 2013-May 2014
- Ersan Eyiler – Ph.D. in Chemical Engineering; ***Graduated August 2013*** (August 2009-August 2013); Dissertation: "Development of degradable renewable polymers and stimuli-responsive nanocomposites"

[**Awards**: The Republic of Turkey Ministry of National Education Ph.D. Fellowship, 2009-2013; MSU Graduate Travel Award, 2010; SPE ANTEC Travel Award, 2011 and 2012]

Erick Vasquez – Ph.D. in Chemical Engineering; ***Graduated August 2013*** (June 2009-August 2013); Dissertation: "Surface Modification and Transport Properties of Nano- and Micro-particles" [**Awards**: Finalist for the Study Mississippi International Student of the Year Award, 2012; Bagley College of Engineering Ph.D. Fellowship, 2009-2010, 2010-2011; Selected Participant, 12th National School on Neutron and X-ray Scattering, 2010; 1st place poster award, BioSim Focus Area, MS NSF EPSCoR Meetings, 2010 and 2011; Outstanding Researcher Award, MSU Graduate Student Symposium, Spring 2011; Selected MS Student Representative, National EPSCoR Conference, Oct. 24-27, 2011, Coeur d'Alene, Idaho; Selected Participant, 2013 Excellence in Polymer Graduate Research Symposium at the 245th ACS National Meeting in New Orleans, LA, April 9, 2013]

Maryam Dadgarmoghaddam – M.S., Chemical Engineering; January 2011-May 2013 [**Awards**: 2012 Inductee, Phi Kappa Phi; Bagley College of Engineering Ph.D. Fellowship, 2012-2014]

MD Shamim Howlader [co-advisor: Santanu Kundu (ChE) - primary] – M.S. Student, Chemical Engineering; February 2013-April 2013

Clay Adkison [co-advisor: Santanu Kundu (ChE) - primary] – M.S. Student, Chemical Engineering; October 2012-February 2013

Ashley Cornell – M.S. in Chemical Engineering; ***Graduated May 2012***; Thesis: "Studies in Applied Materials Science: Drug-biofluid Interactions and Light-emitting Polymer Films"

Emilia Smith – M.S. Student, Chemical Engineering; June 2011-February 2012

Caitlin Naske– M.S. in Chemical Engineering; ***Graduated Dec. 2010***; Thesis: "Determination of Chemical and Physical Property Changes in Aged Pyrolysis Oils"

Mathew Rowe – Ph.D. in Chemical Engineering; ***Graduated May 2010***; Dissertation: "Synthesis and Characterization of Bioplastics from Renewable Resources" [Awards: BCoE Bagley Ph.D. Fellowship, 2006-2009; SPE Scholarship, 2009]

Vijitha Mohan – M.S. in Chemical Engineering; ***Graduated August 2008***; Thesis: "Selective Phosphate Ester Cleavage" [Awards: 1st place presentation award, 2007 MSU GSA Research Symposium]

Aaron Graham – M.S. Student, Chemical Engineering, Fall 2007–Spring 2008

Undergraduate/High School Research Advisor -- Primary

Current:

1. Evan Prehn – Fall 2014-present
2. Erik Sanchez Antonio – Fall 2014-present [**Award**: 2nd Place Award, MSU Undergraduate Research Symposium, April 2015]
3. Cayla Cook – Summer 2014 [intern from Itawamba Community College], Summer 2015-present [transferred to MSU CEE; applying to MSU ChE graduate program]
4. Anna Taconi – Fall 2015-present
5. Michael Kyzar (HS, MSMS) – Fall 2015-present
6. Jarrod Cannette – Fall 2015-present
7. David Ladner – Fall 2015-present
8. Abdullah Qusailah – Fall 2015-present

Former:

1. Jeffrey Johnston – Fall 2013-Fall 2015 [**Awards**: MSU Honors College Summer Research Program for Undergraduate Students, 2014; 1st place poster award, Physical Sciences and Engineering Division, MSU Summer Undergraduate Research Symposium, 2014]
2. John Tomlinson – Spring 2013 [intern from East MS Community College], August 2013-December 2015 [transferred to MSU ChE and graduated with B.S. in Dec. 2015]
3. Ornella Tempo (NSF REU, Univ. of Conn) – Summer 2015
4. Justyn Forehand (NSF REU, NCSU) – Summer 2015
5. Andres Chaparro Sosa – Fall 2013-Spring 2015 [**Awards**: MSU Graduate School Summer Research Program for Undergraduate Students, 2014; MSU Bagley College of Engineering Undergraduate Research Program, Fall 2014, Spring 2015]

6. Annie (Caitie) O'Horo – Spring 2013, Fall 2013-Spring 2014, Fall 2014-Spring 2015
7. Yiwei (Zoe) Hu (HS, MSMS) – Spring 2015 [**Award**: Harvard Internship, Spring 2015]
8. Franklyn Hall – Spring 2014-Fall 2014
9. Wilhelm Liano – Summer 2014
10. Tomas Nichols – Summer 2014
11. Tyler Williams, Visiting Undergraduate Researcher, Mississippi Gulf Coast Community College, Summer 2014
12. Pearl (Sherly) Boddu, Visiting Undergraduate Researcher, Emory University, Summer 2014
13. Gavin Barnett – Spring 2012-Spring 2014
14. Jasmine Young – Summer 2011, Spring 2013
15. Glynn Freeman – Fall 2013
16. Jon Moraga – Fall 2013
17. Thaige Gompa – Fall 2013-Spring 2014
18. Matthew Gresham – Summer 2011-Fall 2012; Fall 2013-Spring 2014
19. Jack Stogner – Spring 2012, Fall 2012-Spring 2013
20. Kiefer Slaton – Summer 2012-Summer 2013
21. Gerald Nail – Spring 2013
22. Michael Harper – Spring 2012, Fall 2012
23. Bo Portillo – Spring 2012, Fall 2012
24. Ken Newton – Spring 2012-Fall 2012
25. Dani Sanchez – Fall 2012
26. Philip Polk – Summer 2010-Spring 2012
27. Seth Roberts – Spring 2012
28. Mariana Lemus Lopez – Summer 2010-Fall 2011
29. Brandon Abbott – Summer 2008, Fall 2011
30. Breyounga Jackson – Summer 2011
31. Kate Bush – Fall 2010-Spring 2011
32. Liza Nalley – Fall 2010
33. Marquita Jones – Fall 2009-Spring 2011
34. William (Brad) Nicholson – Fall 2010-Spring 2011
35. Kayla Chandler (HS, MSMS) – Spring 2011
36. Jennifer Miller – Summer 2010-Fall 2010
37. John Johnson – Fall 2010
38. Ayesha Hicks – Fall 2009, Summer 2010-Fall 2010
39. Amarachi Onwubiko – Summer 2008, Spring 2009-Summer 2009, Summer 2010
40. Matthew Young – Fall 2009-Summer 2010 [**Award**: 1st place award, Life Sciences Division, MSU Undergraduate Research Symposium, 2010]
41. Jason Speed – Summer 2009-Summer 2010
42. Julian Smith – Fall 2009
43. Dylan Wallace – Fall 2009
44. Louise Stewart (NSF REU, Columbia University in the City of New York) – Summer 2009
45. Zachary Wynne – Summer 2007, Summer 2008-Summer 2009
46. Phillip Jamison (Fall '06-Spring '08: co-advised with Dr. Todd French, ChE) – Fall 2006-Summer 2009
47. Michael Lamb – Summer 2007-Summer 2009 [MSU EPSCoR Scholarship, 2007-2009]
48. Kamal Upadhyaya – Spring 2009
49. Jessica Balle – Spring 2009
50. Sarah Crosby – Spring 2007-Spring 2008, Fall 2008-Spring 2009 [**Award**: 1st place poster, Engineering, MSU Undergraduate Research Symposium, 2009]
51. Andrew McMaster – Spring 2007-Spring 2008, Spring 2009
52. Meagan Tidwell – Fall 2008
53. Shelby Steelhammer (HS, MSMS) – Fall 2008
54. Adeola Adebiyi – Summer 2008

55. Erin Smith – Fall 2006-Spring 2008 [**Award**: 3rd place in UG poster competition at 2007 AIChE National Meeting; 2007 AIChE Women's Initiative Committee Travel Grants Award]
56. Lekeith Terrell – Fall 2006-Spring 2008 [**Award**: MSU BCoE Student Hall of Fame, 2008; ACS Scholars Program, 2006]
57. Jeremy Gandy – Summer 2007-Spring 2008
58. Mitch Wall – Summer 2007-Fall 2007
59. Katie Adler (NSF REU, University of Michigan) – Summer 2007
60. Eivy Lugo-Alvarez (NSF REU, University of Puerto Rico-Mayaguez) – Summer 2007
61. Parisa Toghiani – Summer 2007
62. Laura Hubbard – Fall 2006
63. Ja'Terrica Robinson (HS, QUEST) – Summer 2006
64. Lasheena Culberson – Spring 2006
65. Robert McComas – Fall 2005-Spring 2006
66. Will Sumerford – Fall 2005-Spring 2006

Undergraduate/High School Research Advisor -- Secondary

Former:

Alyssa Terry (co-advised with Dr. G. Thibaudeau, MSU EMC/BioSci) – Summer 2008
Florian Schulz (co-advised with Dr. A. Minerick, NSF REU, Univ. of Hamburg, Germany) – Summer 2007
Sarah Proulx (Clemson Univ) – Fall 2004-Spring 2005
Wenjin Wang (Clemson Univ) – Spring 2003-Summer 2004
Ryan Harris (Clemson Univ) – Fall 2003-Spring 2004
Curran Chandler (Clemson Univ, NSF REU) – Summer 2003
Aaron Ruhe (Clemson Univ) – Spring 2004-Spring 2005
Chris Shuler (Clemson Univ) – Fall 2002-Spring 2003
Chris Gentry (Clemson Univ) – Spring 2002-Fall 2002
Brian Norowski (Clemson Univ) – Fall 2001-Spring 2002
Annie Daley (Clemson Univ) – Fall 2000-Spring 2001
Kristina Krysanowski (Clemson Univ) – Summer 2000
John McKibbin (Clemson Univ) – Fall 1998-Spring 2000
Kara Andregetti (Clemson Univ) – Fall 1998-Spring 2000

Dissertation/Thesis Committee Member

Current:

MD Shamim Howlader, M.S. Student, Chemical Engineering
Aubrey Rainer, M.S. Student, Chemical Engineering
Heather S. Thomas, M.S. Candidate, Chemical Engineering
Matt Thomas, Ph.D. Candidate, Chemical Engineering
Amy Parker, Ph.D. Candidate, Chemical Engineering
Ashley Williams, Ph.D. Student, Mechanical Engineering
Seyedmeysam (Meysam) Hashemnejad, Ph.D. Candidate, Chemical Engineering
Swati Kumari, M.S. Candidate, Chemical Engineering
Gabe Monroe, Ph.D. Candidate, Mechanical Engineering
Huiyu Wang, Ph.D. Candidate, Mechanical Engineering
Justin McMahan, Ph.D. Student, Biomedical Engineering [Award: 3rd place podium award, Outstanding Research - Biological Science and Engineering Division, MSU Summer Undergraduate Research Symposium, 2014]
Mahla Zabet, Ph.D. Student, Chemical Engineering

Former:

Janice Cunningham, M.S. Student, Biomedical Engineering [Award: 1st place Outstanding Research Award, Life and Biomedical Sciences and Engineering, MSU 12th Annual Graduate Student Research Symposium, 2014], May 2015
LaiBao Zhang, M.S. Student, Chemical Engineering, August 2014
Bo Portillo, Ph.D. Student, Chemical Engineering
Anandi Varadarajan, M.S. Student, Chemical Engineering, December 2014
P. Zach Wynne, M.S. Student, Chemical Engineering, May 2014
Chinni Yalamanchili, M.S. Candidate, Chemistry, May 2014
Robert McComas, M.S. Candidate, Chemical Engineering, May 2014
Ersan Eyiler, Ph.D. Candidate, Chemical Engineering, August 2013
Erick Vasquez, Ph.D. Candidate, Chemical Engineering, August 2013
Maryam Dadgarmoghaddam, M.S. Student, Chemical Engineering, August 2013
Ashley Cornell, M.S. Graduate, Chemical Engineering, May 2012
Clay Adkison, M.S. Student, Chemical Engineering
Jacqueline Hall, Ph.D. Graduate, Chemical Engineering, May 2012
Emilia A. Smith, M.S. Student, Chemical Engineering
Devkant Gandhi, Ph.D. Graduate, Chemical Engineering, August 2011
Sheena Reeves, Ph.D. Graduate, Chemical Engineering, May 2011
Caitlin Naske, M.S. Graduate, Chemical Engineering, December 2010
Andro Mondala, Ph.D. Graduate, Chemical Engineering, December 2010
Soumya S. Keshavamurthy, Ph.D. Graduate, Chemical Engineering, December 2010
Mathew Rowe, Ph.D. Graduate, Chemical Engineering, May 2010
Aaron Graham, M.S. Student, Chemical Engineering
Vijitha Mohan, M.S. Graduate, Chemical Engineering, December 2008
Matt Thomas, M.S. Graduate, Chemical Engineering, December 2006
Holly J. Martin, Ph.D. Graduate, Fall 2006, Chemical Engineering
Kaiweng Liang, Ph.D. Graduate, Fall 2005, Chemical Engineering

PROFESSIONAL SERVICE

Journal Editorial Board

Scientific Reports, Nature Publishing Group (2015-present)

Manuscript Reviewer

Journal of the American Chemical Society (JACS)
Macromolecules
Polymer
Polymer Bulletin
Physical Chemistry Chemical Physics (PCCP)
Chemical Society Reviews
Soft Matter
Applied Surface Science
Colloids and Surfaces B: Biointerfaces
Biotechnology and Bioengineering
Environmental Science & Technology
Frontiers in Education (FIE)
International Journal of Engineering Education
Journal of Pre-College Eng. Educ. Research (J-PEER)
Energy & Fuels
Journal of Materials Chemistry
Propellants, Explosives, Pyrotechnics
Society For Biomaterials
Journal of Applied Polymer Science
Journal of Polymer Science: Polymer Physics
PLOS ONE
Propellants, Explosives, Pyrotechnics
Acta Biomaterialia
Advances in Engineering Education
Colloids and Surfaces A: Physicochemical and Engineering Aspects

American Society for Engineering Education (ASEE): New Engineering Educators (NEE), Women in Engineering (WIE), and Educational Research and Methods (ERM) Divisions

Society of Plastics Engineers (SPE): BioPlastics Special Interest Group (SIG)

Proposal Reviewer

National Science Foundation

National Aeronautics and Space Administration

Oak Ridge National Laboratory

Louisiana EPSCoR

Louisiana Board of Regents' Research Competitiveness Subprogram

Book Reviewer

Reviewer, Book Proposal, "Polymer Surface Modification" by A.P. Kharitonov, Wiley-Blackwell, John Wiley & Sons, Inc., August 2009

Reviewer, Book, "Analysis of Transport Phenomena" by William Deen, 2nd Edition, Oxford University Press, Summer 2010.

Reviewer, Book, "Transport Phenomena" by Palghat Ramachandran, Cambridge University Press, Fall 2013.

Member, Textbook Advisory Panel, Elsevier Academic Press, Ashby et al., Materials: engineering, science, processing and design, 3rd edition, 2013-present.

Member, Textbook Advisory Panel, Elsevier Academic Press, Ashby et al., Materials: engineering, science, processing and design, 2nd edition, 2008-2009.

University, College, and Departmental Committees

University

Office of Research & Economic Development, Strategic Process Planning Committee, Mississippi State University, 2007-2008

Faculty Representative, President's Commission on the Status of Women (PCSW), Mississippi State University, 2012-2013

Graduate Council, Mississippi State University, 2013

College

Academy of Distinguished Teachers Selection Committee, Bagley College of Engineering, 2011

Simrall Award Committee, Bagley College of Engineering, 2010

Course and Curriculum Committee, Bagley College of Engineering, 2010-2012

P&T Committee, Bagley College of Engineering, 2012-2013

Faculty Grievance Panel, Bagley College of Engineering, 2012-2014

Department

Director Search Committee, Chemical Engineering, 2008-2010, 2010-2011

Faculty Search Committee, Chemical Engineering, 2010-2012, 2013-2015

Undergraduate Affairs Committee, Chemical Engineering, 2008-2011, 2014-present

Undergraduate Curriculum Concept Inventory Committee (Ad hoc), Chemical Engineering, 2008-2009

Graduate Affairs Committee, Chemical Engineering, 2006-2008, 2009-2014

Graduate Coordinator, Chemical Engineering, 2012-2013

ChE Engineering Studio Space Plan (Ad hoc), July 2012.

College Working Groups

Materials, 2005-present
Biotechnology, 2005-present; Co-chair, 2011-2012
Energy, 2005-present

Organization Service

Secretary, Women in Engineering Division (WIED), American Society of Engineering Education (ASEE), 2014-2016 [*Elected Position*].

Faculty Representative for MSU, Federal Demonstration Partnership (FDP), 2012-2015

Organizer and Session Chair, [*Newly Developed Session*] "Excellence in Graduate Polymer Research," Polymers -- Materials Engineering and Sciences Division, AIChE Annual Meeting, Atlanta, GA, Nov. 16-21, 2014.

Session Chair, "Stimuli Responsive Polymers," Materials Engineering and Sciences Division, AIChE Annual Meeting, San Francisco, CA, Nov. 13, 2006.

Member, Chemical Engineering Ray Fahien Award Selection Committee, American Society of Engineering Education (ASEE), 2013-present.

Director, Bioplastics Special Interest Group (BioSIG), Society of Plastics Engineers (SPE), 2011-2014, 2014-present [*Elected Position*].

Reviewer, Society For Biomaterials (SFB), Session: Surface Modification of Three Dimensional Scaffolds for Tissue Engineering Applications, 2010 Annual Meeting and Exposition, April 21-24, 2010, Seattle, WA.

Member, Program Committee, Applications of Engineering Education Research (AEER), International Journal of Engineering Education (IJEE), 2009.

Session Chair, "Polymeric Biomaterials," Materials Engineering and Sciences Division, AIChE Annual Meeting, Nashville, TN, Nov. 8-13, 2009.

Session Chair, "Stimuli Responsive Polymers," Materials Engineering and Sciences Division, AIChE Annual Meeting, Philadelphia, PA, Nov. 21, 2008.

Session Co-chair, "Naturally-derived Biomaterials," Materials Engineering and Sciences Division, AIChE Annual Meeting, Salt Lake City, UT, Nov. 7-12, 2010.

Session Co-chair, "Structure and Properties of Polymers III: Networks and Gels," Materials Engineering and Sciences Division, AIChE Annual Meeting, Nashville, TN, Nov. 8-13, 2009.

Session Co-chair, "Polymer Reaction Engineering, Kinetics and Catalysis II," Catalysis and Reaction Engineering Division, AIChE Annual Meeting, Philadelphia, PA, Nov. 19, 2008.

Session Co-chair, "Polymer Thin Films and Interfaces IV," Engineering Sciences and Fundamentals Division, AIChE Annual Meeting, Philadelphia, PA, Nov. 20, 2008.

Member, ASEE Women in Engineering Division Best Paper Review Committee, 2008.

Session Chair, "Polymers for Energy Applications," Topical 7, AIChE Annual Meeting – Salt Lake City, UT, Nov. 8, 2007.

Member, Steering Committee, Bioplastics Special Interest Group (BioSIG), Society of Plastics Engineers (SPE), 2007-2010.

Session Chair, "Stimuli Responsive Polymers," Materials Engineering and Sciences Division, AIChE Annual Meeting, San Francisco, CA, Nov. 13, 2006.

Member, Organizing Committee, Topical Conference: Polymer Characterization and Analysis, Engineering and Properties Division (EPSDIV),Society of Plastics Engineers (SPE), 2007-2008.

Additional Service

Administrative

Project Administrator for Mississippi, Smart MATerial Design, Analysis and Processing (SMATDAP) Consortium (LA-MS), National Science Foundation, 2014-present

Thrust Leader, Stimuli Responsive Polymer-Nanoparticle Hybrids (ST3), National Science Foundation LA-MS EPSCoR Track II, 2014-present.

Focus Area Leader, Biological Systems Simulation (BioSim), National Science Foundation MS EPSCoR Track I, 2012-present.

Member, NSF MS EPSCoR Steering Committee, Mississippi State University, 2012-2015.

Thrust Leader, Specialty Chemicals, DOE Sustainable Energy Research Center (SERC), Mississippi State University, 2008.

Student (Group) Advising

Faculty Advisor, Dow Bridge Engineering Students, Bagley College of Engineering, Mississippi State University, 2014-2015.

Advisor, National Science Foundation Computer Science, Engineering and Mathematics Scholarship (CSEMS) S-STEM Program, Mississippi State University, 2007-2012.

Faculty Advisor, Graduate Women in Science & Engineering (G-WISE), Mississippi State University, Spring 2011-present.

Outreach—Industrial/National Lab

Technical Advising: Columbus Roll Corporation, 2012-present

Technical Advising: Severstal, 2010-2014

Organizer, Recruitment and Informational AIChE Meeting, Juan C. Boulton, Manager of Technical Engineering -- Spinning/Poly/Recovery, Toray Carbon Fibers America, February 15, 2012.

Organizer, Collaboration with Cryovac, Division of Sealed Air, polymer resin provided for experiments in ChE 4990/6990, "Advanced Polymeric and Multicomponent Materials," Fall 2008.

Organizer, Collaboration with Sandhill Plastics, recycled polyethylene sheeting provided for experiments in ME/ChE 4624/6624, "Experimental Methods in Materials Research," Fall 2009.

Member, SNS and HFIR User Group (SHUG) at Oak Ridge National Laboratory (ORNL), 2007-present.

Outreach—K-16

Elementary Student Tutor, "Math, Reading, and Science," Sudduth Elementary School, Starkville MS, January 2016-present.

Elementary Classroom Outreach, "Welcome to the Wonderful World of Polymers," Nancy Sistrunk's 5th grade class, Ward-Stewart Elementary School, Starkville, MS, February 8, 2010, www.cdispatch.com/news/article.asp?aid=4778, www.msstate.edu/web/media/detail.php?id=4804.

Teacher Training Outreach, "Nanotechnology and Nanomedicine," presentation and demonstrations at the MS NSF EPSCoR Teacher's Workshop, MSU, June 24, 2010.

High School Student Outreach, "What Is Chemical Engineering?" Hands On Engineering, High School Student Workshop, MSU, July 21, 2010.

Teacher Training Outreach, Designed, prepared, and distributed ferrofluid kits to K-16 teachers, MS NSF EPSCoR Program, Summer 2010.

High School Student Outreach, Society of Women Engineers—MSU Chapter, High School Student Faculty Panel Discussion, #bethatengineer, November 7, 2015.

Poster Judge, Mississippi State University, ChE1101 – Freshman Seminar, December 2005.

Poster Judge, AIChE Annual Meeting, San Francisco, CA, November 2006.

Poster Judge, Mississippi State University, ChE4134 – Process Design, November 2006.

Co-instructor, "Introduction to Fluid Mechanics and Aerodynamics," Mississippi Governor's Summer School, Summer 2008.

Speaker, "Engineering Careers," ASME -- Northeast Mississippi Section, February 23, 2006.

Speaker, "Graduate School. Why? Why Me? How?" AIChE Student Chapter, Mississippi State University, October 21, 2010.

Speaker, "Graduate School. Why? Why Me? How? Why MSU?," AIChE Student Chapter, Louisiana State University, March 5, 2009.

Speaker, "What is Chemical Engineering?" Hands-On Engineering outreach program for high school students, MSU, July 21, 2010.

Testing Partner, NSF Phase 2 Course, Curriculum, and Laboratory Improvement (CCLI) Program, Michael Prince, Bucknell University, 2007-2015.

Guest Lecturer, "Polymers: Introduction, Chemical and Physical Characterization, and Mechanical Testing," ABE/CHE/ME 4624/6624: Experimental Methods in Materials Research, MSU, Fall 2005, Fall 2007, Fall 2009, Fall 2011, Fall 2013.

Guest Lecturer, "Stimuli Responsive Polymers," ME 4990/6990: Smart Materials, MSU, Spring 2010.

Lesson Developer, Day One Project, www.dayone.msstate.edu/leading/, Facilitating MSU Freshman outreach to Grade 4-6 students in MS counties: Choctaw, Clay, Oktibbeha, Webster, Winston, Lowndes, and Noxubee, 2010-2011.

Faculty Representative, UDBHAV-2015 Festival, Indian Student Association, Mississippi State University, September 20, 2015.

Outreach—Post-Graduate

Panel Member, "How Women Lead and the Difference It Makes", Mississippi State University, February 21, 2014.

Organizer, Discussion with Dr. Lori Mann Bruce on "Career Paths to Leadership in Academia," Mississippi State University, March 25, 2014.

Moderator, Panel Discussion on "Women in Leadership in Science and Engineering," Mississippi State University, April 4, 2014.

Panel Member, "How Women Lead and the Difference It Makes," Bagley College of Engineering, Mississippi State University, February 21, 2014.

Panel Member, Preparing Future Faculty Program, Mississippi State University, May 13, 2011.

Review Panelist, National Defense Science and Engineering Graduate (NDSEG) Fellowship Program, 2007.

Seminar Co-organizer, “Interested in Characterizing Biological or Material Interfaces?,” Mark A. Poggi, Q-Sense Inc., September 12, 2007.

Seminar Organizer, “Infrared Analysis Techniques for Biofuels Research& Development,” Forrest Weesner and Steven McQueen, ThermoFisher Scientific, May 2, 2007.

Seminar Organizer, “Advances in the Modification of Poly(Lactic Acid),” Douglas Hirt, Clemson University, June 26, 2008.

Committee Member, Ph.D. Qualifying Examinations, Swalm School of Chemical Engineering, MSU, Summer 2010.

Organizer, Recruitment Sessions for Biomedical Materials Science Graduate Program at the University of Mississippi Medical Center, January 7, 2008.

Seminar Organizer, “Effective Time Management Workshop,” Douglas Hirt, Clemson University, June 26, 2008.

Seminar Organizer, “Detection of Molecular Gas Phases and Their Transport Properties in Two and Three Dimensions by Atomic Force Microscopy,” Srinivas Manne -- Department of Physics, University of Arizona, December 5, 2008.

Seminar Co-organizer, “AFM Basics and the Veeco Bioscope II,” Dake Laken, Veeco, Inc., January 7, 2009.

Speaker, “Career Paths, Research, Professional/Personal Balance, and You,” – MSU SWE Student Chapter, September 16, 2008.

Speaker, “Surface Modification Via Grafting: Stimuli Responsive Polymer Surfaces,” MSU SPE Student Chapter, September 8, 2005.

Outreach—Public

Outreach, Interview with MS Public Broadcasting on Bioplastics Research, http://mpbonline.org/News/article/engineering_biodegradable_plastics_out_of_biomass_crops_and_timber_harvest, February 22, 2011.

PROFESSIONAL DEVELOPMENT

Education Conferences:

ASEE Annual Conference, San Antonio, TX, June 11, 2012.

ASEE Annual Conference & Exposition, Vancouver, BC, Canada, June 26-29, 2011.

Issues for Women in Engineering,” 2010 ASEE National Conference, Louisville, KY, June 23, 2010.

Frontiers of Engineering Education (FOEE) Symposium, National Academy of Engineering, Irvine, CA, December 13-16, 2010.

ASEE Annual Conference – Louisville, KY; June 20-23, 2010.

ASEE Summer School for Chemical Engineering Faculty – Boulder, CO; July 27-August 1, 2002.

Share the Future Conference sponsored by the SUCCEED Coalition – Gainesville, FL; March 4-5, 2002.

ASEE Annual Conference – Montreal, Canada; June 17-18, 2002.

Training:

Research Ethics, Mississippi State University, Fall 2014

NSF EPSCoR Communications Workshop, Mississippi State University, Fall 2014

Distance Instruction Certification, Center for Teaching and Learning (CTL), Mississippi State University, March 1, 2014

International Traffic in Arms Regulations (ITAR) Compliance Training, Mississippi State University, February 2014.

Japanese Culture and Etiquette Training, BancorpSouth, July 25, 2013

Hazardous Waste Training, Office of Regulatory Compliance (ORC), Mississippi State University, Fall 2005-present

Protection of Human Subjects Training, Office of Regulatory Compliance (ORC) Institutional Review Board, Mississippi State University, 2008-present

Workshops and Courses:

7 Reasons to Flip the College Classroom – And How to Do It, M.A. Sperber and C.D. Roberts, Cengage Learning, Fall 2014

Best Practices in Online Instruction, Mississippi State University, Spring 2014.

Making the Transition to Active Learning: Selecting and Implementing Appropriate Active Learning Techniques in Engineering Courses, ASEE-SE Conference, Mississippi State University, April 1, 2012.

David Carlisle Hull Faculty Leadership Program, Mississippi State University, 2011-2012

Get Students to Focus on Learning Instead of Grades– Mississippi State University, January 20, 2012.

ACS Leadership Workshop, New Orleans, LA, November 30, 2010.

Frontiers of Engineering Education (FOEE) Symposium, National Academy of Engineering, Irvine, CA, December 13-16, 2010.

Women LEAD – Leadership, Exploration And Development, Bagley College of Engineering and College of Business, Mississippi State University, August 25, September, 22, October 27, and November 17, 2009.

THINGS THAT WORK! Seminar on Teaching Strategies and Tactics – Mississippi State Univ., Sept. 17, 2009.

Grant Writing Institute, Council on Undergraduate Research – Mississippi State University, May 26-29, 2009.

Ethical Conduct of Research – Mississippi State University, October 15, 2008.

Bagley College of Engineering New Faculty Development Workshops –Mississippi State University, Fall 2005.

Career Planning for Prospective Faculty – AIChE Annual Meeting Workshop, November 7, 2004.

Pre-Instructional Strategies – Clemson University, April 23, 2004.

Women in the Professorate – Clemson University, April 21, 2004.

Five Decisions Students Make About You – Clemson University, February 13, 2004.

How to Write a Winning Grant Proposal – Clemson University, February 9, 2004.

The Vitae and Resume: All You Ever Wanted to Know and More – Clemson University Michelin Career Center, January 22, 2004.

Future Directions in Surface Modification Research – NSF Center for Advanced Engineering Fibers and Films, Clemson University, January 6, 2004.

Brain Research and Its Implications on Learning – Clemson University, December 15, 2003.

Effective Time Management – NSF Center for Advanced Engineering Fibers and Films, Clemson University, August 8, 2003.

Writing a Teaching Philosophy – Clemson University, July 17, 2003.

Taking Command of Your Classroom with Kindness – Clemson University, June 27, 2003.

What a Picture is Worth: Teaching Higher-Order Thinking to Visual Learners – Clemson Univ., April 11, 2003.

How to Get Your Students to Do the Readings – Clemson University, August 14, 2002.

Effective Teaching for Engineering Professors (Teaching Institute) – ASEE Chemical Engineering Summer School, Univ. of Colorado, July 27, 2002.

Bioengineering – ASEE Chemical Engineering Summer School, Univ. of Colorado, July 30-31, 2002.

Enhancing and Advancing Student Learning – ASEE Chemical Engineering Summer School, Univ. of Colorado, July 30-31, 2002.

Career Development – ASEE Chemical Engineering Summer School, Univ. of Colorado, July 28, 2002.

Research Ethics – Robert J. Rutland Center for Ethics, Clemson University, March 7, 2002.

Concept Inventories for Engineering Sciences – University of Florida, March 4, 2002.

A Unified Approach to Engineering Science – University of Florida, March 4, 2002.

Changing the Campus Culture: Realistic Mission or Impossible Dream – University of Florida, March 4, 2002.

FUNDED PROPOSALS

Title: Synthesis and Characterization of pH-Responsive Polyamine Grafted Layers
Sponsor: Mississippi State University Office of Research
Investigator(s): Keisha B. Walters (PI)
Period of Performance: 01/01/06-01/01/07
Amount: $9,979

Title: Using Atomic Force Microscopy to Understand pH-Responsive Polymer Conformations
Sponsor: Mississippi State University Office of the Vice President for Research
Investigator(s): Keisha B. Walters (PI)
Period of Performance: 10/31/05-10/31/06
Amount: $1,000

Title: Innovations Through Computational Sciences
Sponsor: National Science Foundation
Investigator(s): MSU PIs: Colin Scanes, Sandra Harpole, David Marcum, Greg Burgreen, David Thompson, Keith Walters, and Keisha Walters
Period of Performance: 05/01/06-04/30/09
Amount: $2,250,000 ($449,999 MSU; $39,960 KBW)

Title: *In Situ* Neutron Reflectivity Studies of Tethered pH-Responsive Polymer Layers
Sponsor: Oak Ridge Associated Universities (ORAU)
Investigator(s): Keisha B. Walters (PI)
Period of Performance: 04/06-11/07
Amount: $10,000

Title: MRI: Acquisition of a Multi-User, High Resolution, Research Grade X-ray Diffractometer (XRD)
Sponsor: National Science Foundation
Investigator(s): Judy Schneider (PI); Co-PIs: Charles Pittman, Francis Lynch, Yaroslav Koshka, Alicia Beatty; Major Users: Ron Palmer, Rand German, Jim Newman, Jr., Keisha Walters
Period of Performance: 09/01/06-08/31/09
Amount: $403,185

Title: Development of Bioplastics from Biomass
Sponsor: US Department of Energy
Investigator(s): Keisha B. Walters (PI)
Period of Performance: 06/06-12/08
Amount: $137,023

Title: Separation of Specialty Chemicals from Bioenergy Processes
Sponsor: US Department of Energy
Investigator(s): Co-PIs: Keisha B. Walters, Adrienne Minerick, and Priscilla Hill
Period of Performance: 06/06-12/08
Amount: $431,636 ($137,055 KBW)

Title: Encapsulation of Trace Impurities in Biodiesel through Nanotechnology
Sponsor: US Department of Energy

Investigator(s): Co-PIs: Adrienne Minerick and Keisha B. Walters
Period of Performance: 06/06-12/08
Amount: $84,984 ($42,448 KBW)

Title: Characterization of Metal-Silica Core-Shell Nanoparticles: An Electron Microscopy Study
Sponsor: Mississippi State University, Materials Characterization Lab (MCL), Electron Microscope Center
Investigator(s): Shampa Aich (PI), Adrienne Minerick (Co-PI), and Keisha B. Walters (Co-PI)
Period of Performance: 07/01/06-06/30/07
Amount: $4,000 ($1,333 KBW)

Title: Course Proposal – Introduction to Fluid Dynamics and Aerodynamics
Sponsor: Mississippi Governor's School
Investigator(s): D.K. Walters (PI), Keisha B. Walters (Co-PI)
Period of Performance: 6/1/08 – 6/20/08
Amount: $2,500 ($625 KBW)

Title: SERC2 –Identification and Solution of Chemical Factors Responsible for the Negative Properties of Bio-Oils Produced from Wood Barks
Sponsor: US Department of Energy
Investigator(s): Keisha B. Walters (PI)
Period of Performance: 01/01/08-06/30/2011
Amount: $131,301

Title: Engineering Future Chemical Engineers: Incorporation of Process Intensification Concepts into the Undergraduate Curriculum
Sponsor: National Science Foundation
Investigator(s): Rebecca Toghiani (PI), Priscilla Hill (Co-PI), Adrienne Minerick (Co-PI), Keisha B. Walters (Co-PI), and Carlen Henington (Co-PI)
Period of Performance: 01/01/09-12/31/12
Amount: $150,000 ($30,000 KBW)

Title: Identifying a Method to Visually See Radiation/Contamination for Decontamination Activities and Dose Control
Sponsor: Entergy Services, Inc.
Investigator(s): Mark G. White (PI) and Keisha B. Walters (Co-PI)
Period of Performance: 07/01/08-12/31/08
Amount: $60,000 ($30,000 KBW)

Title: Quick Grant for an Atomic Force Microscopy Mini-Seminar Series
Sponsor: MSU ORED
Investigator(s): Keisha B. Walters (PI)
Period of Performance: 10/01/08-12/31/08
Amount: $2,000

Title: Modeling and Simulation of Complex Systems
Sponsor: National Science Foundation
Investigator(s): Sandra Harpole (PI)
Period of Performance: 5/15/09 - 5/14/14
Amount: $ 40M ($20M NSF; $4.3M BioSIM; $1.9M MSU BioSIM; $478,145 KBW)

Title: MRI: Acquisition of an Atomic Force Microscopy System for Advanced Materials Research and Education
Sponsor: National Science Foundation
Investigator(s): Keisha Walters (PI), Adrienne Minerick (Co-PI), Giselle Thibaudeau Munn (Co-PI), David Wipf (Co-PI), and Lakiesha Williams (Co-PI)

Period of Performance: 8/1/2009 – 7/31/2012
Amount: $726,940 ($726,940 KBW)
Title: Targeted Recruiting for Underrepresented PhD students in Chemical Engineering
Sponsor: MSU Office of the Graduate School, Mississippi State University
Investigator(s): Keisha B. Walters (PI)
Period of Performance: 04/01/09 – 09/30/09
Amount: $1,960

Title: Thermal Characterization Equipment for Diverse Particulate Materials Research and Education
Sponsor: National Science Foundation
Investigator(s): Priscilla Hill (PI), Keisha B. Walters (Co-PI), and Adrienne Minerick (Co-PI)
Period of Performance: 09/01/2009-08/31/2010
Amount: $115,000 ($38,333)

Title: SERC3: Production of Multiple Biofuels from Fractionated High-Sugar Pyrolysis Oil
Sponsor: US Department of Energy
Investigator(s): Phil Steele (PI), Keisha B. Walters and others (Senior Investigators)
Period of Performance: 01/01/2010-09/30/2012
Amount: ~$6M DOE ($349,162KBW)

Title: Innovations Through Computational Sciences
Sponsor: National Science Foundation
Investigator(s): Keisha Walters (PI)
Period of Performance: 07/15/06-10/31/09
Amount: $11,634

Title: Collaborative Computational and Experimental Characterization of the Physicochemical Properties of Bioactive Materials Related to their Transport in Pulmonary Mucus
Sponsor: National Science Foundation – MS EPSCoR Seed Grant Program
Investigator: Keisha Walters (PI); Co-PIs: Rebecca Toghiani (MSU), Greg Tschumper (Univ. of Miss.)
Period of Performance: 11/15/2010-08/31/2012
Amount: $152,354 ($40,177 KBW)

Title: pH and Temperature Dependent SANS Studies of Stimuli-responsive Polymer-nanoparticle Composites
Sponsor: Oak Ridge National Laboratory, HFIR User Proposal
Investigator(s): Keisha B. Walters (PI)
Period of Performance: 05/20/11 –05/23/11
Amount: N/A

Title: Characterization of Clear Wood- and Bark-Derived Pyrolysis Oil
Sponsor: KiOR, Inc.
Investigator(s): Glenn Steele (PI) and Senior Investigators: Keisha B. Walters and others
Period of Performance: 06/30/11 –07/01/12
Amount: ~$1M ($75,000 KBW)

Title: In Vitro Inhalation and Deposition of Polymer-Stabilized Gold Nanoparticles for Validation of Computer Simulated Particulate Distributions in the Lung
Sponsor: National Science Foundation – MS EPSCoR Seed Grant Program
Investigator: Keisha Walters (PI), Charlie McCormick (Co-PI, USM); Collaborators: Robert Hester (UMC) and Keith Walters
Period of Performance: 09/01/2011-08/31/2012
Amount: $86,395 ($43,201 KBW)

Title: SERC4
Sponsor: Department of Energy (DOE)
Investigator(s): PI: Keisha B. Walters
Period of Performance: July 1, 2011 – June 30, 2014 (NCE)
Amount: $115,157

Title: Mechanical Properties of Pulmonary Mucus
Sponsor: National Science Foundation – MS EPSCoR Seed Grant Program
Investigator(s): PI: Santanu Kundu (PI); Collaborators: Keisha Walters and D. Keith Walters
Period of Performance: 08/16/2012-08/15/2013
Amount: $43,505

Title: Support of KiOR Biofuels Development
Sponsor: MS Development Authority
Investigator(s): Glenn Steele (PI); Co-PIs: Keisha B. Walters and others
Period of Performance: 07/01/13 –11/30/14
Amount: ~$500,000 ($45,000 KBW)

Title: Selective Metals Removal in a Chrome Plating Process
Sponsor: Chrome Deposit Corporation
Investigator(s): PI: Keisha Walters
Period of Performance: 9/16/2013- 09/15/2015
Amount: $64,643

Title: Enhancing Imaging in Animal Reproduction using Nanotechnology
Sponsor: Mississippi State University – Office of Research and Economic Development
Investigator(s): Feugang, Jean M. (PI), Walters, Keisha B. (Co-PI), Vasquez, Erick S. (Co-PI)
Period of Performance: 11/01/13 – 10/01/14
Amount: $2,000

Title: Thermoelectricity Generation via Pulsating Ferrofluid
Sponsor: Mississippi State University – Office of Research and Economic Development
Investigator(s): Thompson, Scott M. (PI), Monroe, J. Gabe (Co-PI), Walters, Keisha B. (Co-PI), Vasquez, Erick S. (Co-PI), Berg, Matthew (Co-PI), Anderson, Derek (Co-PI), Woody, Jonathan (Co-PI)
Period of Performance: 11/01/13 – 10/01/14
Amount: $2,000

Title: Enhancing Undergraduate Teaching Effectiveness in Chemical Engineering: Developing Audio-Visual Material to Supplement Classroom Lectures
Sponsor: Mississippi State University – 2014 Schillig Special Teaching Projects
Investigator(s): Neeraj Rai (PI); Co-PIs: Santanu Kundu, Todd French, Keisha B. Walters, Priscilla Hill, Mark Bricka, Hossein Toghiani, Bill Elmore, Jason Keith
Period of Performance: 05/01/14 - 04/30/15
Amount: $3,000

Title: Electricity Generation and Enhanced Heat Transfer via Pulsating Nanofluid
Sponsor: National Science Foundation
Investigator(s): Thompson, Scott M. (PI), Walters, Keisha B.
Period of Performance: 07/01/2014 – 06/30/2017
Amount: $324,998 ($121,327 KBW)

Title: Microstructure and Nanomechanics of Native and Simulant Lung Mucus Doped with Nanoparticles
Sponsor: National Science Foundation – MS EPSCoR Seed Grant Program
Investigator(s): PI: Erick S. Vasquez; Co-PIs: Keisha Walters, Santanu Kundu
Period of Performance: 07/01/2014-08/31/2016
Amount: $42,924

Title: Modeling and Simulation of Complex Systems
Sponsor: National Science Foundation
Investigator(s): Sandra Harpole (PI)
Period of Performance: 09/01/14 to 08/31/15
Amount: $2M ($35,784 KBW)

Title: The Smart MATerial Design, Analysis and Processing consortium (SMATDAP): Building next-generation polymers and the tools to accelerate cost-effective commercial production
Sponsor: National Science Foundation
Investigator(s): PI: Drew Hamilton (KBW role: Co-PI and Project Admin)
Period of Performance: 09/01/2014-08/31/2017
Amount: $5,949,926 ($1,541,322 MS; $335,176 KBW)

Title: Modeling and Simulation of Complex Systems
Sponsor: National Science Foundation
Investigator(s): Sandra Harpole (PI)
Period of Performance: 09/01/15 to 08/31/16
Amount: $1M ($29,634 KBW)

PROPOSALS UNDER REVIEW

Title: Development of Fetuin Therapies for the Inhibition and Reversal of Vascular Calcification
Sponsor: National Institutes of Health
Investigator(s): Keisha B. Walters (PI) and LaShan Simpson (Co-PI)
Period of Performance: 08/01/15 to 07/31/18
Amount: $407,802 ($203,902 KBW)

Title: MRI: Acquisition of a Stereo Endoscopic Particle Image Velocimeter to Promote Inter-Disciplinary Research and Education
Sponsor: National Science Foundation
Investigator(s): Kalyan Srinivasan (PI); Co-PIs: Sundar Krishnan, Adrian Sescu, Keisha Walters, Keith Walters; Senior Investigators: Ratneshwar Jha, Jason Keith, Scott Thompson
Period of Performance: 10/01/2016 – 09/30/2019
Amount: $ 575,477

Title: REU Site: Micro-technology and Nanotechnology in Process and Product Engineering and Education
Sponsor: National Science Foundation
Investigator(s): Priscilla Hill (PI); Co-PI: Santanu Kundu; Senior Investigators: Mark Bricka, Bill Elmore, Todd French, Dong Meng, Neeraj Rai, Keisha B. Walters
Period of Performance: 02/01/2016 – 01/31/2019
Amount: $288,001