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Education:

The University of New South Wales (Australia), BSc (Hons I) Industrial Chemistry, 1993
The University of New South Wales (Australia), Ph.D. Chemical Engineering, 2000

Professional Experience:

2005 – Present: Assistant Professor, Department of Chemistry and Geochemistry, Colorado School of Mines
2003 – 2005: Assistant Professor, School of Polymers and High Performance Materials, University of Southern Mississippi
2001 – 2003: Postdoctoral Research Associate, Department of Polymer Science, University of Akron
1993 – 1996: Project Leader, Comalco Research and Technology, Melbourne, Australia

Peer Reviewed Publications (Papers and Book Chapters):

1. Konopacki, M.D.; Boyes, S.G. **Synthesis of Surface Initiated Diblock Copolymer Brushes from Flat Silicon Substrates Utilizing the RAFT Polymerization Technique** *Macromolecules* **2007**, *40*, 879 – 888.
2. Hotchkiss, J.W.; Lowe, A.B.; Boyes, S.G. **Surface Modification of Gold Nanorods with RAFT Synthesized Polymers** *Chem. Mater.* **2007**, *19*, 6-13.
3. Kopesky, E.T.; Treat, N.D.; Boyes, S.G.; Cohen, R.E.; McKinley, G.H. **Thermorheological Properties Near the Glass Transition of Oligomeric Poly(Methyl Methacrylate) Blended with Acrylic Polyhedral Oligomeric Silsesquioxane Nanocages** *Rheologica Acta* **2006**, *46*, 971 – 981.
4. Ayres, N.; Boyes, S.G.; Brittain, W.J. **Stimuli-Responsive Polyelectrolyte Polymer Brushes Prepared via Atom-Transfer Radical Polymerization** *Langmuir* **2007**, *23*, 182-189.
5. Akgun, B.; Baum, M.; Blickle, C. Boyes, S.G.; Granville, A.M.; Mirous, B.; Zhao, B.; Brittain, W.J. **Surface Rearrangement of Diblock Copolymer Brushes – Stimuli-Responsive Films** In *Surface-Initiated Polymerization II*; Jordan, R. Ed.; *Adv. Polym. Sci.* **198**; Springer Berlin/Heidelberg, **2006**, 125 – 147.
6. Treat, N.D.; Ayres, N.; Boyes, S.G.; Brittain, W.J. **A Facile Route to Poly(Acrylic Acid) Brushes using Atom Transfer Radical Polymerization** *Macromolecules* **2006**, *39*, 26-29.

7. Granville, A.M.; Boyes, S.G.; Akgun, B.; Constable, A. Brittain, W.J.; Foster, M.D. **Stimuli-Responsive Semi-Fluorinated Polymer Brushes** In *Responsive Polymer Materials: Design and Application*, Minko, S. Editor.; Blackwell Publishing, in publication **2005**.
8. Boyes, S.G.; Cyrus, C.; Akgun, B.; Caplan, A.; Mirous, B.; Brittain, W. J. **Synthesis and Application of Polyelectrolyte Brushes** In *Stimuli-Responsive Polymeric Films and Coatings*; Urban, M. Ed.; *ACS Symp. Series 912*; American Chemical Society: Washington, DC, **2005**, 55 – 67.
9. Granville, A.M.; Boyes, S.G.; Akgun, B.; Brittain, W.J.; Foster, M.D. **Thermo-Responsive Behavior of Semi-Fluorinated Brushes** *Macromolecules* **2005**, *38*, 3263 - 3270.
10. Boyes, S.G.; Granville, A.M.; Baum, M.; Akgun, B.; Mirous, B.K.; Brittain, W.J. **Recent Advances in the Synthesis and Rearrangement of Block Copolymer Brushes** In *Polymer Brushes*; Advincula, R.C., Brittain, W.J., Caster, K., R  he, J., Eds.; Wiley-Interscience: Hoboken, NJ, **2004**.
11. Granville, A.M.; Boyes, S.G.; Akgun, B.; Brittain, W.J.; Foster, M.D. **Synthesis and characterization of stimuli-responsive semi-fluorinated polymer brushes by atom transfer radical polymerization** *Macromolecules* **2004**, *37*, 2790-2796.
12. Boyes, S.G.; Granville, A.M.; Brittain, W.J. **Synthesis and Deposition of (11-(2-Bromo-2-methyl)propionyloxy)undecyltrichlorosilane** In *Macromolecular Syntheses Volume 13*; Mathais, L.J.; Acar, E., Eds.; **2004**.
13. Boyes, S.G.; Granville, A.M.; Baum, M.; Akgun, B.; Mirous, B.K.; Brittain, W. J. **Polymer Brushes – Surface Immobilized Polymers** *Surface Sci.* **2004**, *570*, 1-12.
14. Boyes, S.G.; Akgun, B.; Brittain, W.J.; Foster, M.D. **Synthesis, characterization and properties of polyelectrolyte block copolymer brushes prepared by atom transfer radical polymerization and their use in the synthesis of metal nanoparticles** *Macromolecules* **2003**, *36*, 9539-9548.
15. Boyes, S.G.; Brittain, W.J.; Weng, X.; Cheng, S.Z.D. **Synthesis, characterization and properties of ABA type triblock copolymer brushes of styrene and methyl acrylate by atom transfer radical polymerization** *Macromolecules* **2002**, *35*, 4960-4967.
16. Boyes, S.G.; Chaplin, R.P.; Davis, T. P.; Viatos, J.; Buxton, D.P. **Direct esterification of a hydroxyl functional polyester resin with p-hydroxybenzoic acid Part A: Investigation of the direct esterification reaction scheme and characterisation of products** *Prog. Org. Coat.* **2000**, *39*, 137-143.
17. Boyes, S.G.; Chaplin, R.P.; Davis, T. P.; Viatos, J.; Buxton, D.P. **Direct esterification of a hydroxyl functional polyester resin with p-hydroxybenzoic acid Part B: Coating preparation and evaluation** *Prog. Org. Coat.* **2000**, *39*, 145-150.

Conference Proceedings (Preprints):

1. Konopacki, M.D.; Boyes, S.G. **Polymer Modified Gold and Gadolinium Nanoparticles for Targeted Imaging and Treatment of Cancer** *Am. Chem. Soc. Div. Polym. Chem.* **2007**, *48(2)*, accepted.

2. Hotchkiss, J.W.; Rowe, M.D.; Stempka, J.E.; Pitts, B.W.; Treat, N.D.; Boyes, S.G. **Applications for Block Copolymer Brushes Prepared via Controlled/"Living" Free Radical Polymerization Techniques** *Am. Chem. Soc. Div. Polym. Chem.* **2005**, *46(2)*, accepted.
3. Pitts, B.W.; Rowe, M.D.; Boyes, S.G. **Surface Immobilization of RAFT Chain Transfer Agents** *Am. Chem. Soc. Div. Polym. Chem.* **2005**, *46(2)*, accepted.
4. Hotchkiss, J.W.; Treat, N.D.; Higgins, B.A.; Lowe, A.B.; Boyes, S.G. **Surface Modification of Gold Nanorods with PDMAEMA** *Am. Chem. Soc. Div. Polym. Chem.* **2005**, *46(2)*, accepted.
5. Rowe, M.D.; Pitts, B.W.; Lowe, A.B.; Boyes, S.G. **Synthesis of Diblock Copolymer Brushes via Surface Immobilized RAFT Chain Transfer Agents** *Am. Chem. Soc. Div. Polym. Chem.* **2005**, *46(2)*, accepted.
6. Treat, N.D.; Stempka, J.E.; Boyes, S.G. **Synthesis of Poly(Acrylic Acid) Brushes via Hydrolysis of Poly(tert-Butyl Acrylate) Brushes** *Am. Chem. Soc. Div. Polym. Chem.* **2005**, *46(2)*, accepted.
7. Stempka, J.E.; Boyes, S.G. **Synthesis of Nanoparticles within Tethered Diblock Copolymer Brush Systems** *Am. Chem. Soc. Div. Polym. Chem.* **2005**, *46(2)*, accepted.
8. Boyes, S.G.; Mirous, B.K.; Brittain, W.J. **Synthesis and characterization of polyelectrolyte brushes** *Am. Chem. Soc. Div. Polym. Chem.* **2004**, *45(2)*, 286-287.
9. Boyes, S.G.; Akgun, B.; Brittain, W.J.; Foster, M.D. **Synthesis and characterization of polyelectrolyte brushes and their use in the synthesis of metal nanoparticles** *Am. Chem. Soc., Div. Polym. Mater. Sci. Eng.* **2004**, *90*, 326-327.
10. Boyes, S.G.; Granville, A.M.; Mirous, B.K.; Akgun, B.; Brittain, W.J. **Adaptive films based on block copolymer brushes** *Am. Chem. Soc., Div. Polym. Mater. Sci. Eng.* **2004**, *90*, 217.
11. Boyes, S.G.; Granville, A.M.; Brittain, W.J. **Responsive thin films based on surface-immobilized block copolymer brushes** *Am. Chem. Soc., Div. Polym. Mater. Sci. Eng.* **2004**, *90*, 33.
12. Boyes, S.G.; Granville, A.M.; Mirous, B.K.; Akgun, B.; Brittain, W.J. **Recent advances in the synthesis and rearrangement of block copolymer brushes** *Am. Chem. Soc., Div. Polym. Chem.* **2003**, *44(1)*, 420-421.
13. Boyes, S.G.; Mirous, B.K.; Brittain, W.J. **Synthesis and characterization of polyelectrolyte brushes** *Am. Chem. Soc., Div. Polym. Chem.* **2003**, *44(1)*, 523-524.
14. Granville, A.M.; Boyes, S.G.; Brittain, W.J. **Characterization of stimuli-responsive semifluorinated polymer brushes** *Am. Chem. Soc., Div. Polym. Chem.* **2003**, *44(1)*, 506
15. Akgun, B.; Boyes, S.G.; Granville, A.M.; Brittain, W.J. **Effect of initiator deposition technique and spacer length on monolayer and polymer brush formation** *Am. Chem. Soc., Div. Polym. Chem.* **2003**, *44(1)*, 514-515.
16. Baum, M.; Boyes, S.G.; Granville, A.M.; Mirous, B.K.; Sedjo, R.; Brittain, W.J. **Synthesis and nanomorphology of multiblock polymer brushes** *Am. Chem. Soc., Div. Polym. Chem.* **2002**, *43(2)*, 72-73.

17. Granville, A.M.; Boyes, S.G.; Mirous, B.K.; Brittain, W.J. **Effect of initiator anchoring group on polymer brush formation** *Am. Chem. Soc., Div. Polym. Chem.* **2002**, *43(2)*, 271-272.
18. Boyes, S.G.; Granville, A.M.; Brittain, W.J. **Synthesis and characterization of semifluorinated polymer brushes** *Am. Chem. Soc., Div. Polym. Chem.* **2002**, *43(2)*, 273-274.
19. Boyes, S.G.; Granville, A.M.; Brittain, W.J. **Synthesis and characterization of multiblock polymer brushes** *International Conference on Polymer Synthesis: Warwick 2002*, Warwick, UK, July, **2002**.
20. Boyes, S.G.; Brittain, W.J. **Synthesis, characterization, and properties of ABA type triblock copolymer brushes of styrene and methyl acrylate** *Am. Chem. Soc., Div. Polym. Chem.* **2001**, *43(1)*, 549-550.

Funding:

- Dean's Research Grant, University of Southern Mississippi - \$10,000
- ACS PRF SE Symposium Grant - \$3,600
- Bausch & Lomb Young Investigator Grant - \$70,500

Awards:

- Best Poster Award at *International Conference on Polymer Synthesis: Warwick 2002*

Synergistic Activities:

- Invited speaker at the "International Conference on Polymer Synthesis" University of Warwick, August 2006
- Co-organizer of symposium titled "Advances in Polymer Brushes" at Washington DC National ACS Meeting, August 2005
- Faculty participant in the NSF Materials Research Science and Engineering Center
- Faculty participant in the NSF-funded IGERT program – entrepreneurship at the interface of polymer science and medicinal chemistry
- For 2 years, I served as a judge in the Northeast Ohio Regional Science Fair, Akron, OH
- Contributing member of the American Chemical Society (including both POLY and PMSE divisions), the International Union of Pure and Applied Chemistry, and the Royal Australian Chemical Institute

Collaborators & Other Affiliations:

Collaborators:

Dr. Douglas Thamm, School of Veterinary Science, Colorado State University
Dr Stephen Z.D. Cheng, Department of Polymer Science, University of Akron
Dr Robert E. Cohen, Department of Chemical Engineering, Massachusetts Institute of Technology
Dr Mark D. Foster, Department of Polymer Science, University of Akron

Dr Christopher McCurdy, School of Pharmacy, University of Mississippi
Dr Andrew B. Lowe, Department of Chemistry and Biochemistry, University of Southern Mississippi

Graduate and Postdoctoral Advisors:

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Dr. Tom P. Davis, School of Chemical Sciences and Engineering, University of New South Wales

Thesis Advisor and Postgraduate Scholar Sponsor:

Graduate Students: Jay Hotchkiss (CSM), Misty Rowe (CSM), Jonathan Stempka (USM)
Undergraduate Students: Whitney Svoboda (CSM), Brent Hammer (CSM), Daniel Mieritz (CSM), Brady Pitts (USM), Neil Treat (USM), James Whittemore (Texas SU), Patrick Heggarty (U Wisconsin)