

**CURRICULUM VITAE  
MELISSA ANN MOSS**

**PERSONAL**

Work Address: 3C15 Swearingen Engineering Center  
Department of Chemical Engineering  
University of South Carolina  
Columbia, SC 29208  
(803) 777-5604

Home Address: 624 Long Pointe Lane  
Columbia, SC 29229  
(803) 553-9833

Birthdate: May 20, 1973  
Birthplace: Parkersburg, WV  
Citizenship: USA

**EDUCATION**

2000 Ph.D., Chemical Engineering, University of Kentucky, Lexington, KY  
1995 B.S., Chemical Engineering, University of Kentucky, Lexington, KY

**EXPERIENCE**

2014 – Present Program Director, Biomedical Engineering Program, University of South Carolina, Columbia, SC  
2010 – Present Associate Professor, Department of Chemical Engineering, University of South Carolina, Columbia, SC  
2004 – 2010 Assistant Professor, Department of Chemical Engineering, University of South Carolina, Columbia, SC  
2002 – 2004 Senior Research Fellow, Dept. of Neuroscience, Laboratory of Biochemistry, Mayo Clinic College of Medicine, Jacksonville, FL  
2000 – 2002 Research Fellow, Dept. of Neuroscience, Laboratory of Biochemistry, Mayo Clinic College of Medicine, Jacksonville, FL  
1995 – 2000 Graduate Research Assistant, Dept. of Chemical Engineering, University of Kentucky  
1994-1995 Undergraduate Research Assistant, Dept. of Chemical Engineering, University of Kentucky  
Summer 1994 NSF-Research Experiences for Undergraduates (NSF-REU) Participant, Dept. of Chemical Engineering, University of Kentucky

**TEACHING EXPERIENCE**

ECHE 101 – Introduction to Chemical Engineering, Honors Section	Fall 04, 05, 06
BMEN 354 – Biotransport	Spring 13, 14
BMEN 390 – Thermodynamics and Kinetics in Biomolecular Systems	Fall 12, 13
BMEN 391 – Thermodynamics and Kinetics in Biomolecular Systems	Fall 14
<i>This was the first offering of a restructured core course for the biomedical engineering undergraduate program.</i>	
BMEN 392 – Fundamentals of Biochemical Engineering	Spring 05, 06, 08, 10, 12
<i>This course was a newly developed elective for both chemical and biomedical engineering</i>	
BMEN 798 – Graduate Seminar in Literature Search Skills	Spring 07, 09
<i>This course was a newly developed core course for the biomedical engineering graduate program</i>	
BMEN 720 – Biological Transport Phenomena	Fall 07, 08, 09, 10, 11, 12
<i>This course was a newly developed core course for the biomedical engineering graduate program</i>	
BMEN 201 – Professional Development & Ethics in Biomedical Eng. II	Spring 09, 10, 11
<i>This was the second offering of a newly developed core course for the biomedical engineering undergraduate program.</i>	
BMEN 101 – Professional Development & Ethics in Biomedical Eng. I	Fall 09

**STUDENTS SUPERVISED**

***Postdoctoral***

Francisco J. Gonzalez	Aug 2005 – Jul 2008	Currently employed at Selah Genomics
J. Will Reed	Mar 2012 – Aug 2013	Currently employed at MERC

***Doctoral***

Joseph A. Kotarek	May 2005 – Aug 2010	NRC Postdoctoral Fellow at NIST; Currently at FDA
Deborah D. Soto-Ortega	Aug 2006 – Dec 2010	Currently a Purification Specialist at Amgen
Chen Suo	Aug 2006 – Jul 2011	Currently employed at China Resources
J. Will Reed	Aug 2008 – Dec 2012	Currently employed at MERC
Kelly A. Wilson	May 2009 – May 2013	Currently employed as a postdoctoral fellow at Baylor School of Medicine in association with an NIH training grant
Jui-Heng Tseng	Aug 2009 – May 2014	Currently employed as a postdoctoral fellow at University of North Carolina Medical Center
Kayla Pate	Aug 2011 – Present	
Shelby Chastain	Aug 2012 – Present	
Yiying Wang	Aug 2012 – Present	
Lauren Wolf	May 2013 – Present	
Steven ‘Zeb’ Vance	July 2013 – Present	
Nicholas Van der Munnik	Aug 2013 – Present	

***Masters***

Adriana A. Reyes Barcelo	Aug 2005 – Aug 2008	Currently employed at Kraft Foods
Bradley White	Aug 2012 – Present	

***Undergraduate***

Charlotte Cooper	Jan 2005 – Aug 2005	
Christopher Butch	Jan 2005 – May 2007 (Magellan Scholar, Honors College Fellow)	
Sarah Holton	Jan 2005 – May 2007 (Honors College Fellow)	
Nouran Ragaban	Summer 2005 (Palmetto Health Summer Intern)	
Corelis Zayas-Ortiz	Summer 2005, 2006 (NSF-REU Participant)	
Christopher Stewart	May 2005 – May 2006 (Senior Honors Thesis)	
Timothy Davis	Aug 2005 – Jul 2008 (Palmetto Health Summer Intern, Magellan Scholar, Senior Honors Thesis)	
Adella Dunagan	Aug 2005 – May 2007 (Honors College Fellow)	
Kathryn Johnson	Aug 2005 – May 2007 (Goldwater Scholar, Magellan Scholar, Senior Honors Thesis, NSF GFRP Recipient)	
Gopal Chakrabarti	Jan 2006 – May 2007 (Senior Honors Thesis)	
Elizabeth Schongar	Summer 2006 (NSF-REU Participant)	
Christie Long	Aug 2006 – Dec 2007 (Honors College Fellow)	
Fahmin Basher	Aug 2006 – May 2008 (Goldwater Scholar, Honors College Fellow, Magellan Scholar, Senior Honors Thesis)	
Meagan Stewart	Summer 2007 (NSF-REU Participant)	
Brandon Murphy	May 2007 – May 2010 (Palmetto Health Summer Intern, Magellan Scholar, Degree with Distinction)	
Brandon Jamison	Summer 2008 (NSF-REU Participant)	
Stephanie Paolini	May 2008 – May 2009 (Senior Honors Thesis)	
Emily Matherly	May 2008 – May 2011 (Palmetto Health Summer Intern, Magellan Scholar, Honors College Fellow, Goldwater Honorable Mention, NSF GFRP Recipient)	
Sukhivinder Guram	Jan 2009 – Aug 2010 (Magellan Scholar)	

Apoorva Srivastava	May 2009 – May 2011 (Honors College Fellow, Magellan Scholar)
Andreea Stoichita	Jul 2009 – Dec 2009 (INBRE-REU Participant)
Jane Lim	Jan 2010 – May 2012 (Magellan Scholar)
Steve Marcous	Jan 2010 – May 2011 (Magellan Scholar)
Darien Davda	Jan 2010 – May 2012 (Magellan Scholar, Senior Honors Thesis)
Kaliah Jackson	Summer 2010 (NSF-REU Participant)
Shelby Chastain	Summer 2010 (NSF-REU Participant); Aug 2011 – May 2012
Anthony Egal	Jan 2011 – May 2011
Brittani Bungart	Summer 2011 (NSF-REU Participant)
Josiah Roupe	Summer 2011 – Fall 2011
Jas Guram	Summer 2011 – Present (Magellan Scholar)
McCall Rogers	Aug 2011 – May 2013 (Magellan Scholar)
Brooke Carroll	Aug 2011 – May 2013
John Clegg	Jan 2012 – May 2014 (Magellan Scholar, Goldwater Scholar Honorable Mention, NSF GFRP Recipient)
Michelle Faucett	Jan 2012 – May 2013
Lauren Wolf	Jan 2012 – May 2013
Steven ‘Zeb’ Vance	Summer 2012 (NSF-REU Participant)
Elizabeth Moore	April 2013 – Present (Magellan Scholar)
Jacob White	April 2013 – May 2014
Supriya Juneja	July 2013 – Dec 2013
Michael Hendley	August 2013 – May 2014
Elizabeth Crummy	August 2013 – Present
Allison Tipton	April 2014 – Present
Colman Moore	May 2014 – Present
Sean Thomas	May 2014 – Present
Ryan Geiser	August 2014 – Present
Lindsay Rucker	August 2014 – Present

*Magellan Scholars prepared an independent research proposal that was competitively evaluated for funding by a panel of faculty.*

*Honors College Fellows prepared a short research description and were selected to receive support by the Honors College.*

### **High School**

Brana Kalapathy	Fall 2008
Rachael McFarland	Summer 2009
Mason Thornley	Fall 2009 – Spring 2011
	<i>South Carolina State Science Fair 3<sup>rd</sup> place; presented at Stevens Institute of Technology Science Symposium</i>
Jas Guram	Summer 2010
Mia Ghoshroy	Summer 2011 – Spring 2012
Kristin Hardy	Summer 2012

### **ACADEMIC AND PROFESSIONAL HONORS**

2013	Biedenbach Service Award, College of Engineering and Computing, University of South Carolina
2012	Governor’s Young Scientist Award for Excellence in Scientific Research, South Carolina Academy of Science
2011	Distinguished Undergraduate Research Mentor Award, University of South Carolina
2010	Rising Star Award, University of South Carolina
2007 - 2012	Faculty Early Career Development (CAREER) Award, NSF
2007	Excellence in Teaching Award, University of South Carolina Mortar Board Society
2007	New Investigator Research Grant Award, Alzheimer’s Association
2005	Beginning Grant-In-Aid, American Heart Association
2002 - 2004	Postdoctoral Fellowship, American Heart Association Florida/Puerto Rico Affiliate
Fall 1999	Graduate School Academic Year Fellowship, University of Kentucky

1998 - 1999	Dissertation Year Fellowship, University of Kentucky
1998	Commonwealth Travel Award, University of Kentucky
1995 - 1998	Graduate Research Fellowship Program (GRFP) Award, NSF
1994	Scholarship Award, Lexington Rotary Club
1994	Outstanding Chemical Engineering Junior, University of Kentucky
1994	Scholastic Achievement Award, Student chapter of the American Institute of Chemical Engineers, University of Kentucky
1994	Omega Chi Epsilon Chemical Engineering Honors Society
1993	Tau Beta Pi Engineering Honors Society
1993	Golden Key National Honors Society
1993	Lambda Sigma Sophomore Honorary
1992	Alpha Lambda Delta Freshman Honorary
1991 - 1995	Henry M. Lutes Engineering Scholarship, University of Kentucky
1991 - 1995	Chancellor Scholarship, University of Kentucky

### **PROFESSIONAL SOCIETIES**

The Adhesion Society  
 American Chemistry Society (ACS)  
 American Institute of Chemical Engineers (AIChE)  
 Biomedical Engineering Society (BMES)  
 Institute of Biological Engineering (IBE)  
 Society for Biological Engineers (SBE)  
 Society of Women Engineers (SWE)

### **PROFESSIONAL ACTIVITIES**

2014 - 2015	Program Organizing Chair, <i>IBE Annual Meeting</i> , Lexington, KY
2014 - 2015	National Selection Committee, Barry M. Goldwater Scholarship
2014	Session Chair, Fundamentals of Protein Folding in Diseases, <i>AIChE Annual Meeting</i> , Atlanta, GA
2014	Session Chair, Emerging Technologies for Biomedical and Disease Applications, <i>ACS Annual Meeting</i> , Dallas, TX
2013 - 2014	Program Organizing Co-Chair, <i>IBE Annual Meeting</i> , Lexington, KY
2013	Session Chair, Bioimaging and Diagnostics, <i>AIChE Annual Meeting</i> , San Francisco, CA
2013	Session Chair, Intermolecular Interactions, <i>AIChE Annual Meeting</i> , San Francisco, CA
2013	Session Chair, Poster Session, <i>IBE Annual Meeting</i> , Raleigh, NC
2012	Session Chair, Biomolecular Engineering, <i>AIChE Annual Meeting</i> , Pittsburgh, PA
2012	Program Organizing Committee, <i>IBE Annual Meeting</i> , Indianapolis, IN
2012	Session Chair, Poster Session, <i>IBE Annual Meeting</i> , Indianapolis, IN
2011	Session Chair, Bioimaging and Diagnostics, <i>AIChE Annual Meeting</i> , Minneapolis, MN
2011	Session Chair, Biomolecular Engineering, <i>AIChE Annual Meeting</i> , Minneapolis, MN
2011	Session Chair, Biology-Inspired Tissue and Cellular Engineering, <i>IBE Annual Meeting</i> , Atlanta, GA
2010	Session Chair, NanoDiagnostics, <i>AIChE Annual Meeting</i> , Salt Lake City, UT
2010	Session Chair, Bioimaging and Diagnostics, <i>AIChE Annual Meeting</i> , Salt Lake City, UT
2010	Session Chair, Cell Adhesion and Migration, <i>AIChE Annual Meeting</i> , Salt Lake City, UT
2010	Session Chair, Biology-Inspired Tissue and Cellular Engineering, <i>IBE Annual Meeting</i> , Cambridge, MA.
2009	Session Chair, Intracellular Processes, <i>AIChE Annual Meeting</i> , Nashville, TN
2009	Session Chair, Bioengineering Minisymposium, <i>Annual Meeting of the South Carolina Academy of Science</i> , Columbia, SC
2009	Session Chair, Biology-Inspired Tissue and Cellular Engineering, <i>IBE Annual Meeting</i> , Santa Clara, CA.
2008	Session Chair, Receptor-Mediated Phenomena, <i>AIChE Annual Meeting</i> , Philadelphia, PA

2008	Session Chair, Biology-Inspired Tissue and Cellular Engineering, <i>IBE Annual Meeting</i> , Chapel Hill, NC.
2007	Session Chair, Intracellular Processes, <i>AIChE Annual Meeting</i> , Salt Lake City, UT
2007	Session Chair, Neuroscience and Ophthalmology Applications, <i>South Carolina Bioengineering Summit</i> , Charleston, SC
2006	Session Chair, Disease Therapies and Diagnostics, <i>AIChE Annual Meeting</i> , San Francisco, CA
2005	Session Chair, Bioadhesion, <i>Annual Meeting of the Adhesion Society</i> , Mobile, AL
2000	Session Co-Chair, Adhesion and Motility of Metastatic Cells, <i>Experimental Biology</i> , San Diego, CA

### **GRANT REVIEW PANELS**

2014	Oak Ridge Associated Universities, Pennsylvania Department of Health final performance reviews
2014	Congressional Barry M. Goldwater Scholarship National Review Panel
2008-2013	Alzheimer's Association
2008-2010, 2012	American Heart Association, Bioengineering Panel
2013	US Army Research Office, Life Sciences Division, Biochemistry Program
2013-2014	USC SOM, Research Development Fund
2012	Medical Research Council (United Kingdom)
2012	Missouri Spinal Cord Injuries Research Program
2012	University of South Carolina, ASPIRE I, Tracks 3/4
2011	NSF, Protein Aggregation, Folding, Expression, and Design
2011	NIH, Program Project (P01) Review Panel
2011	South Carolina Translational Research (SCTR) Pilot Project Review
2010	NSF, Research Experience for Undergraduates (REU)
2010	NSF, Biosensors
2010	NSF, Biomedical Engineering
2010	Alzheimer's Society (United Kingdom)
2010	Jeffers Memorial Trust
2007	NSF, Faculty Early Career Development (CAREER) Panel
2007	NSF, Nanoscience Exploratory Research (NER) Panel
2006	NSF, Integrated Graduate Research and Education (IGERT) Preliminary Proposal Panel
2006	Oak Ridge Associated Universities, Ralph E. Powe Junior Faculty Enhancement Award
Jun 2005, 2006	NIH, Cell Death and Injury in Chronic Neurodegeneration Study Section
2004	Suncoast Cardiovascular Research and Education Foundation

### **JOURNAL MANUSCRIPT REVIEWS**

ACS Chemical Neuroscience  
 ACS Neuroscience  
 AIChE Journal  
 BBA - Proteins and Proteomics  
 Biomacromolecules  
 Biopolymers  
 Brain Research  
 Crystal Research and Technology  
 Integrative Biology  
 Journal of Adhesion Science and Technology  
 Journal of Neurochemistry  
 Journal of Biological Engineering  
 Journal of Theoretical Biology  
 Neurobiology of Aging  
 Neuroscience Letters  
 Physical Review Letters  
 PlosOne

## UNIVERSITY ACTIVITIES

2014 – Present	Director, Biomedical Engineering Program
2014 – Present	Honor's College Faculty
2014	Reviewer, Carolina and McNair Scholars Applications
2013 – Present	Chair, Search Committee for COBRE/Biomedical Engineering Junior Faculty
2013 – 2014	Member, Search Committee, Department of Cell Biology and Anatomy Chair
2013	Chair, Search Committee, Biomedical Engineering Laboratory Manager
2013	Member, Search Committee, BME Administrative Coordinator
2013	Mentorship Panel, Provost Advisory Committee on Women's Issues
2012 – Present	Advisory Board, NSF ADVANCE Project
2012 – 2013	Editorial Board, <i>Caravel</i> , University of South Carolina Undergraduate Research Journal
2012	Member, Search Committee, College of Engineering and Computing Association Dean
2011 – 2013	Member, Search Committee, SmartState Endowed Chair in Tissue Engineering
2011 – Present	Faculty Advisor, Alzheimer's Foundation of America on Campus
2011	Judge, Graduate Student Day
2011	Judge, Morgan Newton Symposium
2011, 2012, 2013	Speaker, South Carolina STEPs to STEM Program
2010 – Present	Member, University of South Carolina Goldwater Scholarship Committee
2010 – Present	Member, Graduate Committee, Biomedical Engineering, University of South Carolina
2010 – 2011	Member, Search Committee for Dean of the South Carolina Honors College
2010 – 2011	Member, Search Committee for Biomedical Engineering
2010	Member, Search Committee for Chair of Chemical Engineering
2010	Panelist, Tenure and Promotion Panel, New Faculty Orientation
2010	Video interview, e-TV educational series
2009 – Present	Member, Steering Committee, Women's Faculty Organization, University of South Carolina
2009 – Present	Member, Honors College Policy Council, University of South Carolina
2009, 2010	Panelist, Carolina and McNair Scholars Interviews, University of South Carolina
2008 – 2014	Member, Curriculum Assessment Committee, College of Engineering and Computing
2007, 2014	Mock Class, Carolina and McNair Scholars Visitation Day, University of South Carolina
2007 – 2014	Chair, Undergraduate Committee, Biomedical Engineering, University of South Carolina
2007	Panelist, NSF CAREER Workshop
2006 – Present	Member, Advisory Board, Office of Undergraduate Research, University of South Carolina
2006 – Present	Member, Undergraduate Committee, Biomedical Engineering, University of South Carolina
2006 – Present	Mentor, 1 <sup>st</sup> Year Scholars Program, University of South Carolina
2006 – 2010	Classroom Presentation, Carolina Master Scholars Program, Bionanotechnology
2006 – 2007	College of Engineering and Computing Representative, Family Fund Advisory Board, University of South Carolina
2006	Judge, Discovery Day, University of South Carolina
2005 – 2011	Member, Committee for Undergraduate Student Recruitment, Chemical Engineering, University of South Carolina
2005 – 2007	Seminar Coordinator, Chemical Engineering, University of South Carolina
2005, 2006, 2007	Judge, South Carolina State Science and Engineering Fair
2005, 2006	Mock Class, Scholars Day, University of South Carolina
2005	Judge, Student Poster Competition, Aging Research Day, Medical University of South Carolina/University of South Carolina-Palmetto Health
2004 – 2010	Mentor, Women's Connections Mentoring Network, Women's Student Services, University of South Carolina
2004 – 2007	Member, Graduate Committee, Chemical Engineering, University of South Carolina
1998 – 1999	Graduate Student Representative, Advisory Committee for the President's Initiative on Undergraduate Education, University of Kentucky
1997	Graduate Student Representative, Advisory Committee for the Selection of the Dean of the Graduate School, University of Kentucky

## PUBLICATIONS

### *Refereed Journal Articles*

1. A. Kumar, K. Pate, **M. Moss**, D. Dean, and V. Rangachari (2014) Self-propagative replication of A $\beta$  oligomers suggests potential transmissibility in Alzheimer's disease. *PLOS ONE*, In press.
2. N. E. Pryor, **M. A. Moss**, and C. E. Hestekin (2014) Capillary electrophoresis for the analysis of the effect of sample preparation on early stages of A $\beta_{1-40}$  aggregation. *Electrophoresis*, In eprint: DOI: 10.1002/elps.201400012n.
3. J. P. Turner, T. Lutz-Rechtin, K. A. Moore, L. Rogers, O. Bhawe, **M. A. Moss**, and S. L. Servoss (2014) Rationally designed peptoids prevent aggregation of amyloid-beta 40. *ACS Chemical Neuroscience*, In eprint: DOI: 10.1021/cn400221u.
4. N. E. Prior, **M. A. Moss**, and C. N. Hestekin (2012) Unraveling the early events of amyloid- $\beta$  protein (A $\beta$ ) aggregation: Techniques for the determination of A $\beta$  aggregation size. *International Journal of Molecular Sciences*, 13: 3038-3072.
5. N. E. Pryor, J. A. Kotarek, **M. A. Moss**, and C. N. Hestekin (2011) Monitoring insulin aggregation via capillary electrophoresis. *International Journal of Molecular Sciences*, 12: 9369-9388.
6. D. D. Soto-Ortega, B. P. Murphy, F. J. Gonzalez-Velasquez, K. A. Wilson, F. Xie, Q. Wang, and **M. A. Moss** (2011) Inhibition of amyloid- $\beta$  aggregation by coumarin analogs can be manipulated by functionalization of the aromatic center. *Bioorganic and Medicinal Chemistry*, 19: 2596-2602.
7. F. J. Gonzalez-Velasquez, J. W. Reed, J. W. Fuseler, E. E. Matherly, J. A. Kotarek, D. D. Soto-Ortega, and **M. A. Moss** (2010) Activation of brain endothelium by soluble aggregates of the amyloid- $\beta$  protein involves nuclear factor- $\kappa$ B. *Current Alzheimer's Research*, 8: 91-94.
8. W. Zhang, K. Gilstrap, L. Wu, K. C. Remant Bahadur, **M. A. Moss**, Q. Wang, X. Lu, and X. He (2010) Synthesis and Characterization of thermally responsive pluronic F127-chitosan nanocapsules for controlled release and intracellular delivery of small molecules. *ACS Nanoscience*, 4: 6747-6759.
9. F. J. Gonzalez-Velasquez, J. W. Reed, J. W. Fuseler, E. E. Matherly, J. A. Kotarek, D. D. Soto-Ortega, and **M. A. Moss** (2010) Soluble amyloid- $\beta$  protein aggregates induce nuclear factor- $\kappa$ B mediated upregulation of adhesion molecule expression to stimulate brain endothelium for monocyte adhesion. *Journal of Adhesion Science and Technology*, Invited Contribution for special issue on Adhesion and Interfacial Aspects of Cell Adhesion, 24: 2105-2129.
10. J. A. Kotarek and M. A. Moss (2010) Impact of phospholipid bilayer saturation on amyloid- $\beta$  aggregation intermediate growth: A quartz crystal microbalance analysis. *Analytical Biochemistry*, 399: 30-38.
11. T. J. Davis, D. D. Soto-Ortega, J. A. Kotarek, F. J. Gonzalez-Velasquez, K. Sivakumar, L. Wu, Q. Wang, and **M. A. Moss** (2009) Comparative study of inhibition at multiple stages of amyloid- $\beta$  self-assembly provides mechanistic insight. *Molecular Pharmacology*, 76: 405-413.
12. A. A. Reyes Barcelo, F. J. Gonzalez-Velasquez, and **M. A. Moss** (2009) Soluble aggregates of the amyloid- $\beta$  protein are trapped by serum albumin to enhance amyloid- $\beta$  activation of endothelial cells. *Journal of Biological Engineering* 3:5.
13. F. J. Gonzalez-Velasquez, J. A. Kotarek, and **M. A. Moss** (2008) Soluble aggregates of the amyloid- $\beta$  protein selectively stimulate permeability in human brain microvascular endothelial monolayers. *Journal of Neurochemistry* 107: 466-477.
14. J. A. Kotarek, K. C. Johnson, and **M. A. Moss** (2008) Quartz crystal microbalance analysis of growth kinetics for aggregation intermediates of the amyloid- $\beta$  protein. *Analytical Biochemistry* 378: 15-24.
15. F. J. Gonzalez-Velasquez and **M. A. Moss** (2008) Soluble aggregates of the amyloid- $\beta$  protein activate endothelial monolayers for adhesion and subsequent transmigration of monocyte cells. *Journal of Neurochemistry* 104: 500-513.
16. M. R. Nichols, **M. A. Moss**, D. K. Reed, J. H. Hoh, and T. L. Rosenberry (2005) Amyloid- $\beta$  aggregates formed at nonpolar interfaces differ from amyloid- $\beta$  protofibrils produced in aqueous buffers. *Microscopy Research and Technique* 67: 164-174.
17. M. R. Nichols, **M. A. Moss**, D. K. Reed, S. Cratic-McDaniel, J. H. Hoh, and T. L. Rosenberry (2005) Amyloid- $\beta$  protofibrils differ from amyloid- $\beta$  aggregates induced in dilute hexafluoroisopropanol in stability and morphology. *Journal of Biological Chemistry* 280: 2471-2480.
18. M. R. Nichols, **M. A. Moss**, D. K. Reed, J. H. Hoh, and T. L. Rosenberry (2005) Rapid assembly of amyloid- $\beta$  peptide into unstable  $\beta$ -sheet fibers at a liquid/liquid interface. *Biochemistry* 44:165-173.

19. **M. A. Moss**, M. R. Nichols, D. K. Reed, N. Varvel, and T. L. Rosenberry (2004) Nordihydroguaiaretic acid does not disaggregate  $\beta$ -amyloid(1-40) protofibrils but does inhibit growth arising from direct protofibril association. *Molecular Pharmacology* **66**: 592-600.
20. **M. A. Moss**, M. R. Nichols, D. K. Reed, J. H. Hoh, and T. L. Rosenberry (2003) The peptide KLVFF-K<sub>6</sub> promotes  $\beta$ -amyloid(1-40) protofibril growth by association but does not alter protofibril effects on cellular reduction of 3-(4,5-dimethylthiazol-2-yl)-2,5-diphenyltetrazolium bromide (MTT). *Molecular Pharmacology* **64**: 1160-1168.
21. M. R. Nichols, **M. A. Moss**, D. K. Reed, W.-L. Lin, R. Mukhopadhyay, J. H. Hoh, and T. L. Rosenberry (2002) Growth of  $\beta$ -amyloid(1-40) protofibrils by monomer elongation and lateral association. Characterization of distinct products by light scattering. *Biochemistry* **41**: 6115-6127.
22. J. Chaky, K. Anderson, **M. Moss**, L. Vaillancourt (2001) Surface hydrophobicity and surface rigidity are inducing signals for spore germination in *Colletotrichum graminicola*. *Phytopathology* **91**: 558-564.
23. **M. A. Moss** and K. W. Anderson (2000) Adhesion of cancer cells to endothelial monolayers: A study of initial attachment versus firm adhesion. *The Journal of Adhesion* **74**: 19-40.
24. **M. A. Moss**, S. Zimmer, and K. W. Anderson (2000) Role of metastatic potential in the adhesion of human breast cancer cells to endothelial monolayers. *Anticancer Research* **20**: 1425-1434.
25. **M. S. Moss**, B. Siskin, S. Zimmer, and K. W. Anderson (1999) Adhesion of nonmetastatic and highly metastatic breast cancer cells to endothelial cells exposed to shear stress. *Biorheology* **36**: 359-371.
26. J. A. Hestekin, M. Sarkari, **M. A. Summers**, K. S. Ziemer, L. P. Zuba (1998) Conducting a graduate student symposium: Goals, guidelines, and experiences. *Chemical Engineering Education* **Fall 1998**: 266-268.
27. D. Bhattacharyya, S. Ganapathi, S. Vishwanath, **M. Summers**, and D. A. Butterfield (1994) Immobilized enzyme reactions on beads and membranes. In *Biofunctional Membranes*, 117-129.

#### **Patents**

1. S. Servoss and **M. A. Moss**. Peptoids and methods for treating Alzheimer's disease. US 8,809,275. Washington, DC: US. Issued August 19, 2014.

#### **Conference Proceedings/Abstracts (presenter is underlined)**

1. J. P. Turner, T. Lutz-Rechtin, K. Moore, **M. Moss**, and S. Servoss (2014) Peptoids that minimize the peptide KLVFF prevent aggregation of A $\beta$ 1-40. *Annual Meeting of the American Chemistry Society, Dallas, TX, Mar 16-20*, BIOT 0370.
2. J. W. Reed, K. Pate, J. Clegg, M. Rogers, and **M. A. Moss** (2014) Hydroxylated flavones reduce Alzheimer's disease amyloid- $\beta$  oligomerization and physiological activity. *Annual Meeting of the American Chemistry Society, Dallas, TX, Mar 16-20*, BIOT 0168.
3. K. Moore, L. M. Wolf, J. P. Turner, S. Servoss, and **M. Moss** (2014) The effect of peptoids on A $\beta$  aggregation and NF- $\kappa$ B activation in Alzheimer's disease. *Annual Meeting of Institute of Biological Engineers, Lexington, KY, Mar 6-8*.
4. L. M. Wolf, K. Moore, J. P. Turner, S. Servoss, and **M. Moss** (2013) The effect of peptoids on A $\beta$  aggregation and NF- $\kappa$ B activation in Alzheimer's disease. *AICHe Annual Meeting, San Francisco, CA, Nov 3-8*: 544b.
5. K. M. Pate, M. Rogers, J. Clegg, and **M. A. Moss** (2013) Ability of polyphenols to attenuate Alzheimer's disease by reducing nuclear factor- $\kappa$ B activation. *AICHe Annual Meeting, San Francisco, CA, Nov 3-8*: 683d.
6. J.-H. Tseng, Y. Wang, and **M. Moss** (2013) Anthracyanidins modulate amyloid- $\beta$  aggregation and attenuate reactive oxygen species associated with Alzheimer's disease pathogenesis. *AICHe Annual Meeting, San Francisco, CA, Nov 3-8*: 544e.
7. H. M. Kayello, D. P. Visco, J.-H. Tseng, D. Soto-Ortega, C. Suo, J. Gao, S. Chastain, B. P. Murphy, M. Lim, F. Xie, J. Chapman, Q. Wang, and **M. Moss** (2013) A novel computer-aided molecular approach using the signature molecular descriptor to design non-intuitive amyloid- $\beta$  aggregation inhibitors. *AICHe Annual Meeting, San Francisco, CA, Nov 3-8*: 6b.



8. C. N. Hestekin, E. Pryor, and **M. Moss** (2013) Microchannel electrophoresis analysis of amyloid protein aggregation. *Annual Meeting of the American Electrophoresis Society, San Francisco, CA, Nov 3-8*: 34c.
9. K. Moore, L. M. Wolf, and **M. Moss** (2013) The effect of peptoids on A $\beta$  aggregation and NF- $\kappa$ B activation in Alzheimer's disease. *BMES Annual Meeting, Seattle, WA, Sep 25-28*, P-Fri-A-253.
10. K. M. Pate, M. Rogers, J. Clegg, and **M. A. Moss** (2013) Ability of polyphenols to attenuate Alzheimer's disease by reducing nuclear factor- $\kappa$ B activation. *BMES Annual Meeting, Seattle, WA, Sep 25-28*: OP-Sat-I-16.
11. J.-H. Tseng, J. Chapman, and **M. Moss** (2013) Selective dihydropyridines inhibit amyloid- $\beta$  aggregation and alter the morphology of amyloid- $\beta$  aggregates associated with Alzheimer's disease. *BMES Annual Meeting, Seattle, WA, Sep 25-28*: OP-Sat-I-18.
12. S. E. Chastain, K. Pate, and **M. Moss** (2013) Conformation-dependent inhibitory binding of green tea catechins to amyloid- $\beta$  in Alzheimer's disease. *BMES Annual Meeting, Seattle, WA, Sep 25-28*: P-Sat-A-68.
13. J. W. Reed, K. Pate, J. Clegg, M. Rogers, and M. A. Moss (2013) Hydroxylated flavones reduce amyloid- $\beta$  oligomerization and physiological activity, *Annual Meeting of Institute of Biological Engineers, Raleigh, NC, Mar 7-9*.
14. J.-H. Tseng, J. Chapman, and **M. A. Moss** (2012) Dihydropyridines inhibit amyloid- $\beta$  aggregation and alter the morphology of amyloid- $\beta$  fibrils associated with Alzheimer's disease, *AICHE Annual Meeting, Pittsburgh, PA, Oct 28-Nov 2*: 518d.
15. J. W. Reed, K. Pate, J. Clegg, M. Rogers, and **M. A. Moss** (2012) Hydroxylated flavones reduce amyloid- $\beta$  induced calcium influx, *AICHE Annual Meeting, Pittsburgh, PA, Oct 28-Nov 2*: 760e.
16. K. A. Moore, D. Soto-Ortega, M. Lim, K. Pate, K. Jackson, S. Lohse, R. Mahtab, C. Murphy and **M.A Moss** (2012) Inhibition of Alzheimer's-associated A $\beta$  aggregation by gold nanoparticles, *AICHE Annual Meeting, Pittsburgh, PA, Oct 28-Nov 2*: 214d.
17. E. Pryor, C. N. Hestekin and **M. Moss** (2012) The use of microchannel electrophoresis to detect early stages of amyloid-beta aggregation, *AICHE Annual Meeting, Pittsburgh, PA, Oct 28-Nov 2*: 185g.
18. D. P. Visco, J.-T. Tseng, D. Soto-Ortega, C. Suo, J. Gao, S. Chastain, B. P. Murphy, M. Lim, F. Xie, J. Chapman, Q. Wang, and **M. Moss** (2012) An innovative computer-aided molecular design approach to the rational design of novel small molecule inhibitors of amyloid- $\beta$  aggregation, *AICHE Annual Meeting, Pittsburgh, PA, Oct 28-Nov 2*: 601i.
19. J.-T. Tseng, J. Chapman, and **M. A. Moss** (2012) Naphthalamide analogs inhibit amyloid- $\beta$  aggregation and acetylcholinesterase activity associated with Alzheimer's disease, *BMES Annual Meeting, Atlanta, GA, Oct 24-27*: P-Sat-A-264.
20. J. W. Reed, K. Pate, J. Clegg, M. Rogers, and **M. A. Moss** (2012) Hydroxylated flavones alter amyloid- $\beta$  oligomer formation, *BMES Annual Meeting, Atlanta, GA, Oct 24-27*: P-Th-B-236.
21. K. A. Moore, D. Soto-Ortega, M. Lim, K. Pate, K. Jackson, S. Lohse, R. Mahtab, C. Murphy and **M.A Moss** (2012) Inhibition of Alzheimer's-associated A $\beta$  aggregation by gold nanoparticles, *BMES Annual Meeting, Atlanta, GA, Oct 24-27*: P-Th-A-49.
22. S. Chastain and **M. Moss** (2012) Mechanistic inhibition of amyloid-beta aggregation in Alzheimer's disease by green tea catechin, *BMES Annual Meeting, Atlanta, GA, Oct 24-27*: P-Sat-A-91.
23. B. L. Bungart, J. C.-M. Lee, and **M. Moss** (2012) Hydroxyl-dependent effects of isoflavones on amyloid- $\beta$  aggregation, *BMES Annual Meeting, Atlanta, GA, Oct 24-27*: P-Sat-A-276.
24. J. R. Clegg, K. M. Pate, S. Z. Vance, J. W. Reed, and **M. A. Moss** (2012) Phenolic acids alter amyloid- $\beta$  oligomerization and consequent cellular responses, *BMES Annual Meeting, Atlanta, GA, Oct 24-27*: P-Sat-A-296.
25. F. J. Gonzalez-Valesquez, J. W. Reed, J. W. Fuseler, J. A. Kotarek, D. D. Soto-Ortega, and M. A. Moss (2012) Activation of endothelium in Alzheimer's brain involves soluble aggregates of the amyloid- $\beta$  protein. *27<sup>th</sup> International Conference of Alzheimer's Disease International, London, UK, Mar 7-10*: OC007.

26. K. A. Wilson, D. D. Soto-Ortega, M. Lim, K. S. Jackson, R. Mahtab, C. Murphy, and **M. A. Moss** (2012) Gold nanospheres inhibit Alzheimer's disease associated amyloid- $\beta$  protein aggregation. *Annual Meeting of Institute of Biological Engineers, Indianapolis, IN, Mar 3-5*.
27. K. A. Wilson, M. Lim, K. Jackson, R. Mahtab, and **M. A. Moss** (2011) Mechanistic inhibition of Alzheimer's associated A $\beta$  aggregation by gold nanoparticles. *AIChE Annual Meeting, Minneapolis, MN, Oct 16-21*: 157f.
28. J.-T. Tseng, C. Suo, D. Davda, J. Gao, A. Terry, J. Chapman, and **M. A. Moss** (2011) Acetylcholinesterase inhibitors can interfere in amyloid- $\beta$  self-assembly: Potential for multi-target drugs for Alzheimer's disease. *AIChE Annual Meeting, Minneapolis, MN, Oct 16-21*: 216e.
29. E. Pryor, **M. A. Moss**, and C. N. Hestekin (2011) The use of microchannel electrophoresis to understand amyloid aggregation. *AIChE Annual Meeting, Minneapolis, MN, Oct 16-21*: 424a.
30. J. W. Reed and **M. A. Moss** (2011) Soluble amyloid- $\beta$  aggregates modify expression of claudin-3 in a model of the blood-brain barrier. *AIChE Annual Meeting, Minneapolis, MN, Oct 16-21*: 565e.
31. K. A. Wilson, M. Lim, K. Jackson, R. Mahtab, and **M. A. Moss** (2011) Mechanistic inhibition of Alzheimer's associated A $\beta$  aggregation by gold nanoparticles. *BMES Annual Meeting, Hartford, CT, Oct 13-16*.
32. J. A. Kotarek and **M. A. Moss** (2011) Analysis and inhibition of amyloid- $\beta$  protein aggregation at a biological interface: A quartz crystal microbalance study. *Biochemical Engineering XVI, Seattle, WA, Jul 26-30*.
33. J. A. Kotarek, D. D. Soto-Ortega, and **M. A. Moss** (2011) Inhibition of amyloid- $\beta$  protein assembly is dependent upon environmental conditions: A QCM biosensor analysis. *Annual Meeting of Institute of Biological Engineers, Atlanta, GA, Mar 3-5*.
34. J. W. Reed, F. J. Gonzalez-Velasquez, J. W. Fuseler, E. E. Matherly, J. A. Kotarek, D. D. Soto-Ortega, and **M. A. Moss** (2010) Optical image analysis facilitates an understanding of amyloid- $\beta$  aggregate activation of brain microvascular endothelial cells. *AIChE Annual Meeting, Salt Lake City, UT, Nov 7-12*: 386f.
35. D. D. Soto-Ortega, S. Paolini, A. Alkilany, R. Mahtab, C. Murphy, and **M. A. Moss** (2010) Negatively charged gold nanoparticles can inhibit the formation of Alzheimer's disease amyloid- $\beta$  protein aggregates in a mechanistic-specific fashion. *AIChE Annual Meeting, Salt Lake City, UT, Nov 7-12*: 701d.
36. J. A. Kotarek, D. Soto-Ortega, Q. Wang, and **M. A. Moss** (2010) Inhibition of amyloid- $\beta$  protein assembly is dependent upon environmental conditions: A quartz crystal microbalance analysis. *AIChE Annual Meeting, Salt Lake City, UT, Nov 7-12*: 750c.
37. J.-H. Tseng, S. Guram, and **M. A. Moss** (2010) Calcium channel blockers can attenuate amyloid- $\beta$  self-assembly: Potential as dual-action drugs for Alzheimer's disease. *AIChE Annual Meeting, Salt Lake City, UT, Nov 7-12*: 47c.
38. C. Suo, J.-H. Tseng, L. Wu, Q. Wang, and **M. A. Moss** (2010) Polyphenols do not dissociate Alzheimer's disease amyloid- $\beta$  fibrils but bind fibril to interrupt fibril-thioflavin T interactions. *AIChE Annual Meeting, Salt Lake City, UT, Nov 7-12*: 575c.
39. E. Pryor, **M. A. Moss**, and C. Hestekin (2010) Electrophoretic separation of amyloid proteins via capillary electrophoresis. *Annual Meeting of the American Electrophoresis Society, Salt Lake City, UT, Nov 7-12*: 198f.
40. J. A. Kotarek and **M. A. Moss** (2010) Analysis of amyloid- $\beta$  protein assembly at a biological interface using a quartz crystal microbalance. *Proceedings of the 14<sup>th</sup> Annual Meeting of IBE, Cambridge, MA, Mar 3-6*.
41. T. J. Davis, D. D. Soto-Ortega, J. A. Kotarek, F. J. Gonzalez-Velasquez, K. Sivakumar, L. Wu, Q. Wang, and **M. A. Moss** (2009) Comparative study of inhibition at multiple stages of amyloid- $\beta$  self-assembly provides mechanistic insight. *AIChE Annual Meeting, Nashville, TN, Nov 8-13*: 485ak.
42. F. J. Gonzalez-Velasquez, J. W. Reed, E. E. Matherly, J. A. Kotrek, D. D. Soto-Ortega, and **M. A. Moss** (2009) Amyloid- $\beta$  protein aggregates selectively activate brain endothelium for adhesion via nuclear factor- $\kappa$ B-mediated upregulation of cell surface adhesion molecules. *AIChE Annual Meeting, Nashville, TN, Nov 8-13*: 649f.
43. J. A. Kotarek and **M. A. Moss** (2009) Quartz crystal microbalance analysis of amyloid- $\beta$  protein assembly at a biological interface. *AIChE Annual Meeting, Nashville, TN, Nov 8-13*: 230d.
44. D. D. Soto-Ortega, B. P. Murphy, T. J. Davis, Q. Wang, and **M. A. Moss** (2009) Inhibition of fibril formation by the amyloid- $\beta$  Protein Involved in Alzheimer's disease. *AIChE Annual Meeting, Nashville, TN, Nov 8-13*: 694g.
45. E. Pryor, C. N. Hestekin, and **M. A. Moss** (2009) The use of capillary electrophoresis to monitor the early stages of insulin aggregation. *AIChE Annual Meeting, Nashville, TN, Nov 8-13*: 457d.

46. E. Pryor, C. N. Hestekin, and **M. A. Moss** (2009) Capillary electrophoresis as a tool to monitor the early stages of insulin aggregation. *Annual Meeting of the American Electrophoresis Society, Nashville, TN, Nov 8-13*: 334h.
47. F. J. Gonzalez-Velasquez, J. W. Reed, E. E. Matherly, J. A. Kotrek, D. D. Soto-Ortega, and **M. A. Moss** (2009) Activation of endothelium in Alzheimer's disease brain involves soluble aggregates of the amyloid- $\beta$  protein. *BMES Annual Meeting, Pittsburgh, PA, Oct 7-10*: PS 9A-19.
48. D. D. Soto-Ortega, B. P. Murphy, T. J. Davis, Q. Wang, and **M. A. Moss** (2009) Inhibition of fibril formation by the amyloid- $\beta$  protein involved in Alzheimer's disease. *BMES Annual Meeting, Pittsburgh, PA, Oct 7-10*: PS 9A-131.
49. J. A. Kotarek and **M. A. Moss** (2009) Quartz crystal microbalance analysis of amyloid- $\beta$  protein assembly at a biological interface. *BMES Annual Meeting, Pittsburgh, PA, Oct 7-10*: PS 9A-132.
50. D. D. Soto-Ortega, T. J. Davis, J. A. Kotarek, F. J. Gonzalez-Velasquez, K. Sivakumar, L. Wu, Q. Wang, and **M. A. Moss** (2009) Study of inhibition at multiple stages of amyloid- $\beta$  self-assembly provides mechanistic insight. *Biochemical Engineering XVI, Burlington, VT, Jul 5-9*.
51. F. J. Gonzalez-Velasquez, J. W. Reed, J. W. Fuseler, E. E. Matherly, J. A. Kotarek, D. D. Soto-Ortega, and **M. A. Moss** (2009) Activation of endothelium in Alzheimer's disease brain involves soluble aggregates of the amyloid- $\beta$  protein. *Biochemical Engineering XVI, Burlington, VT, Jul 5-9*.
52. D. D. Soto-Ortega, B. Murphy, and **M. A. Moss** (2009) Inhibition of Alzheimer's disease amyloid- $\beta$  fibril formation. *Annual Meeting of the South Carolina Academy of Science, Columbia, SC, Apr 14-16*.
53. J. A. Kotarek, K. C. Johnson, and **M. A. Moss** (2009) Quartz crystal microbalance analysis of amyloid- $\beta$  protein assembly at a biological interface. *Annual Meeting of the South Carolina Academy of Science, Columbia, SC, Apr 14-16*.
54. F. J. Gonzalez-Velasquez, J. A. Kotarek, and **M. A. Moss** (2009) Activation of endothelium in Alzheimer's disease brain involves soluble aggregates of the amyloid- $\beta$  protein. *Annual Meeting of the South Carolina Academy of Science, Columbia, SC, Apr 14-16*.
55. J. A. Kotarek, K. C. Johnson, and **M. A. Moss** (2009) Quartz crystal microbalance analysis of amyloid- $\beta$  protein assembly at a biological interface. *Proceedings of the 13<sup>th</sup> Annual Meeting of IBE, Santa Clara, CA, Mar 19-21*: #048.
56. F. J. Gonzalez-Velasquez, J. A. Kotarek, and **M. A. Moss** (2009) Activation of endothelial adhesion in Alzheimer's disease involves soluble aggregates of the amyloid- $\beta$  protein. *Proceedings of the 32<sup>nd</sup> Annual Meeting of the Adhesion Society, Savannah, GA, Feb 15-19*: 15-17.
57. J. A. Kotarek, K. C. Johnson, and **M. A. Moss** (2008) Quartz crystal microbalance analysis of growth kinetics for aggregation intermediates of the amyloid- $\beta$  protein. *AIChE Annual Meeting Conference Proceedings, Philadelphia, PA, Nov 8-13*: 587e.
58. F. J. Gonzalez-Velasquez, J. A. Kotarek, and **M. A. Moss** (2008) Activation of endothelium in Alzheimer's disease brain involves soluble aggregates of the amyloid- $\beta$  protein. *AIChE Annual Meeting Conference Proceedings, Philadelphia, PA, Nov 8-13*: 670d.
59. J. A. Kotarek, K. C. Johnson, and **M. A. Moss** (2008) Quartz crystal microbalance analysis of growth kinetics for aggregation intermediates of the amyloid- $\beta$  protein. *Proceedings of the 12<sup>th</sup> Annual Meeting of IBE, Chapel Hill, NC, Mar 6-9*: #048.
60. F. J. Gonzalez and **M. A. Moss** (2008) Selective activation of endothelial monolayers by soluble aggregates of the amyloid- $\beta$  protein involved in Alzheimer's disease: Potential for exploitation in a cell-based biosensor. *2008 South Carolina IDeA Network of Biomedical Research Excellence Symposium, Charleston, SC, Jan 17-18*.
61. J. A. Kotarek and **M. A. Moss** (2007) Detection of amyloid- $\beta$  aggregate growth using a quartz crystal microbalance. *AIChE Annual Meeting Conference Proceedings, Salt Lake City, UT, Nov 4-9*: 516ay.
62. A. A. Reyes Barcelo, F. J. Gonzalez, and **M. A. Moss** (2007) Influence of serum albumin on Alzheimer's amyloid- $\beta$  protein assembly and activity. *AIChE Annual Meeting Conference Proceedings, Salt Lake City, UT, Nov 4-9*: 242b.
63. F. J. Gonzalez, A. A. Reyes Barcelo, and **M. A. Moss**. (2007) Amyloid- $\beta$  induced endothelial-monocyte interactions involved in Alzheimer's disease. *South Carolina Bioengineering Summit, Charleston SC, Jun 14-15*.

64. F. J. Gonzalez, A. A. Reyes Barcelo, and **M. A. Moss** (2007) Amyloid- $\beta$  induced endothelial-monocyte interactions involved in Alzheimer's disease. *Experimental Biology, Washington DC, Apr 28 – May 2, FASEB Journal* **21**: 872.6.
65. J. A. Kotarek, K. C. Johnson, and **M. A. Moss** (2007) Quantification of surface-specific assembly of the amyloid- $\beta$  protein involved in Alzheimer's disease using a quartz crystal microbalance. *Proceedings of the 12<sup>th</sup> Annual Meeting of IBE, St. Louis, MO, Mar 30 – Apr 1*: #078.
66. J. A. Kotarek and **M. A. Moss** (2006) Detection of active amyloid- $\beta$  species using a quartz crystal microbalance. *AICHE Annual Meeting Conference Proceedings, San Francisco, CA, Nov 12-17*: 182d.
67. F. J. Gonzalez, A. A. Reyes Barcelo, and **M. A. Moss** (2006) Amyloid- $\beta$  induced endothelial-monocyte interactions involved in cerebral amyloid angiopathy and Alzheimer's disease. *AICHE Annual Meeting Conference Proceedings, San Francisco, CA, Nov 12-17*: 338f.
68. F. J. Gonzalez, A. A. Reyes Barcelo, and **M. A. Moss** (2006) Amyloid- $\beta$  induced endothelial-monocyte interactions involved in Alzheimer's disease. *BMES Annual Fall Meeting Conference Proceedings, Chicago, IL, Oct 12-14*: #112.
69. F. J. Gonzalez and **M. A. Moss**. (2006) Amyloid- $\beta$ -endothelial interactions involved in cerebral amyloid angiopathy and Alzheimer's disease. *GA/SC Neuroscience Consortium, Charleston SC, Apr 8*.
70. **M. A. Moss** and C. Zayas-Ortiz (2005) Identification of inhibitory binding faces of  $\beta$ -amyloid fibril formation. *AICHE Annual Meeting Conference Proceedings, Cincinnati, OH, Oct 30 - Nov 4*: 52b.
71. **M. A. Moss**. (2005) Role of A $\beta$  fibril formation in augmented monocyte recruitment to the cerebrovascular endothelium. *MUSC-PH Aging Research Day, Columbia SC, Apr 8*.
72. **M. A. Moss**. (2004) Targeting A $\beta$  fibril formation in Alzheimer's disease. *South Carolina Bioengineering Colloquium, Columbia SC, Oct 21-22*.
73. **M. A. Moss** (2005) Role of A $\beta$  fibril formation in augmented monocyte recruitment to cerebrovascular endothelium. *Proceedings of the 28<sup>th</sup> Annual Meeting of the Adhesion Society, Mobile, AL, Feb 19-22*: 83-85.
74. M. R. Nichols, **M. A. Moss**, D. K. Reed, W.-L. Lin, R. Mukhopadhyay, J. Hoh, and T. L. Rosenberry (2002) Growth of  $\beta$ -amyloid(1-40) protofibrils by monomer elongation and lateral association. Characterization of distinct products by light scattering. *FASEB Summer Research Conference, Amyloids and Other Abnormal Protein Folding Processes, Snowmass, CO, Jun 15-20*.
75. **M. A. Moss**, M. R. Nichols, D. K. Reed, and T. L. Rosenberry (2001) Effect of monoclonal antibodies on A $\beta$  fibril formation. *Experimental Biology, Orlando, FL, Mar 30 - Apr 1, FASEB Journal* **15**.
76. **M. Moss** and K. Anderson (2000) Adhesion vs. lodging in cancer cell metastasis. *Experimental Biology, San Diego, CA, Apr 15-18, FASEB Journal* **14**.
77. K. W. Anderson and **M. Moss** (2000) Role of cell adhesion in cancer metastasis. *Proceedings of the 23<sup>rd</sup> Annual Meeting of the Adhesion Society, Myrtle Beach, SC, Feb 20-23*.
78. **M. A. Moss**, S. Zimmer, and K. W. Anderson (1999) Effect of shear stress on the adhesion of human breast cancer cells to endothelial monolayers. *AICHE Annual Meeting Conference Proceedings, Dallas, TX, Oct 31 - Nov 5*.
79. **M. A. Summers**, E. S. Leman, S. Zimmer, and K. W. Anderson (1998) Examination of the role of TNF- $\alpha$  stimulation in cancer cell adhesion using two assay types. *AICHE Annual Meeting Conference Proceedings, Miami, FL, Nov 15-20*.
80. **M. A. Summers**, K. W. Anderson, and S. Zimmer (1997) Effect of TNF- $\alpha$  on cancer cell adhesion and metastatic potential. *BMES Annual Fall Meeting, San Diego, CA, Oct 2-5, Annals of Biomedical Engineering* **S-37**.

## **INVITED TALKS**

1. Seminar, Department of Chemical Engineering, University of Arkansas. The role of amyloid- $\beta$  protein in Alzheimer's disease: Medical insight from engineering tools. March 12, 2014.
2. Seminar, Department of Chemical Engineering, University of Akron. Soluble A $\beta$  aggregates in Alzheimer's disease. Sept 19, 2013.
3. Seminar, Department of Chemistry and Biochemistry, University of Southern Mississippi. Soluble A $\beta$  aggregates in Alzheimer's disease. Apr 19, 2013.

4. Plenary Address, Annual Meeting of the South Carolina Academy of Science. Engineering Insights into Alzheimer's Disease. April 13, 2013.
5. Seminar, Chemical and Biological Engineering, Polytechnic Institute of New York University. Soluble amyloid- $\beta$  protein aggregates in Alzheimer's disease. Apr 20, 2012.
6. Seminar, Biological Engineering, University of Missouri. Soluble amyloid- $\beta$  protein aggregates in Alzheimer's disease. Nov 8, 2011.
7. Seminar, Center of Teaching Excellence, University of South Carolina. Integrative learning through undergraduate research. Sept 19, 2011.
8. Seminar, Geriatric Grand Rounds, Richland Memorial Hospital. Soluble amyloid- $\beta$  protein aggregates in Alzheimer's disease. Apr 6, 2011.
9. Seminar, Chemical Engineering, University of Alabama. Soluble amyloid- $\beta$  protein aggregates in Alzheimer's disease. Mar 14, 2011.
10. Seminar, School of Medicine, University of South Carolina. Activation of endothelium in Alzheimer's disease brain involves soluble aggregates of the amyloid- $\beta$  protein. Sept 20, 2010.
11. Session talk, Advances in Studies of Protein Aggregation and Stability, Biochemical Engineering XVI. Study of inhibition at multiple stages of amyloid- $\beta$  self-assembly provides mechanistic insight. Jul 8, 2009.
12. Seminar, Department of Chemistry, Biochemistry, Physics, and Geology, Winthrop University. Soluble amyloid- $\beta$  aggregation intermediates in Alzheimer's disease. Jun 24, 2009.
13. Seminar, Department of Chemical and Biomolecular Engineering, North Carolina State University. Soluble amyloid- $\beta$  aggregation intermediates in Alzheimer's disease. Sept 29, 2008.
14. Seminar, Department of Chemical and Materials Engineering, University of Kentucky. Soluble amyloid- $\beta$  aggregation intermediates in Alzheimer's disease. Sept 24, 2008.
15. Seminar, College of Pharmacy, University of South Carolina. Soluble amyloid- $\beta$  aggregation intermediates in Alzheimer's disease. Sept 9, 2008.
16. Seminar, Center for Bioelectronics, Biosensors, and Biochips, Clemson University. Soluble amyloid- $\beta$  aggregation intermediates in Alzheimer's disease. Aug 20, 2008.
17. Seminar, Department of Chemical Engineering, University of Arkansas. Soluble amyloid- $\beta$  aggregation intermediates in Alzheimer's disease. Apr 24, 2008.
18. Seminar, Department of Chemical Engineering, Tennessee Technological University. Growth and inhibition of amyloid- $\beta$  aggregation intermediates in Alzheimer's disease. Mar 27, 2008.
19. Seminar, Department of Chemical and Biomolecular Engineering, University of Tennessee. Soluble amyloid- $\beta$  aggregation intermediates in Alzheimer's disease. Dec 4, 2007
20. Seminar, Department of Chemical Engineering, University of Puerto Rico Mayaguez. Soluble amyloid- $\beta$  aggregation intermediates in Alzheimer's disease. Nov 27, 2007
21. Seminar, Biochemistry Seminar Series, University of South Carolina. Amyloid- $\beta$ /endothelial interactions involved in cerebral amyloid angiopathy and Alzheimer's disease. May 11, 2006.
22. Seminar, Department of Chemical and Materials Engineering, University of Kentucky. The role of amyloid- $\beta$  fibril formation in Alzheimer's disease and cerebral amyloid angiopathy. Oct 18, 2005.
23. Seminar, Biomedical Science Seminar Series, University of South Carolina School of Medicine. Role of A $\beta$  fibril formation in Alzheimer's disease and cerebral amyloid angiopathy. Mar 28, 2005.
24. Seminar, Geriatrics Noon Conference, Palmetto Richland Memorial Hospital. Role of A $\beta$  fibril formation in Alzheimer's disease and cerebral amyloid angiopathy. Mar 16, 2005.

## **FUNDING**

July 2013 – June 2014 South Carolina, EPSCoR  
 “SAN: Mechanistic insight into the inhibition of Alzheimer's associated aggregation by polyphenols”  
 Amount: \$10,000 Role: Principal Investigator  
 Characterize the mechanism by which a select group of plant polyphenols intervenes within the pathogenic process of A $\beta$  aggregation associated with Alzheimer's disease

- Sept 2012 – May 2017 COBRE, National Institutes of Health  
 “COBRE: Center for dietary supplements and inflammation”  
 Subproject: Insights into anti-inflammatory capabilities of plant polyphenols for treatment of Alzheimer’s disease  
 Amount: \$1,007,157 Role: Project Investigator  
 Define the role of polyphenols in inhibiting attenuating Alzheimer’s disease via their actions as antioxidants and inhibitors of protein aggregation
- May 2012 – Aug 2013 ASPIRE II, South Carolina Research Foundation  
 “Brain inflammation: Diet-induced obesity and novel anti-inflammatory therapeutics”  
 Amount: \$100,000 Role: Co-Investigator  
 Determine whether chronic inflammatory damage to the CNS results in long-term cellular, epigenetic/immune and cognitive alterations that can be blocked by innovative early treatment with anti-inflammatory natural products
- Apr 2010 – Mar 2013 Research Experiences for Undergraduates, National Science Foundation  
 “REU site: Biomolecular and biomechanical interactions”  
 Amount: \$300,000 Role: Principal Investigator  
 Administer a program that provides a 10-week research experience for 10 undergraduate students, including laboratory research, enhanced learning activities, and social activities
- Sept 2009 – Aug 2010 Pilot Study Grant, Complementary and Alternative Medicine (CAM) Center, University of South Carolina School of Medicine  
 “Insight into the action of polyphenols in the treatment of Alzheimer’s disease”  
 Amount: \$10,000 Role: Principal Investigator  
 Compare the role of polyphenols in inhibiting A $\beta$  aggregation and attenuating inflammatory responses elicited by A $\beta$
- Apr 2007 – Mar 2012 Faculty Early Career Development Program (CAREER), National Science Foundation  
 “Amyloid fibril formation in bulk solution and on supported phospholipid bilayers”  
 Amount: \$400,000 Role: Principal Investigator  
 Utilize inhibitors of A $\beta$  aggregation to ascertain the contributions of different growth mechanisms both in bulk solution and upon the surface of phospholipid bilayers.  
 Graduate Research Supplement of \$81,590 additionally funded for 2009-10, 2011-12  
 Research Experience for Undergraduates Supplement of \$9,500 funded for 2011-12
- Oct 2007 – Sept 2009 New Investigator Research Grant, Alzheimer’s Association  
 “Characterization of membrane compositions that promote amyloid- $\beta$  assembly”  
 Amount: \$100,000 Role: Principal Investigator  
 Determine the role that AD-related changes in brain membrane composition have upon A $\beta$  assembly rates and neurotoxicity
- Oct 2007 – Oct 2010 Research at Undergraduate Institutions (RUI), National Science Foundation  
 “Surface-engineered nanoparticles to inhibit protein aggregation”  
 Amount: \$329,115 (\$79,920 Moss budget) Role: Co-Investigator  
 Characterize interactions between surface-modified gold nanoparticles and A $\beta$  protein toward the interruption of A $\beta$  aggregate assembly.
- Aug 2007 – Feb 2008 Target Faculty Funding, South Carolina IDEa Networks of Biomedical Research Excellence (INBRE)  
 “Detection of active forms of the amyloid- $\beta$  protein using a cell-based biosensor for early diagnosis of Alzheimer’s disease”  
 Amount: \$30,000 Role: Principal Investigator  
 Examine the possibility that stimulation of endothelial monolayer permeability by A $\beta$  aggregates can be exploited for use in an endothelial cell-based biosensor.

Jul 2005 – Jun 2007	<p>Beginning Grant-in-Aid, American Heart Association Mid-Atlantic Affiliate          "A<math>\beta</math> fibril formation processes and vascular damage associated with cerebral amyloid angiopathy"          Amount: \$132,000 <span style="float: right;">Role: Principal Investigator</span>          Identify interactions between A<math>\beta</math> and vascular endothelial cells associated with inflammatory responses.</p>
May 2005 – Jun 2006	<p>Research and Productive Scholarship, University of South Carolina          "Involvement of endothelial receptors in A<math>\beta</math>-augmented adhesion and vascular degeneration"          Amount: \$19,000 (\$18,000 Moss budget) <span style="float: right;">Role: Principal Investigator</span>          Characterize the involvement of cell surface receptors in the A<math>\beta</math>-stimulated adhesion of monocytes to endothelial monolayers.</p>
Jul 2002 – Jun 2004	<p>Postdoctoral Fellowship, American Heart Association Florida/Puerto Rico Affiliate          "Inhibition of <math>\beta</math>-amyloid fibril formation"          Amount: \$70,000 <span style="float: right;">Role: Principal Investigator</span></p>
Jun 2002 – Dec 2002	<p>Pilot Project Grant, Mayo Clinic Jacksonville          "Inhibition of <math>\beta</math>-amyloid fibril formation"          Amount: \$30,000 <span style="float: right;">Role: Principal Investigator</span></p>