Jeffrey R. Capadona, Ph.D.

Curriculum Vitae

PROFESSIONAL EXPERIENCE

TENURE TRACK ASSISTANT PROFESSOR August 1, 2010–Present
Department of Biomedical Engineering, Case Western Reserve University

RESEARCH HEALTH SCIENTIST 2005–Present
L. Stokes Cleveland Department of Veterans Affairs Medical Center
- Member: Institutional Association for the Care and Use of Animals Committee (IACUC)
- Member: Research Space Committee

ADJUNCT ASSISTANT PROFESSOR 2008–2010
Department of Biomedical Engineering, Case Western Reserve University

AFFILIATIONS
Case Western Reserve University
- Neural Engineering Center, Department of Biomedical Engineering
- Institute for Advanced Materials

VA Centers of Excellence
- Advanced Platform Technology Center – Leadership Team
- Cleveland Functional Electrical Stimulation Center

GRADUATE RESEARCH ASSISTANT 2000 – 2005
Engineered bioactive surfaces to control cell adhesion and function
Advisors: Dr. A.J. Garcia and Dr. David Collard; GIT, Atl., GA

PROFESSIONAL AFFILIATIONS

Society For Biomaterials, Biomedical Engineering Society, Materials Research Society, American Chemical Society

EDUCATION

Bachelor of Science, Chemistry, Saint Joseph's College, Rensselaer, IN, 2000

Doctor of Philosophy, School of Chemistry and Biochemistry, Minor in Bioengineering, Georgia Institute of Technology, Atlanta, GA, 2005

Thesis: Surface-Directed Assembly of Fibrillar Extracellular Matrices
Advisors: Bioengineering: Dr. Andrés J. García; Chemistry: Dr. David M. Collard

GRANTS / FUNDING

ACTIVE

N/A (Capadona and Luciano) 9/3/2013 – 9/2/2014 0 calendar
Wallace H. Coulter Foundation;
Administered Through Case Western Reserve University
Preventing infection of ventricular shunts

The goal of this project is to prevent ventricular shunt infections. We will focus on developing affinity based drug delivery methods to release antibiotics from the surface of the shunts. Initial targets will focus on bacterial strains not currently treatable

Grant # RNS082404A (Capadona) 9/01/2013 – 8/31/2017 3.57 calendar
NINDS, NIH
CD14 facilitates neural device integration and performance

The purpose of this study is to investigate the role of CD14 in the neurodegnerative neuroinflammatory response to microelectrodes implanted in the cortex.

Award (Capadona) 10/1/2012 – 9/30/2017 0 calendar
Department of Veterans Affairs
Presidential Early Career Award for Scientist and Engineers

Discretionary funding to supplement projects, and support new studies.

Grant # B7122R (Capadona) 10/1/2010 – 9/30/2013 6.25 calendar
Department of Veterans Affairs
Novel modalities for assessing the cortical tissue-electrode interface

The purpose of this project is to develop a temporal and spatial understanding of the role of activated microglial and macrophage cells in neurodegeneration at the microelectrode-cortical tissue interface. This study will deliver a cell-specific viral vector to selectively ablate these cells and controlled time intervals. Initial efforts will focus on the IHC analysis of the tissue, and pilot studies of the effects on chronic neural recording stability.

Grant # F7404-R (Potkay) 4/1/2011 - 3/31/2014 1.2 calendar
Department of Veterans Affairs
In vivo performance of a high efficiency microfabricated artificial lung

The hypothesis of this study is that a microfabricated, silicone, artificial lung with feature sizes similar to, or better than that of the human lung, will reliably supplement the respiratory function of rats. The objective of the current Merit Review proposal is to design, develop, and qualify the in vivo performance of a high efficiency, microfabricated artificial lung with feature sizes much smaller than conventional artificial lungs.

Grant # 1I21RX000462 (Bogie) 4/1/2013 - 3/31/2015 0.6 calendar
Department of Veterans Affairs
Development of a low-cost advanced modular pressure relief cushion

This project seeks to develop a seat cushion for wheelchairs that minimizes pressure on soft tissue. We will utilize pressure sensing maps as guides for the development of a mechanically compliant cushion.

N/A (Capadona) 4/1/2014 – 3/31/2018 6.25 calendar
Department of Veterans Affairs
Resveratrol Prevents Microelectrode Mediated Neurodegeneration

The purpose of this project is to develop a temporal and spatial understanding of the role of activated microglial and macrophage cells in neurodegeneration at the microelectrode-cortical tissue interface. This study will deliver a cell-specific viral vector to selectively ablate these cells and controlled time intervals. Initial efforts will focus on the IHC analysis of the tissue, and pilot studies of the effects on chronic neural recording stability.

COMPLETED

Grant # B6344W (Capadona) 7/1/08-6/30/11 12 calendar
Department of Veteran's Affairs
Career Development Award II
Development of Advanced Materials for Direct CNS Interfacing

The purpose of this project is to perform mentored research towards the development of novel materials with dynamic surface modifications to mediate the cellular response to implanted intracortical microelectrodes. This study will identify peptides and therapeutic agents that will attenuate the microglia release of neurodegenerative cytokines and chemokines, in an effort to prolong the lifetime of current intracortical electrode technology. This project encompasses development, fabrication, and characterization of the new materials and then investigation of their biological response in animal studies.

Grant #F4827H (Capadona) 08/01/06-8/01/08 12 calendar
Department of Veteran's Affairs
Associate Investigator Award
Nanocomposites for cortical electrodes

This was a mentored post-doctoral training experience focused on the development of bio-inspired polymer nanocomposites that mimicked the architecture, design, and mechanical morphing capabilities of the sea cucumber. The goal of the materials was to be implemented as biomedical implants that were stiff for implantation into cortical brain tissue, but dynamically softened based on the chemical environment of the brain, after implantation.

Completed Smaller Awards

- VA RR&D – Small Equipment Grant – (PI) 4/08
- VA RR&D – "Mechanisms causing neuronal dieback associated with cortical implants"; VISN 10 – RIP – (PI) 10/07 – 9/08
- VA RR&D – "Advances in pressure relief technology using dynamic materials"; VISN 10 – Research Initiative Program (RIP) – (Co-I; PI-Bogie) 8/06 – 7/07

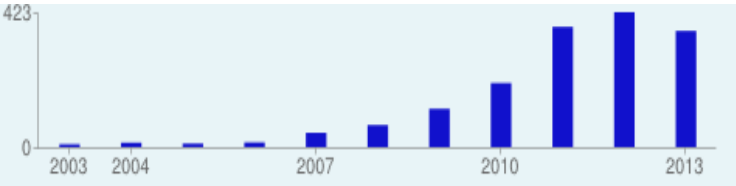
ACADEMIC HONORS AND AWARDS

- Outstanding Junior Faculty Poster Award – Gordon Research Conference on Biomaterials and Tissue Engineering (2013; runner up)
- Biomedical Engineering Student Association Faculty Graduate Student Mentorship Award (2012-2013)
- Biomedical Engineering Society Award for Excellence in Undergraduate Mentorship (2012-2013)
- Presidential Early Career Award for Scientists and Engineers (PECASE); (2011; Cleveland VA RR&D)
- Jessica Melton Perry Award – Distinguished Teaching in Disciplinary and Professional Writing (2012)
- District 230 Foundation, Legacy Hall Inductee (2012)
- Tau Beta Pi, Faculty Appreciation Award (2011-2012)
- Case Western Reserve, Mentors Fellow Program, Fellow (2011)
- Diekhoff Mentoring Award, Case Western Graduate Mentoring Award, Winner (2011)
- Case School of Engineering Faculty Research Award (2008)
- National Student Investigator Recognition: Student Travel Award, Society For Biomaterials (2005)
- National Student Investigator Recognition: The Proteins and Cells at Interfaces Special Interest Group of the Society for Biomaterials (2003)
- Cherry Emerson Fellow, Georgia Institute of Technology (2000-2002)
- Graduate Assistance in Areas of National Need (GAANN) Fellow, Georgia Institute of Technology (2000)
- Senior of the Year Finalist, Saint Joseph's College (2000)
- Outstanding Chemistry Student Award, Saint Joseph's College (2000)
- Saint Joseph's College Leadership Award (1999)
- Academic All-Conference; NCAA Division II Baseball (1998-1999)
- Alpha Lambda Delta, and Delta Epsilon Sigma Honor Society Memberships

RESEARCH PUBLICATIONS

As of 9/10/2013 (google scholar): **Citations per Year:**

Total Publications: **27 (in press)**
Total Citations: >1700
h-index: 17
i10-index: 20



CWRU / VA Faculty:
Near Submission (5)

1. J.L Skousen, M. Jorfi, C. Weder, and **J.R. Capadona*.** "Progression Towards Biocompatible Intracortical Microelectrodes for Neural Interfacing Applications." Review
2. J.K. Nguyen, K.A. Potter, J.L. Skousen, A.E. Hess, D.J. Tyler, S.J. Rowan, C. Weder, and **J.R. Capadona*.** "The Chronic Neuroinflammatory Response to Mechanically-Compliant Intracortical Implants."
3. K.A. Potter, J.K. Nguyen, K. Kovach, M. Gitomer, J.L. Skousen, **J.R. Capadona*.** SOD Mimetics

4. K.A. Potter, M. Ravikumar, J.L. Skousen, K. Householder **J.R. Capadona*.** Rat versus Mouse Paper
5. M. Ravikumar, **J.R. Capadona*** Chimera Model, *Nature Neuroscience*

Under Review (4)

1. K. Kovach, **J.R. Capadona,** A. Sen Gupta, J. Potkay. "The Effects of Efficient Surface Modification of PDSM Microchannels on Hemocompatibility" *under review*
2. A. Hess-Dunning, L. Hsu, **J.R. Capadona**, C. Weder, S.J. Rowan, D.J. Tyler, and C.A. Zorman. "Mechanically-Adaptive Implantable Biosensors Using a Polymer Nanocomposite with Cotton-derived Cellulose Nanocrystals." *under review*
3. K.A. Potter, M. Jorfi, K.T. Householder, E.J. Foster, C. Weder, **J.R. Capadona***. "Curcumin-releasing mechanically-adaptive intracortical implants improve neuronal density and blood-brain barrier stability at the implant-tissue interface." *under review*

In Press/Published (10)

1. A.E. Hess, **J.R. Capadona**, K. Shanmuganathan, S.J Rowan, C. Weder, D.J. Tyler, C.A. Zorman. "Development of a stimuli-responsive polymer nanocomposite toward biologically-optimized, MEMS-based neural probes." *J. Micromechan.Microeng.* 2011, 21; 054009 (http://dx.doi.org/10.1088/0960-1317/21/5/054009).
2. J.P. Harris, A.E. Hess, S.J. Rowan, C. Weder, C.A. Zorman, D.J. Tyler, **J.R. Capadona*.** "*In vivo* deployment of mechanically adaptive nanocomposites for intracortical microelectrodes." *J. Neural Eng.* 2011, 8; (*046010*). Highlights Collection for 2011.
3. J.P. Harris, **J.R. Capadona**, R.H. Miller, B.C. Healy, K. Shanmuganathan, S.J. Rowan, C. Weder, D.J. Tyler. "Mechanically Adaptive Intracortical Implants Improve the Proximity of Neuronal Cell Bodies." *J. Neural Eng.* 2011, 8; (*066011*).
4. K.A. Potter, J.S. Simon, B. Velagapudi, **J.R. Capadona***. "Reduction of autofluorescence at the microelectrode-cortical tissue interface improves antibody detection." *J. Neurosci Meth.* 2012, 203(1); 96-105.
5. **J. R. Capadona***, D.J. Tyler, C.A. Zorman, S. J. Rowan, and C. Weder, "Mechanically Adaptive Nanocomposites for Neural Interfacing," MRS Bulletin – Materials for Neural Interfacing. 2012, 37(6); 557-561.
6. K.A. Potter, A.C. Buck, W.K. Self, **J.R. Capadona***. "Stab Injury and Device Implantation within the Brain Results in Inversely Multiphasic Neuroinflammatory and Neurodegenerative Responses." *J. Neural Eng.* 2012, 9, 046020.
7. M. Ravikumar, S. Jain, R.H. Miller, **J.R. Capadona**, S.M. Selkirk. "An Organotypic Spinal Cord Slice Culture Model to Assess Neurodegeneration." *J. Neurosci Meth,* 2012, 211(2); 280-288.
8. J.D, Fox, **J.R. Capadona**, P.D. Marasco, and S.J. Rowan. "Bioinspired Water-enhanced Mechanical Gradient Nanocomposite Films that Mimic the Architecture and Properties of the Squid Beak." *JACS,* 2013, 135(13); 5167.
9. A.E. Hess, K. Potter, C.A. Zorman, D.J. Tyler, and **J.R. Capadona.** "Environmentally-controlled Microtensile Testing of Mechanically-Dynamic Polymer Nanocomposites for Ex Vivo Characterization." *J. Vis. Exp.,* 2013, e50078 (doi:10.3791/50078).
10. K.A. Potter, A. Buck, S. Sunil, M. Callanan, W.K. Self, and **J.R. Capadona***. " The Effect of Resveratrol on Neurodegeneration and Blood Brain Barrier Stability Surrounding Intracortical Microelectrodes." *Biomaterials*, 2013, 34(29); 7001-7015.
11. M. Ravikumar, D. Hageman, W. Tomaszewski, G. Chandra, J.L Skousen, and **J.R. Capadona***. "The Effect of Residual Bacterial Contamination on the Neuroinflammatory

Response to Sterilized Intracortical Microelectrodes." *Accepted, Journal of Materials Chemistry B 2014 Emerging Investigators Themed Issue*

CWRU / VA Post-doc: (12 total)

1. O. van den Berg, **J.R. Capadona,** and C. Weder. "Preparation of homogeneous dispersions of tunicate cellulose whiskers in organic solvents." *Biomacromolecules.* 2007, 8(4): 1353–1357 [ISSN: 1525-7797].
2. O. van den Berg, M. Schroeter, **J.R. Capadona,** and C. Weder. "Nanocomposites based on cellulose whiskers and (semi)conducting conjugated polymers." *J. Mater. Chem.* 2007; 17(26); 2746–2753 [ISSN: 0959-9428].
3. **J.R. Capadona,** O. van den Berg, L.A. Capadona, M. Schroeter, S.J. Rowan, D.J. Tyler, C. Weder. "A versatile approach for the processing of polymer nanocomposites with self-assembled nanofibre templates." *Nature Nanotech.* 2007, 2(12); 765–769 (***Cover***) [ISSN: 1748-3387].
4. **J.R. Capadona,** K. Shanmuganathan, D.J. Tyler, S.J. Rowan, C. Weder. "Stimuli-responsive polymer nanocomposites inspired by the sea cucumber dermis." *Science*. 2008, 319(5869); 1370–1374 [ISSN: 0036-8075].
5. **J.R. Capadona,** K. Shanmuganathan, S. Trittschuh, S. Seidel, S.J. Rowan, and C. Weder. "Polymer Nanocomposites with Microcrystalline Cellulose." *Biomacromolecules*. 2009, 10(4); 712–716 [ISSN: 1525-7797].
6. A. Hess, J. Dunning. J. Harris. **J.R. Capadona**, K. Shanmuganathan, S.J. Rowan, C. Weder, D.J. Tyler, and C. Zorman. "A bio-inspired, chemo-responsive polymer nanocomposite for mechanically dynamic microsystems." Solid-State Sensors, Actuators and Microsystems, 2009. TRANSDUCERS 2009. International pp 224–7.
7. K. Shanmuganathan, **J.R. Capadona,** S.J. Rowan, and C. Weder. "Biomimetic Mechanically Adaptive Nanocomposites." *Progr. Polym. Sci.* 2010, 35; 212–222 [ISSN: 0079-6700].
8. K. Shanmuganathan, **J.R. Capadona,** S.J. Rowan, and C. Weder. "Bio-inspired mechanically-adaptive nanocomposites derived from cotton cellulose whiskers." *J. Mater. Chem.* 2010, 20; 180–186 [ISSN: 0959-9428].
9. S.J. Eichhorn, A. Dufresne, M. Aranguren, **J.R. Capadona**, S.J. Rowan, C. Weder, W. Thielemans, M. Roman, S. Renneckar, W. Gindl, S. Weigel, H. Yano, K. Abe, M. Nogi, A. Mangalam, J. Simonsen, A.D. Benight, A. Bismarck, L.A. Berglund. Review: "Current International Research into Cellulose Nanofibres and Nanocomposites." *J. Mater. Sci.* 2010, 45(1); 1-33 [ISSN: 0022-2461].
10. K. Shanmuganathan, **J.R. Capadona,** S.J. Rowan, and C. Weder. "Stimuli-Responsive Mechanically Adaptive Polymer Nanocomposites." *Appl. Mat. Interf.* 2010, 2(1); 165-174 [ISSN: 1944-8244].
11. S. Padalkar, **J.R. Capadona**, S.J. Rowan, C. Weder, Y-H. Won**,** L.A. Stanciu, and R.J. Moon. "Natural Biopolymers: Novel Templates for the Synthesis of Nanostructures." *Langmuir*. 2010, 26(11); 8497-8502 [ISSN: 0743-7463].
12. S. Padalkar, **J.R. Capadona**, S.J. Rowan, C. Weder, L.A. Stanciu, and R. J. Moon. "Self-Assembly and Alignment of Semiconductor Nanoparticles on Cellulose Nanocrystals." *J. Mater. Sci.* 2011, 46; 5672-5679.

Georgia Institute of Technology / Graduate Work: (5 total)

1. N.D. Gallant, **J.R. Capadona,** A.B. Frazier, D.M. Collard, and A.J. García. "Micropatterned surfaces to engineer focal adhesions for analysis of cell adhesion strengthening." *Langmuir,* 2002; 18(14); 5579–5584 [ISSN: 0743-7463].

2. **J.R. Capadona,** D.M. Collard, and A.J. García. "Fibronectin adsorption and cell adhesion to mixed monolayers of tri(ethylene glycol)- and methyl-terminated alkanethiols." *Langmuir*; 2003; 19(5); 1847–1852. (Special Edition) [ISSN: 0743-7463]
3. **J.R. Capadona,** T.A. Petrie, K.P. Fears, R.A. Latour, D.M. Collard, and A.J. García. "Surface-nucleated assembly of fibrillar extracelluar matrices." *Adv. Mater*. 2005; 17; 2604–2608 [ISSN: 0935-9648].
4. T.A. Petrie, **J.R. Capadona,** C.D. Reyes, and A.J. García. "Integrin specificity and enhanced cellular activities associated with surfaces presenting a recombinant fibronectin fragment compared to RGD supports." *Biomaterials.* 2006; 27(31); 5459–5470 [ISSN: 0142-9612].
5. J.E. Raynor, **J.R. Capadona,** T.A. Petrie, A.J. García, and D.M. Collard. "Polymer brushes and self-assembled monolayers: Versatile platforms to control cell adhesion to biomaterials (Review)." *Biointerphases*. 2009, 4(2); FA3–FA16 (***Cover***) [ISSN: 1559-4106].

Invited Book Chapters

1. K. Potter, B. Gui, and **J.R. Capadona***. Chapter 3, "*Biomimicry at the cell-material interface,*" Biomimetics - Innovation thru mimicking natures inventions; CRC Press, 2011, p95-130.
2. **J.R. Capadona*** and P.D. Marasco. Chapter 33, "*Brain response to neural prostheses*," Textbook of Neural Repair and Rehabilitation, 2nd Edition; Cambridge University Press, 2013 (*in press*).

INVITED SEMINARS

Before Starting as Case Faculty

1. "Biomimetic Surfaces Directing Fibrillar Extracellular Matrix Assembly to Direct Cell Function," Department of Biomedical Engineering, Case Western Reserve University, Host: Dr. Jinming Gao (March 2005).
2. "Evaluation of Proteins and Cells on Model Biomaterials," Department of Macromolecular Science and Engineering, Case Western Reserve University, Host: Dr. Patrick Mather (November 2005).
3. "New Materials for Central Nervous System Implants," Neural Engineering and Rehabilitation Lectures, Department of Biomedical Engineering, Case Western Reserve University (June 2007).
4. "Responsive Materials for Direct Central Nervous System Interfacing," Departmental Seminar, Department of Biomedical Engineering, Case Western Reserve University (January 2008).
5. "Do it like the sea cucumber: Bio-inspired chemo-mechanical polymer nanocomposites" 235th National Meeting of the Am. Chem. Soc., Div. Polym. Chem. (April 2008).
6. "Bio-inspired Chemo-mechanical Cellulose Nanocomposites for Biomedical Applications" 2008 International Conference on Nanotechnology for the Forest Products Industry – Nanotechnology from Research to Applications (June 2008).

Since Starting as Case Faculty

1. "Materials-based and Molecular Approaches to Understanding and Modulating Gliosis at the Cortical Tissue-Electrode Interface" L. Stokes Cleveland Department of Veterans Affairs Medical Center, Neuroscience Seminar Series (May 2010).

2. "Materials-based Approaches to Modulating Gliosis at the Cortical Tissue-Electrode Interface" BMES, National Meeting (October 2010).
3. "Molecular Approaches to Understanding and Modulating Gliosis at the Neural Tissue-Device Interface" Cleveland Clinic, Cleveland, Ohio (February 2012).
4. "Circumventing the Inflammatory Response to Neural Devices" National Research Advisory Council, Washington DC, Department of Veterans Affairs Central Office (September 2012).
5. "A biomaterials approach to improving brain implants" John Carroll University, Cleveland Ohio, (November 2012).
6. "Mechanically Adaptive Nanocomposites for Neural Interfacing" Polymers in Medicine Workshop, Case Western Reserve University (January 2013).
7. "Alleviating the Inflammatory Response to Brain-Computer Interfaces" Neurology Grand Rounds, University Hospitals of Cleveland (January 2013)
8. "A biomaterials approach to improving brain implants" University of Akron, Department of Biomedical Engineering (March 2013).
9. "Mechanically Adaptive Nanocomposites for Neural Interfacing" Polymers in Medicine Workshop, University of Rostock, Germany (May 2013).
10. "Rewiring the Inflammatory Response to Intracortical Microelectrodes" Society For Biomaterials, Biomaterials Day 2013, Case Western Reserve University (October 2013).

PRESENTATIONS

* **My name is bolded**, my mentees are underlined, *presenter italicized*

Since Starting as Case Faculty (54)
2013 (13)

1. *M. Ravikumar*, S. Sunil, D.J. Hageman, W. Tomaszewski, and **J.R. Capadona**. "Molecular Mediators of Neurodegeneration at the Cortical-Tissue Device Interface" Biomedical Engineering Society, Seattle, WA, September 2013. (podium)
2. *J. Nguyen*, K.A. Potter, J. Skousen, A. Hess, D.J. Tyler, S. Rowan, C. Weder, **J.R. Capadona**. "The Chronic Neuroinflammatory Response to Mechanically-Adaptive Polymer Implants" Biomedical Engineering Society, Seattle, WA, September 2013. (podium)
3. *A. Buck*, K.A. Potter, W. Self, M. Callanan, S. Sunil, **J.R. Capadona** "Resveratrol Reduces Neurodegeneration and BBB Instability Around Intracortical Microelectrodes" Biomedical Engineering Society, Seattle, WA, September 2013. (podium)
4. *K. Kovach*, **J.R. Capadona**, A. Sen Gupta, J. Potkay. "Post-Assembly PEGylation of a PDMS Microchannel for Enhancing Hemocompatibility" Biomedical Engineering Society, Seattle, WA, September 2013.
5. *S. Sunil,* M. Ravikumar, **J.R. Capadona**. "Characterization of Blood Brain Barrier Disruption at the Tissue-Electrode Interface" Biomedical Engineering Society, Seattle, WA, September 2013.
6. *W. Tomaszewski*, M. Ravikumar, S. Sunil, **J.R. Capadona**. "Disruption of Cluster of Differentiation 14 Signaling to Improve Intracortical Microelectrode Integration " Biomedical Engineering Society, Seattle, WA, September 2013.
7. *M. Ravikumar*, S. Sunil, D.J. Hageman, W. Tomaszewski, and **J.R. Capadona**. "Molecular Mediators of Neurodegeneration at the Cortical-Tissue Device Interface" Society For Biomaterials, Biomaterials Day 2013, Case Western Reserve University, October 2013. (podium)
8. *J. Nguyen*, K.A. Potter, J. Skousen, A. Hess, D.J. Tyler, S. Rowan, C. Weder, **J.R. Capadona**. "The Chronic Neuroinflammatory Response to Mechanically-Adaptive Polymer

Implants" Society For Biomaterials, Biomaterials Day 2013, Case Western Reserve University, October 2013. (Award Winner)

9. *K.A. Potter*, J. Nguyen, K. Kovach, M. Gitmomer, T. Srail, S. Skousen, **J.R. Capadona** "Characterization and Deployment of Engineered Systems Capable of Reducing Oxidative Stress Surrounding Intracortical Microelectrodes" Society For Biomaterials, Biomaterials Day 2013, Case Western Reserve University, October 2013. (podium – Award Winner)
10. *K. Kovach*, **J.R. Capadona**, A. Sen Gupta, J. Potkay. "Post-Assembly PEGylation of a PDMS Microchannel for Enhancing Hemocompatibility" Society For Biomaterials, Biomaterials Day 2013, Case Western Reserve University, October 2013. (podium)
11. *S. Sunil,* M. Ravikumar, **J.R. Capadona**. "Characterization of Blood Brain Barrier Disruption at the Tissue-Electrode Interface" Society For Biomaterials, Biomaterials Day 2013, Case Western Reserve University, October 2013.
12. *W. Tomaszewski*, M. Ravikumar, S. Sunil, **J.R. Capadona**. "Disruption of Cluster of Differentiation 14 Signaling to Improve Intracortical Microelectrode Integration" Society For Biomaterials, Biomaterials Day 2013, Case Western Reserve University, October 2013.
13. *J. Hermann,* M. Ravikumar, J. Nguyen, and **J.R. Capadona**. "Disruption of Toll-Like Receptor Signaling to Improve Tissue Integration of Intracortical Microelectrodes" Society For Biomaterials, Biomaterials Day 2013, Case Western Reserve University, October 2013.

2012 (20)

14. *J. Nguyen*, and **J.R. Capadona.** "Assessment of Inflammatory Response to Mechanically Adaptive Intracortical Implants at 16 weeks Post Implantation", The First International Conference on Materials, Energy and Environment (ICMEE), Toledo, OH, 2012.
15. *K.A. Potter*, W.K. Self, A.C. Buck, and **J.R. Capadona.** "Grape-Derived Antioxidants Prevent Neurodegeneration in the Brain after Medical Device Implantation: Application for the Development of Neuroprotective Biomimetic Polymers" The First International Conference on Materials, Energy and Environment (ICMEE), Toledo, OH, 2012.
16. *K. Householder*, K.A. Potter, and **J.R. Capadona**. "Drug Delivery of Ginger Derived Anti-oxidants from Mechanically Adaptive Intracortical Implants to Improve Neural Device Tissue Integration" PiNO 2012, Cleveland, OH, June 2012.
17. K.A. Potter, *S. Sunil*, W.K. Self, and **J.R. Capadona**. "Grape-Derived Antioxidants Prevent Neurodegeneration in the Brain after Medical Device Implantation: Application for the Development of Neuroprotective Biomimetic Polymers" PiNO 2012, Cleveland, OH, June 2012.
18. *J.K. Nguyen*, K.A. Potter, and **J.R. Capadona**. "Mechanically-Adaptive Intracortical Implants Reduce the Chronic Inflammatory Response" Neural Interfaces Conference, Salt Lake City, UT, June 2012.
19. *K.A. Potter*, A.C. Buck, W.K. Self and **J.R. Capadona**. "Inversely Multiphasic Neuroinflammatory and Neurodegenerative Responses Exist Following Stab Injury and Device Implantation with the Cerebral Cortex" Neural Interfaces Conference, Salt Lake City, UT, June 2012.
20. *M. Ravikumar*, D.J. Hageman, and **J.R. Capadona**. "Molecular Mediators of Neurodegeneration at the Cortical-Tissue Device Interface" Neural Interfaces Conference, Salt Lake City, UT, June 2012.
21. *K.A. Potter*, A.C. Buck, M.E. Callanan, and **J.R. Capadona**. "Biomimetic-Mediated Molecular Control of Neurodegeneration in the Brain after Medical Device Implantation" Society For Biomaterials Conference, New Orleans, LA, October 2012.
22. *J.K. Nguyen*, J.P. Harris, A.E. Hess, C. Weder, S.J. Rowan, C.A. Zorman, D.J. Tyler, and **J.R. Capadona**. "Mechanically-Adaptive Polymer Implants Attenuate Chronic

Neuroinflammatory Response" Society For Biomaterials Conference, New Orleans, LA, October 2012. (podium)

23. *J.K. Nguyen*, M. Ravikumar, and **J.R. Capadona**. "Cellular Receptor Targets for Neuroprotection at the Neural Interface" Biomedical Engineering Society, Atlanta, GA, October 2012. (podium)
24. *K.A. Potter*, A.C. Buck, W.K. Self, and **JR. Capadona**. "Inversely Multiphasic Neuroinflammatory and Neurodegenerative Responses Exist Following Stab Injury and Device Implantation with the Cerebral Cortex" Biomedical Engineering Society, Atlanta, GA, October 2012.
25. *K.A. Potter*, S. Sunil, W.K. Self, A.C. Buck, and **J.R. Capadona**. "Suppression of Reactive Oxygen Species by Resveratrol Promotes Neuroprotection at the Cortical Tissue-Device Interface" Biomedical Engineering Society, Atlanta, GA, October 2012. (podium)
26. *M. Ravikumar*, S. Jain, **J.R. Capadona**, R.H. Miller, S.M. Selkirk. "An Organotypic Spinal Cord Slice Culture Model to Quantify Neurodegeneration" Biomedical Engineering Society, Atlanta, GA, October 2012. (podium)
27. *M. Ravikumar*, D.J. Hageman, **J.R. Capadona**. "Characterization of Blood Brain Barrier Disruption at the Cortical Tissue Device Interface" Biomedical Engineering Society, Atlanta, GA, October 2012. (podium)
28. *M. Ravikumar*, D.J. Hageman, **J.R. Capadona**. "Immunohistological Analysis of Endotoxin Removal at Cortical Tissue Device Interface" Biomedical Engineering Society, Atlanta, GA, October 2012. (podium)
29. *M. Ravikumar*, D.J. Hageman, S.M. Selkirk, **J.R. Capadona**. "Molecular Mediators of Neurodegeneration at the Cortical-Tissue Device Interface" Biomedical Engineering Society, Atlanta, GA, October 2012. (podium)
30. K.A. Potter, M. Ravikumar, K.T. Householder, *S. Sunil*, J.S. Simon and **J.R. Capadona**. "Comparison of a rat and mouse model for evaluation of acute and chronic neuroinflammation following device implantation in the brain" Biomedical Engineering Society, Atlanta, GA, October 2012.
31. *K.T. Householder*, K.A. Potter, M. Jorfi, C. Weder and **J.R. Capadona**. "Anti-oxidant Releasing Mechanically-Adaptive Materials Improve Neural Device Tissue Integration" Biomedical Engineering Society, Atlanta, GA, October 2012. (podium)
32. *D.J. Hageman*, M. Ravikumar, **J.R. Capadona**. "Endotoxin Levels Facilitate Device-Associated Neuroinflammation" Biomedical Engineering Society, Atlanta, GA, October 2012.
33. *A.C. Buck*, K.A. Potter, and **J.R. Capadona**. "Surface Immobilized Anti-Inflammatory Peptides To Enhance Device-Tissue Integration" Biomedical Engineering Society, Atlanta, GA, October 2012.

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34. *M. Ravikumar*, R.H. Miller, **J.R. Capadona**, S.M. Selkirk. "Induction of a Phagocytic Microglia Response in Neurotoxic" American Academy of Neurology, Honolulu, HI April 2011. (podium)
35. *B. Velagapudi*, M. Ravikumar, S. Selkirk, **J.R. Capadona.** "Viral Control Over Tissue Encapsulation in the Brain" Department of Veterans Affairs Research Week, Cleveland, OH, May 2011
36. *K.A. Potter* and **J.R. Capadona**. "Treatment with a Grape Derived Anti-Oxidant Protects Neurons in the Brain after Device Implantation," Department of Veterans Affairs Research Week, Cleveland, OH, May 2011

37. *J. Nguyen*, S.M. Selkirk, **J.R. Capadona**. "Molecular control of inflammation at the brain/device interface." Department of Veterans Affairs Research Week, Cleveland, OH, May 2011
38. *M. Ravikumar*, W. Self, S. Jain, S.M. Selkirk, **J.R. Capadona**. "Understanding Inflammation-Mediated Neurodegeneration" Department of Veterans Affairs Research Week, Cleveland, OH, May 2011.
39. *M. Ravikumar*, S. Jain, W. Self, S.M. Selkirk, **J.R. Capadona**. "Excessive Wound Healing May Mediate Neurodegeneration" PiNO 2011, Cleveland, OH, June 2011. – 3rd Place Award
40. *B. Velagapudi*, M. Ravikumar, S.M. Selkirk, **J.R. Capadona**. "Selective Ablation of Inflammatory Cells to Improve Neural Device Performance" PiNO 2011, Cleveland, OH, June 2011. – 1st Place Award
41. *J.R. Capadona* **Gordon Research Conference; Biomaterials: Biocompatibility / Tissue Engineering, Holderness School, NH; 2011.**
42. *M. Ravikumar*, and **J.R. Capadona** "Molecular approaches to study and modulate neurodegeneration at the brain-neural prostheses interface" Biomedical Engineering Society, National Meeting Hartford, CN; 2011. (podium)
43. *K.A. Potter* and **J.R. Capadona**. "Modulation of Neural Degeneration at the Cortical-Tissue Device Interface through Molecular Control of the Inflammatory Response" Biomedical Engineering Society, National Meeting Hartford, CN; 2011. (podium)
44. *J. Nguyen,* M. Ravikumar, R.H. Miller, S. Selkirk, and **J.R. Capadona.** "Local Microglia Cell Ablation at the Cortical Tissue-Electrode Interface" Biomedical Engineering Society, National Meeting Hartford, CN; 2011.
45. *B. Velagapudi*, M. Ravikumar, K.A. Potter, and **J.R. Capadona.** "A transgenic study of molecular mediators of neural degeneration at the cortical-tissue device interface" Biomedical Engineering Society, National Meeting Hartford, CN; 2011 (podium).

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46. *K.A. Potter*, C.M. Okoye, **J.R. Capadona.** "Modulation of Neural Degeneration at the Cortical Tissue-Device Interface" 40th Anniversary Case Department of Biomedical Engineering, Cleveland, OH, October 2009.
47. ***J.R. Capadona.*** L. Stokes Cleveland Department of Veteran's Affairs Medical Center, Neuroscience Seminar Series, Cleveland, OH; 2010. (podium)
48. *B. Gui*, J.P. Basilion, **J.R. Capadona**. "Real-Time Imaging of Intracortical Inflammation at the Device Tissue Interface." Case Research ShowCASE, Cleveland, OH, April 2010.
49. *K.A. Potter* and **J.R. Capadona**. "Modulation of Inflammation at the Cortical-Tissue Device Interface" Case Research ShowCASE, Cleveland, OH, April 2010.
50. *B. Gui*, J.P. Basilion, **J.R. Capadona**. "Real-Time Imaging of Neural Inflammation at the Device Tissue Interface." Department of Veterans Affairs Research Week, Cleveland, OH, May 2010.
51. *K.A. Potter* and **J.R. Capadona**. "Brain-Computer Interfaces: Current Limitations and Materials-Based Solutions" Department of Veterans Affairs Research Week, Cleveland, OH, May 2010.
52. ***J.R. Capadona.*** "Materials-based Approaches to Modulating Gliosis at the Cortical Tissue-Electrode Interface" BMES, National Meeting Austin, TX; 2010. (invited - podium)
53. *B. Gui*, J.P. Basilion, **J.R. Capadona**. "Real-Time Imaging of Intracortical Inflammation at the Device Tissue Interface." BMES, National Meeting Austin, TX; 2010.

54. *R. Jiang*, K.A. Potter, M. Ravikumar, J.P. Harris, **J.R. Capadona**. "Resveratrol-Infused Biomaterials to Minimize Neurodegeneration" Support for Undergraduate Research and Creative Endeavors (SOURCE) Symposium, Cleveland, OH, December 2010.

Before Starting as Case Faculty (24)

1. ***J.R. Capadona*,** D.M. Collard, and A.J. García. "Fibronectin adsorption and cell adhesion to mixed SAMs of tri(ethylene glycol)- and methyl-terminated alkanethiols." National Science Foundation Georgia Tech Emory Center (GTEC). Atlanta, GA; 2003.
2. ***J.R. Capadona***, D.M. Collard, and A.J. García. "Fibronectin adsorption and cell adhesion to 'protein resistant' surfaces." The Workshop on Bio-inspired Processes for Design, Assembly, and Repair of Electromagnetic and Structural Composites. Atlanta, GA; 2003.
3. ***J.R. Capadona***, D.M. Collard, and A.J. García. "Fibronectin adsorption and cell *adhesion to 'protein resistant' surfaces." Georgia Life Sciences Summit. Atlanta, GA; 2003.*
4. ***J.R. Capadona***, D.M. Collard, and A.J. García. "Peptide tethered biomimetic surface that induces fibronectin matrix assembly." Educational Partners Symposium. Atlanta, GA; 2003.
5. ***J.R. Capadona*,** D.M. Collard, and A.J. García. "Fibronectin adsorption and cell adhesion to mixed SAMs of tri(ethylene glycol)- and methyl-terminated alkanethiols." 225th American Chemical Society Meeting, New Orleans, LA; 2003. (podium)
6. ***J.R. Capadona***, D.M. Collard, and A.J. García. 29th Annual Society For Biomaterials National Meeting. Reno, NV; 2003. (podium)
7. ***J.R. Capadona***, D.M. Collard, and A.J. García. 55th Southeast Regional Meeting of the American Chemical Society. Atlanta, GA; 2003. (podium)
8. ***J.R. Capadona***, D.M. Collard, and A.J. García. Materials Research Society (MRS) Spring Meeting. San Francisco, CA; 2004. (podium)
9. ***J.R. Capadona***, D.M. Collard, and A.J. García. Society For Biomaterials (SFB). Philadelphia, PA; 2004. (podium)
10. ***J.R. Capadona***, D.M. Collard, and A.J. García. Society For Biomaterials (SFB). Memphis, TN; 2005. (podium)
11. *T. A. Petrie*, N.D. Gallant, **J.R. Capadona**, and A.J. García. Materials Research Society (MRS). Boston, MA; 2005. (podium)
12. *T.A. Petrie*, **J.R. Capadona**, and A.J. García. Society For Biomaterials (SFB). Pittsburgh, PA; 2006. (podium)
13. *D.J. Tyler,* C. Weder, S.J. Rowan and **J.R. Capadona**. Materials Research Society (MRS) Spring Meeting. San Francisco, CA; 2006. (podium)
14. ***J.R. Capadona,*** J.P. Harris, S.J. Rowan, D.J. Tyler, and C. Weder. Research ShowCase (Case Western Reserve University). Cleveland, OH; 2006.

15. ***J.R. Capadona,*** J. P. Harris, S. J. Rowan, C. Weder, and D. J. Tyler. Neural Engineering and Rehabilitation Day. Cleveland, OH; 2006.
16. ***J.R. Capadona,*** O. van den Berg, J.P. Harris, S.J. Rowan, C. Weder, and D.J. Tyler. Neural Interfaces Workshop, Besthesda, MD; 2006.
17. ***J.R. Capadona*,** S.J. Rowan, C. Weder, and D.J. Tyler. Materials Research Society (MRS) Spring Meeting. San Francisco, CA; 2007. (podium)
18. ***J.R. Capadona*,** K. Shanmuganathan, O. van den Berg, S.J. Rowan, C. Weder, and D.J. Tyler. Research ShowCase (Case Western Reserve University). Cleveland, OH; 2007.
19. ***J.R. Capadona*,** J.P. Harris, S.J. Rowan, C. Weder, and D.J. Tyler. Neural Engineering and Rehabilitation Lectures, Department of Biomedical Engineering, Case Western Reserve University, Cleveland, OH; 2007. (podium)
20. ***J.R. Capadona***, J.P. Harris, K. Shanmuganathan, S.J. Rowan, C. Weder, and D.J. Tyler. Gordon Research Conference; Biomaterials: Biocompatibility / Tissue Engineering, Holderness School, RI; 2007.
21. ***J.R. Capadona.*** Departmental Seminar, Department of Biomedical Engineering, Case Western Reserve University; 2008. (podium)
22. ***J.R. Capadona*,** K. Shanmuganathan, J.P. Harris, L.A. Capadona, O. van den Berg, S. J. Rowan, C. Weder, and D.J. Tyler. American Chemical Society: National Meeting; New Orleans, LA; 2008. (podium)
23. ***J.R. Capadona*,** K. Shanmuganathan, J.P. Harris, D.J. Tyler, S. J. Rowan, and C. Weder, Society For Biomaterials: Translational Biomaterial Research Symposium, Atlanta, GA; 2008.
24. ***J.R. Capadona*,** K. Shanmuganathan, J.P. Harris, A. Hess, J. Dunning, C.A. Zorman, D.J. Tyler, S. J. Rowan, and C. Weder. Electrochemical Society: 2008 World Meeting, Honolulu, HI; 2008.

SERVICE

Case Western Reserve University

- Department of Biomedical Engineering; Vice Chair Graduate Education Committee (2013 →)
- Department of Biomedical Engineering Open House/Recruiting (Lead 2010-2012)
- Chair, Ford Lecture Committee (2012-2013); Co-Chair (2013-2014)
- Faculty Sponsor and Mentor for Sigma Phi Epsilon
- Case School of Engineering Graduate Education Committee (2012-2013)
- Department of Biomedical Engineering: Graduate Education Committee (2012 – current), Open House Committee (2010-2013), Undergraduate Education Committee (2010-2012),
- *Member of CWRU BME UGEC:* (2010 – 2012) Webmaster, Orthopedic Biomaterials Sequence Head, High School Student Orientation Committee
- Case Western Reserve University, BME ShowCase Judge (2007, 2009)

External Service

- Department of Defense: Adhoc Reviewer (2012)
- Rehabilitation Research, Department of Veterans Affairs Grant Review (2013)
- Society For Biomaterials: Session Chair and Organizer 2011, 2012, 2013
- Biomedical Engineering Society: Abstract Reviewer, Session Chair 2010, 2011, 2012
- Hathaway Brown; Faculty Mentor and Science Fair Judge (2012, 2013)
- L. Stokes CDVAMC Research Space Committee, 2009 - current
- L. Stokes CDVAMC IACUC, member since 2007

- Scientific Reviewer: *ActaBiomaterialia*, *Advanced Materials, ACS Applied Materials & Interfaces, Biomacromolecules*, *Biomaterials, BMES Abstracts, Colloids and Surfaces A, Experimental Cell Research, JACS, Journal of Diabetes Science and Technology*, *Langmuir*, *Small, Soft Matter, Surface Science, J. Biomedical Materials Research: Part B, J. Neurotrauma, Journal of Neural Engineering, , Journal of Neuroscience Methods, PLoS ONE, Neuroscience Letters*

TEACHING AND MENTORING

Graduate Teaching Assistant, Synthetic Organic Chemistry Laboratory, Georgia Institute of Technology, Atlanta, GA, 2000. – Laboratory Component

Design For Biomedical Engineers (EBME 380), Department of Biomedical Engineering, Case Western Reserve University, Mentored Research Team, Fall 2006.

Neural Interfacing (EBME 407), Department of Biomedical Engineering, Case Western Reserve University, two lectures Spring 2008, three lectures Spring 2011, 30% effort Spring 2013.

Biomedical Engineering Laboratory I/II (EBME 318/319), Department of Biomedical Engineering, Case Western Reserve University, Spring 2009-2013.

Introduction to Biomaterials (EBME 306), Department of Biomedical Engineering, Case Western Reserve University, 30% effort Fall 2010, Fall 2011, Fall 2012, Fall 2013.

Physiology and Biophysics (EBME 201), Department of Biomedical Engineering, Case Western Reserve University, 30% effort Fall 2012.

Engineering Ecosystems (FSNA 147), University SAGES, Case Western Reserve University, 100% effort Fall 2013.

Molecular and Cellular Physiology (EBME 451), Department of Biomedical Engineering, Case Western Reserve University, 100% effort Fall 2012.

Academic Advisees (11/5/2013):
Doctoral: 5
Undergraduate: **12** Seniors; **3** Juniors; **3** Sophomores; **14** Freshmen

Graduate Students Mentored:

1. Mr. James P. Harris, Ph.D. Student, Department of Biomedical Engineering, Case Western Reserve University, September 2005 – 2012.
2. Ms. Kelsey Potter, Ph.D. Student, Department of Biomedical Engineering, Case Western Reserve University, June 2009 – Present.
3. Mr. Bo Gui, M.S. Student, Department of Biomedical Engineering, Case Western Reserve University, July 2009 – September 2011.
4. Ms. Jessica Nguyen, Ph.D. Student, Department of Biomedical Engineering, Case Western Reserve University, August 2010 – Present.
5. Ms. Madhu Ravikumar, Ph.D. Student, Department of Biomedical Engineering, Case Western Reserve University, August 2010 – Present.

6. Mr. John Hermann, Ph.D. Student, Department of Biomedical Engineering, Case Western Reserve University, June 2012 – Present.
7. Mr. Jinlge Jiang, Ph.D. Student, Department of Biomedical Engineering, Case Western Reserve University, August 2012 – Present. Academic Advisor
8. Mr. Tyler Freeto, BS-MS Student, Department of Biomedical Engineering, Case Western Reserve University, April 2013 – Present
9. Mr. Monkia Goss, BS-MS Student, Department of Biomedical Engineering, Case Western Reserve University, September 2013 – Present

Undergraduate Students Mentored:

1. Ms. Chiderah Okoye, Undergraduate Research, Department of Biomedical Engineering, Case Western Reserve University, May 2009 – December 2009.
2. Mr. Robert Jiang, Undergraduate Student, Department of Biomedical Engineering, Case Western Reserve University, October 2009 – December 2010. (SOURCE)
3. Mr. Bharath Velagapudi, Undergraduate Student, Department of Biomedical Engineering, Case Western Reserve University, March 2010 – June 2012.
4. Mr. Wade Self, Undergraduate Student, Department of Biomedical Engineering, Case Western Reserve University, January 2011 – January 2012.
5. Ms. Amy Buck, Undergraduate Student, Department of Biomedical Engineering, Case Western Reserve University, August 2011 – May 2013.
6. Mr. Daniel Hageman, Undergraduate Student, Department of Biomedical Engineering, Case Western Reserve University, August 2011 – Present.
7. Mr. Kyle Householder, Undergraduate Student, Department of Biomedical Engineering, Case Western Reserve University, February 2012 – June 2013.
8. Mr. Asheq Ahmed, Undergraduate Student, Department of Biomedical Engineering, Case Western Reserve University, February 2012 – June 2012.
9. Ms. Smrithi Sunil, Undergraduate Student, Department of Biomedical Engineering, Case Western Reserve University, February 2012 – Present.
10. Ms. Shruti Sudhakar, Undergraduate Student, Department of Biomedical Engineering, Case Western Reserve University, August 2012 – Present.
11. Ms. Kelly Buchanan, Undergraduate Student, Department of Biomedical Engineering, Case Western Reserve University, September 2012 – Present.
12. Ms. Gabriela Chandra, Undergraduate Student, Department of Biomedical Engineering, Case Western Reserve University, September 2012 – December 2012.
13. Mr. James Black, Undergraduate Student, Department of Biomedical Engineering, Case Western Reserve University, September 2012 – May 2013.
14. Mr. William Tomaszewski, Undergraduate Student, Department of Biomedical Engineering, Case Western Reserve University, October 2012 – Present.
15. Mr. Jake Anna, Undergraduate Student, Department of Biomedical Engineering, Case Western Reserve University, December 2012 – May 2013.
16. Mr. Tyler Srail, Undergraduate Student, Department of Biomedical Engineering, Case Western Reserve University, June 2013 – Present
17. Mr. Daniel Joo You Park, Undergraduate Student, Department of Biomedical Engineering, Case Western Reserve University, June 2013 – Present
18. Mr. Wade Stewart, Undergraduate Student, Department of Biomedical Engineering, Case Western Reserve University, June 2013 – Present
19. Mr. Tyler Freeto, BS-MS Student, Department of Biomedical Engineering, Case Western Reserve University, April 2013 – Present

20. Mr. Martin Gitomer, Undergraduate Student, Department of Biomedical Engineering, Case Western Reserve University, June 2013 – Present
21. Mr. Will Meador, Undergraduate Student, Department of Biomedical Engineering, Case Western Reserve University, August 2013 – Present

Case Thesis Committees:

1. James Harris – Ph.D. Committee (Advisor – D. Tyler; BME)
2. Smruta Koppaka – Ph.D. Committee (Advisor – D. Tyler; BME)
3. Bo Gui – M.S. Committee (Advisor – J. Basilion; BME)
4. Kelsey Potter – Ph.D. Committee (Advisor – J. Capadona; BME)
5. Jessica Nguyen – Ph.D. Committee (Advisor – J. Capadona; BME)
6. Justin Fox – Ph.D. Committee (Advisor – S. Rowan; Macromolecular Science & Eng.)
7. Kathy Ward – B.S., M.S. Committee (Advisor – D. Taylor; BME)
8. Madhuthima Ravikumar – Ph.D. Committee (Advisor – J. Capadona; BME)
9. John Hermann – Ph.D. Committee (Advisor – J. Capadona; BME)
10. Debra (Barkauskas) Sim – Ph.D. Committee (Advisor – A. Huang; BME)
11. Jingle Jiang – Ph.D. Committee (Advisor – D. Taylor; BME)
12. Megan Lashof-Sullivan – Ph.D. Committee (Advisor – E. Lavik; BME)
13. Nandula Wanasekara – Ph.D. Committee (Advisor – L. Korley; Macromolecular Science & Eng.)

Awards / Achievements by My Students:

- October 2013 - Kelsey Potter wins "Best Student Oral Presentation Award" at theat the Society For Biomaterials Regional Meeting in Clevleand, OH
- October 2013 - Jessica Nguyen wins "2nd Place in the Student Poster Presentation Award"competition at the Society For Biomaterials Regional Meeting in Clevleand, OH
- September 2013 - Madhu Ravikumar earned best presentation award for the Neural Engineering Track at the Biomedical Engineering Society Meeting in Seattle, WA.
- May 2013 –Shruti Sudhakar earns Provost Summer Undergraduate Research Grant
- May 2013 – William Tomaszewski earns Provost Summer Undergraduate Research Grant
- April 2013 – Wade Self wins The Biomedical Engineering Research and Engineering Award
- April 2013 – Dan Hageman wins Senior Project Award (as a Junior)
- March 2013 – Megan Callanan wins Poster of Excellence from the U.S. Air Force, Hathaway Brown High School
- March 2013 – Aarathi Sahadevan wins Poster of Excellence from the U.S. Army, Hathaway Brown High School
- December 2012 – Kyle Householder received 1st Place in the Intersections: SOURCE Poster Presentation
- December 2012 – Dan Hageman received 2nd Place in the Intersections: SOURCE Poster Presentation
- November 2012 – Dan Hageman received Sigma Phi Epsilon National Competition Scholar Award
- October 2012 – Jessica Nguyen win Biomedical Engineering Society STAR Travel Award to present at International Meeting
- October 2012 – Jessica Nguyen and Kelsey Potter win Society of Biomaterials Travel Awards to present at International Meeting
- October 2012 - Capadona group earned 7 oral presentations and 2 poster presentations at the Biomedical Engineering Society Meeting in Atlanta, GA.

- July 2012 – Kelsey Potter, Amy Buck and Wade Self have paper accepted to the Journal of Neural Engineering
- June 2012 – Wade Self wins Spencer Scholar Award
- June 2012 – Jessica Nguyen and Kelsey Potter win NIC Diversity Travel Awards
- May 2012 – Madhuthima Ravikumar wins Jonathan Leis Award
- May 2012 – Amy Buck and Dan Hageman earn Case Alumni Association Scholarship
- May 2012 – Kelsey Potter wins Art of Science Contest
- May 2012 – Dan Hageman earns Provost Summer Undergraduate Research Grant
- May 2012 – Kyle Householder earns Provost Summer Undergraduate Research Grant
- May 2012 – Wade Self wins Cristina A. Camardo Memorial Award
- May 2012 – Bharath Velagapudi wins The Biomedical Engineering Research and Engineering Award
- May 2012 – Bharath Velagapudi wins Senior Project Award
- May 2012 – Wade Self earns Mayo Clinic Undergraduate Research Fellowship
- April 2012 – Dan Hageman wins 1st place in the SOURCE Symposium Engineering Oral Competition
- March 2012 – Megan Callanan wins Best New Research Project Award, Hathaway Brown High School
- March 2012 – Jessica Nguyen wins Honorable Mention in the National Science Foundation GRFP
- December 2011 – Bharath Velagapudi wins 2nd place in SOURCE poster competition
- June 2011 – Bharath Velagapudi wins 1st place in PiNO poster competition
- June 2011 – Madhu Ravikumar wins 3rd place in PiNO poster competition
- May 2011 – Wade Self earns SOURCE Undergraduate Research Fellowship