

## *Jeffrey R. Capadona Curriculum Vitae Summary*

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### **EDUCATION**

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**Doctor of Philosophy**, School of Chemistry and Biochemistry, Minor in Bioengineering,  
Georgia Institute of Technology, Atlanta, GA, 2000-2005

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### **CURRENT POSITIONS**

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**PROFESSOR** 2019–Present  
Associate Chair, Graduate Education  
Department of Biomedical Engineering, Case Western Reserve University

**RESEARCH HEALTH SCIENTIST** 2005–Present  
L. Stokes Cleveland Department of Veterans Affairs Medical Center

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### **RESEARCH**

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- **Total:** \$23.5 M; **PI:** \$10.9 M; **Co-PI/I:** \$12.60 M

#### **Publication History:**

**Total Publications:** 65, **Total Citations:** >6837 **h-index:** 32; **i10-index:** 50

- Published in: *Science, Nature Nanotechnology, Scientific Reports, Nature Materials, Advanced Materials, Advanced Functional Materials, Biomaterials, JACS, Biomacromolecules, Langmuir, Journal of Neural Engineering, Progress in Polymer Science., J. Materials Chemistry, J. Neuroscience Methods, J. Materials Science, Frontiers in Bioengineering and Biotech.*

**Presentations:** >125 research presentations by group since joining CWRU (2010); 23 invited

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### **SERVICE**

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#### **Department/School/University:**

- Chair: Graduate Education Committee (2014 →), Ford Lecture Committee (2012-14)
- Chair: Undergraduate Recruitment for Dept. BME (2010-2012)
- IACUC Member: L. Stokes Cleveland VA (2007-2015, 2016→); CWRU (2017 →)
- CWRU: Faculty Senate Grad Com (2018 →) Academic Integrity Board (2015 →) CSE Graduate Education Committee (2012-2013, 2019 →)
- Provost's Committee on Campus Culture & Environment (2017 →)

#### **National/International**

- *Editorial:* Guest Editor: *Frontiers in Neuroscience* (2018-2019); IEEE EMBS Associate Editor (2015 →); Review Editor *Frontiers in Bioengineering and Biotechnology* (2017 →)
  - *Grant reviews:* NSF, NIH, DoD, VA, FDA
  - *Conferences:* Organized and Co-Chair Inaugural GRC on Neuroelectronic Interfaces; Advisory Board for 11<sup>th</sup> International Conference "Medical Applications of Novel Biomaterials and Nanotechnology" of CIMTEC 2016; Session Chair at Society For Biomaterials (SIG Treasurer), Cleveland Neural Engineering Workshop, and Biomedical Engineering Society
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### **TEACHING**

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- Courses: Introduction to Biomedical Materials (Dept. UG Core); Neural Interfacing (Grad), First Year Technical Writing Course for Engineering Students (Univ. Core)
  - Consistently evaluated above average for Department and School
  - Teaching ratings consistently improved over time
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### **MENTORING**

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**Post-Docs:** Taken: 5; Current 2; **PhD Students:** Taken: 12; Graduated 5; Current 7; Thesis Committees for 19 students; **MS Students:** Taken: 3; Graduated 3; Current 0; **UG research mentees:** Taken: 70<

**Jeffrey R. Capadona, Ph.D.***Curriculum Vitae*[jeffrey.capadona@case.edu](mailto:jeffrey.capadona@case.edu)

Professor

Associate Chair, Graduate Education  
 Department of Biomedical Engineering  
 Case Western Reserve University  
 2071 Martin Luther King Jr. Drive  
 Cleveland, OH 44106  
 Office: 216-368-5486

**EDUCATION**

**Doctor of Philosophy**, School of Chemistry and Biochemistry, Minor in Bioengineering,  
 Georgia Institute of Technology, Atlanta, GA, 2000-2005

Thesis: Surface-Directed Assembly of Fibrillar Extracellular Matrices

Advisors: Bioengineering: Dr. Andrés J. García; Chemistry: Dr. David M. Collard

**Bachelor of Science**, Chemistry, Saint Joseph's College, Rensselaer, IN, 1996-2000

**PROFESSIONAL EXPERIENCE**

**TENURED FULL PROFESSOR** 2019–Present

Associate Chair, Graduate Education

Department of Biomedical Engineering, Case Western Reserve University

**TENURED ASSOCIATE PROFESSOR** 2015–2019

Associate Chair, Graduate Education

Department of Biomedical Engineering, Case Western Reserve University

**TENURE TRACK ASSISTANT PROFESSOR** 2010–2015

Associate Chair, Graduate Education

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

**POST-DOCTORAL SCIENTIST**

2005 – 2008

*Case Western Reserve University**Macromolecular Science and Engineering: Dr. C. Weder and S. Rowan**Biomedical Engineering: Dr. D. Tyler*

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**PROFESSIONAL AFFILIATIONS**

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

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**ACADEMIC HONORS AND AWARDS**

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- AIMBE Fellow, Class of 2017
- 2015 Crain's Forty Under 40, Crain's Cleveland Business
- Journal of Materials Chemistry – B: Materials for biology and medicine 2014 Emerging Investigator
- Bruce Jackson, MD, Award for Excellence in Undergraduate Mentoring (2014 Finalist)
- Outstanding Junior Faculty Poster Award – Gordon Research Conference on Biomaterials and Tissue Engineering (2013; 2nd place)
- 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, 2013)
- 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

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**RESEARCH PUBLICATIONS**


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**As of 1/13/2020 (google scholar):**

<b>Total Publications:</b>	<b>65</b>	<b>h-index:</b>	<b>32</b>
<b>Total Citations:</b>	<b>&gt;6927</b>	<b>i10-index:</b>	<b>51</b>

**CWRU / VA Faculty: Drafted, Near Submission****CWRU / VA Faculty: Under Review**

68. S. Mahajan, J.K. Hermann, H.W. Bedell, J.A. Sharkins, L. Chen, K. Chen, S.M. Meade, C.S. Smith, J. Rayyan, H. Feng, Y. Kim, M. Schiefer, D.M. Taylor, **J.R. Capadona**\*, E.S. Ereifej.\* “Towards Standardization of Electrophysiology and Computational Tissue Strain in Rodent Intracortical Microelectrode Models.” *Frontiers in Bioengineering and Biotechnology*. **2020**. (Under Review).
67. E.S. Ereifej, Y. Li, M. Goss, Y. Kim, S.M. Meade, K. Chen, J. Rayyan, H. Feng, K. Dona, J. MacMahon, D. Taylor, J. Sun, **J.R. Capadona**. “Investigating the correlation between motor function, neuroinflammation and recording metrics in the performance of intracortical microelectrode implanted in motor cortex.” *Scientific Reports* **2020**. (Under Revision).
66. C. R. Esquibel, K.D. Wendt, H.C. Lee, J. Gaire, A. Shoffstall, S.K. Brodnick, K.J. Otto, J.R. Capadona, J.C. Williams, K.W. Eliceiri. “Second harmonic generation imaging of collagen in chronically implantable electrodes in brain tissue” *Frontiers in Neuroscience*. **2020**. (Under Review).

**CWRU / VA Faculty: Accepted/In Press****CWRU / VA Faculty: Published**

65. H.W. Bedell, N.J. Schaub, **J.R. Capadona**\*, E.S. Ereifej. “Differential expression of genes involved in the acute innate immune response to intracortical microelectrodes.” *Acta Biomaterialia*. **2020**, 102: 205-219.
64. L.E. Gonzalez Reyes, C-C Chiang, M. Zhang, J. Johnson, M.A. Tamez, N.H. Couturier, N. Reddy, L. Starikov, **J.R. Capadona**, A.H. Kottmann, and D.M. Durand. “Sonic Hedgehog is expressed by hilar mossy cells and regulates cellular survival and neurogenesis in the adult hippocampus.” *Scientific Reports*. **2019**, 9:1: 1-20.
63. S.C. Lindner, M. Yu, **J.R. Capadona**, A.J. Shoffstall. “A graphical user interface to assess the neuroinflammatory response to intracortical microelectrodes.” *J. Neurosci. Methods*. **2019**, 317:141-148. doi: 10.1016/j.jneumeth.2019.01.003.
62. **J.R. Capadona**\*, A.J. Shoffstall, J.J. Pancrazio. “Neuron-like neural probes.” *Nature Materials*. **2019** (<https://doi.org/10.1038/s41563-019-0312-9>).
61. H.W. Bedell, S. Song, X. Li, E. Molinich, S. Lin, A.J. Shoffstall, W.E. Voit, J.J. Pancrazio, **J.R. Capadona**. “Understanding the effects of both CD14-mediated innate immunity and device/tissue mechanical mismatch in the neuroinflammatory response to intracortical microelectrodes.” *Frontiers in Neuroscience*. **2018**, 12, Article 772. doi: 10.3389/fnins.2018.00772
60. J.K. Hermann **J.R. Capadona**. “Understanding the Role of Innate Immunity in the Response to Intracortical Microelectrodes.” *Critical Reviews in Biomedical Engineering*. **2018**, 46(4): 341-367.

59. A.J. Shoffstall, M. Ecker, V. Danda, M. Yu, J.E. Paiz, E. Mancuso, W.E. Voit, J.J. Pancrazio, J.R. Capadona. “Characterization of the Neuroinflammatory Response to Thiol-ene/Acrylate Shape Memory Polymer Coated Intracortical Microelectrodes.” *Micromachines*. **2018**, 9,486. doi:10.3390/mi9100486
58. R.R. Iyer, N. Gorelick, K. Carroll, A. Blitz, S. Beck, A. Monroe, B. Tyler, S.T. Zuckerman, J.R. Capadona, H.A. von Recum, M.G. Luciano. “Evaluation of an in vivo model for ventricular shunt infection: a pilot study using a novel antimicrobial-loaded polymer.” *Neurosurgery*. **2018**, Aug3: 1-9, doi: 10.3171/2018.1.
57. K.R. Dona, M. Goss-Varley, A.J. Shoffstall, J.R. Capadona. “A Novel Single Animal Motor Function Tracking System Using Simple, Readily Available Software.” *Journal of Visualized Experiments (JoVE)* **2018**, 138, e57917, doi:10.3791/57917.
56. M. Goss-Varley, A.J. Shoffstall, K.R. Dona, J.A. McMahon, S.C. Lindner, E.S. Ereifej, J.R. Capadona. “Rodent Behavioral Testing to Assess Functional Deficits Caused by Microelectrode Implantation in the Rat Motor Cortex.” *Journal of Visualized Experiments (JoVE)* **2018**, e57829, doi:10.3791/57829.
55. H.W. Bedell, J.R. Capadona. “Anti-inflammatory approaches to mitigate the neuroinflammatory response to brain-dwelling intracortical microelectrodes.” *J. Immunol. Sci.* **2018**, 2(4): 15-21.
54. J.K. Hermann, S. Lin, A. Soffer, C. Wong, V. Srivastava, G. Protasiewicz, S.M. Selkirk, R.H. Miller, J.R. Capadona. “The role of toll-like receptor 2 and 4 innate immunity pathways in intracortical microelectrode-induced neuroinflammation.” *Frontiers in Bioengineering and Biotechnology*. **2018**, 6:113 doi: 10.3389/fbioe.2018.00009.
53. A.J. Shoffstall, J.R. Capadona. “Bio-Inspired Materials and Systems for Neural Interfacing.” *Current Opinions in Biomedical Engineering* **2018**, 6:110-119. doi.org/10.1016/j.cobme.2018.05.002.
52. H.W. Bedell, J.K. Hermann, M. Ravikumar, S. Lin, A. Rein, X. Li, E. Molinich, P. Smith, S. Sidik, D.M. Taylor, J.R. Capadona. “Targeting CD14 on blood derived cells improves chronic intracortical microelectrode performance.” *Biomaterials*. **2018**, 163, p 163-173; doi.org/10.1016/j.biomaterials.2018.02.014.
51. E.S. Ereifej, G.M. Rial, J.K. Hermann, C.S. Smith, S.M. Meade, J.M. Rayyan, K. Chen, He Feng, J.R. Capadona. “Implantation of Neural Probes in the Brain Elicits Oxidative Stress.” *Frontiers in Bioengineering and Biotechnology*. **2018**, 6:9 p1-12; doi: 10.3389/fbioe.2018.00009.
50. A.J. Shoffstall, S. Srinivasan, M. Willis, A. Stiller, M. Ecker, W.E. Voit, J.J. Pancrazio, J.R. Capadona. “A Mosquito Inspired Strategy to Implant Microprobes into the Brain.” *Scientific Reports*. **2018**, 8:122; doi:10.1038/s41598-017-18522-4.
49. J.K. Hermann, M. Ravikumar, A.J. Shoffstall, E. Ereifej, J. Chang, A. Soffer, C. Wong, V. Srivastava, P. Smith, G. Protasiewicz, J. Jiang, S. Selkirk, R. Miller, S. Sidik, N. Ziats, D. Taylor, J.R. Capadona. “Inhibition of the Cluster of Differentiation 14 Innate Immunity Pathway with IAXO-101 Improves Chronic Microelectrode Performance” *Journal of Neural Engineering*. **2018**, 15, 025002; doi.org/10.1088/1741-2552/aaa03e.
48. A.J. Shoffstall, J. Paiz, D. Miller, G. Rial, M. Willis, D. Mendez, S. Hostler, J.R. Capadona. “Potential for Thermal Damage to the Blood-Brain Barrier during Craniotomy Procedure: Implications for Intracortical Recording Microelectrodes.” *Journal of Neural Engineering*. **2018**, 15, 034001; doi.org/10.1088/1741-2552/aa9f32.
47. M. Goss-Varley, K.R. Dona, J.A. McMahon, A.J. Shoffstall, E.S. Ereifej, Sydney C. Lindner, J.R. Capadona. “Microelectrode implantation in motor cortex causes fine motor deficit: Implications on potential considerations to Brain Computer Interfacing and Human Augmentation.” *Scientific Reports*. **2017**. 7:15254; doi:10.1038/s41598-017-15623-y.

46. E.S. Ereifej, C.S. Smith, S.M. Meade, K. Chen, H. Feng, J.R. Capadona. “The Neuroinflammatory Response to Nanopatterning Parallel Grooves into the Surface Structure of Intracortical Microelectrodes.” *Adv. Funct. Mater.* **2017**, 1704420; doi.org/10.1002/adfm.201704420
45. E.S. Ereifej, S. Meade, C. Smith, K. Chen, N. Kleinman, and J.R. Capadona. “Status Epilepticus due to Intraperitoneal Injection of Vehicle Containing Propylene Glycol in Sprague Dawley Rats.” *Veterinary Medicine International.* **2017**, Article ID 1757059, 6 pages. doi:10.1155/2017/1757059.
44. M. Ecker, V. Danda, A.J. Shoffstall, S.F. Mahmood, A. Joshi-Imre, C.L. Frewin, T.H. Ware, J.R. Capadona, J.J. Pancrazio, W.E. Voit. “Sterilization of thiol-ene/acrylate based shape memory polymers for biomedical applications.” *Macromolecular Materials and Engineering.* **2017**, 302, 1600331-1600341.
43. K.M. Kovach, D.W. Kumsa, V. Srivastava, E.M. Hudak, D.F. Untereker, S.C. Kelley, H.A. von Recum, J.R. Capadona. “High-Throughput *In Vitro* Assay to Evaluate the Cytotoxicity of Liberated Platinum Compounds for Stimulating Neural Electrodes.” *Journal of Neuroscience Methods.* **2016**, 273, 1-9.
42. M.L. Knothe Tate, M. Detamore, J.R. Capadona, A. Wooley, U. Knothe. “Engineering and Commercialization of Human-Device Interfaces, from Bone to Brain.” *Biomaterials.* **2016**, 95, 35-46.
41. J.K. Nguyen, M. Jorfi, K.L. Buchanan, D.J. Park, E.J. Foster, D.J. Tyler, S.J. Rowan, C. Weder, J.R. Capadona. “Influence of resveratrol release on the tissue response to mechanically adaptive cortical implants.” *Acta Biomaterialia;* **2016**, 29, 81-93.
40. K.A. Potter-Baker, W.G. Stewart, W.H. Tomaszewski, W.D. Meador, C.T. Wong, N.P. Ziats, J.R. Capadona. “Implications of Chronic Daily Anti-Oxidant Administration on the Inflammatory Response to Intracortical Microelectrodes.” *Journal of Neural Eng.* **2015**, 12, 046002.
39. A. Sridharan, J.K. Nguyen, J.R. Capadona, and J. Muthuswamy. “Compliant Intracortical Implants Reduce Strains and Strain Rates in Brain Tissue *In Vivo*.” *Journal of Neural Eng.* **2015**, 12, 036002.
38. K.A. Potter-Baker\*, J.R. Capadona. “Reducing the “Stress”: Antioxidative Therapeutic and Material Approaches May Prevent Intracortical Microelectrode Failure.” *ACS Macro Letters* **2015**, 4:3, 275-279.
37. K. Kovach, M.A. Labarbera, M.C. Moyer, B.L. Cmolik, E. Van Lunteren, A. Sen Gupta, J.R. Capadona, J. Potkay. “*In Vitro* and *In Vivo* Evaluation of a Biomimetic, Hemocompatible, Microfluidic Artificial Lung.” *Lab on a Chip* **2015**, 15, 1366-1376.
36. M. Jorfi<sup>#</sup>, J.L. Skousen<sup>#</sup>, C. Weder, J.R. Capadona. “Progress Towards Biocompatible Intracortical Microelectrodes for Neural Interfacing Applications.” *Journal of Neural Engineering* **2015**, 12, 011001. (# = denotes equal first authorship) **Selected Journal of Neural Engineering Highlights of 2015.**
35. M. Ravikumar, S. Sunil, J. Black, D. Barkauskas, A.Y. Haung, R.H. Miller, S.M. Selkirk, and J.R. Capadona. “The Roles of Blood-derived Macrophages and Resident Microglia in the Neuroinflammatory Response to Implanted Intracortical Microelectrodes.” *Biomaterials* **2014**, 35:10, 8049-8064.
34. J.K. Nguyen, D.J. Park, J.L. Skousen, A.E. Hess-Dunning, D.J. Tyler, S.J. Rowan, C. Weder, and J.R. Capadona. “Mechanically-Compliant Intracortical Implants Reduce the Neuroinflammatory Response.” *Journal of Neural Eng.* **2014**, 11:5 056014.

33. A. Hess-Dunning, L. Hsu, **J.R. Capadona**, C. Weder, S.J. Rowan, D.J. Tyler, and C.A. Zorman. "Microscale Characterization of Mechanically Adaptive Polymer Nanocomposite with Cotton-Derived Cellulose Nanocrystals for Implantable BioMEMS." *IEEE Journal of Microelectromechanical Systems*. **2014**.
32. K.A. Potter-Baker<sup>1</sup>, M. Ravikumar<sup>1</sup>, A. Burke, W. Meador, K. Householder, A. Buck, S. Sunil, W. Stewart, J. Anna, W. Tomaszewski, **J.R. Capadona**. "A Comparison of Neuroinflammation to Implanted Microelectrodes in Rat and Mouse Models." *Biomaterials*, **2014**, *34*; 5637-5646. (1 = denotes equal first authorship)
31. K.A. Potter, J.K. Nguyen, K. Kovach, M. Gitomer, T.W. Srail, W.G. Stewart, J.L. Skousen, **J.R. Capadona**. "Development of Superoxide Dismutase Mimetic Surfaces to Reduce Accumulation of Reactive Oxygen Species for Neural Interfacing Applications" *Journal of Materials Chemistry B*; **2014**, *B 2:16*, 2248.
30. K. Kovach, **J.R. Capadona**, A. Sen Gupta, J. Potkay. "The Effects of PEG-Based Surface Modification of PDSM Microchannels on Hemocompatibility" *Journal of Biomedical Materials Research B*, **2014**, doi: 10.1002/jbm.a.35090.
29. 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." *Acta Biomaterialia*; **2014**, *10:2014*, 2209-2222.
28. 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." *Journal of Materials Chemistry B 2014 Emerging Investigators Themed Issue*; **2014**, *2:17*, 2517-2529.
27. 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.
26. 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." *Journal of Online Visual Experiments*, **2013**, e50078 (doi:10.3791/50078).
25. 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." *Journal of the American Chemical Society*, **2013**, *135:13*, 5167.
24. M. Ravikumar, S. Jain, R.H. Miller, **J.R. Capadona**, S.M. Selkirk. "An Organotypic Spinal Cord Slice Culture Model to Assess Neurodegeneration." *Journal of Neuroscience Methods*, **2012**, *211:2*, 280-288.
23. 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." *Journal of Neural Eng.* **2012**, *9*, 046020.
22. **J. R. Capadona**, D.J. Tyler, C.A. Zorman, S. J. Rowan, and C. Weder, "Mechanically Adaptive Nanocomposites for Neural Interfacing," *Materials Research Society Bulletin – Materials for Neural Interfacing*. **2012**, *37:6*, 557-561.
21. K.A. Potter, J.S. Simon, B. Velagapudi, **J.R. Capadona**. "Reduction of autofluorescence at the microelectrode-cortical tissue interface improves antibody detection." *Journal of Neuroscience Methods*. **2012**, *203:1*, 96-105.
20. 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." *Journal of Neural Eng.* **2011**, *8*, (066011).

19. 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.” *Journal of Neural Eng.* **2011**, *8*, (046010). [Highlights Collection for 2011](#).
18. 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. Micromechanical Microengineering* **2011**, *21*; 054009 (<http://dx.doi.org/10.1088/0960-1317/21/5/054009>).

#### **CWRU / VA Post-doc:**

17. 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.” *Journal of Materials Science* **2011**, *46*, 5672-5679.
16. 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].
15. 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.” *Journal of Materials Science* **2010**, *45:1*, 1-33 [ISSN: 0022-2461].
14. K. Shanmuganathan, **J.R. Capadona**, S.J. Rowan, and C. Weder. “Bio-inspired mechanically-adaptive nanocomposites derived from cotton cellulose whiskers.” *Journal of Materials Chemistry* **2010**, *20*; 180–186 [ISSN: 0959-9428].
13. K. Shanmuganathan, **J.R. Capadona**, S.J. Rowan, and C. Weder. “Biomimetic Mechanically Adaptive Nanocomposites.” *Progress in Polymer Science* **2010**, *35*, 212–222 [ISSN: 0079-6700].
12. K. Shanmuganathan, **J.R. Capadona**, S.J. Rowan, and C. Weder. “Stimuli-Responsive Mechanically Adaptive Polymer Nanocomposites.” *Applied Materials & Interfaces*. **2009**, *2:1*, 165-174 [ISSN: 1944-8244].
11. 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.
10. **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].
9. **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].
8. **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 Nanotechnology*. **2007**, *2:12*, 765–769 (*Cover*) [ISSN: 1748-3387].
7. O. van den Berg, M. Schroeter, **J.R. Capadona**, and C. Weder. “Nanocomposites based on cellulose whiskers and (semi)conducting conjugated polymers.” *Journal of Materials Chemistry* **2007**; *17:26*, 2746–2753 [ISSN: 0959-9428].
6. 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].



**Georgia Institute of Technology / Graduate Work:**

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].
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].
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 extracellular matrices.” *Advanced Materials* **2005**, 17; 2604–2608 [ISSN: 0935-9648].
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]
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].

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**Invited Book Chapters**

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4. A.J. Shoffstall, L. Yue, M. Humayan, P.H. Peckham, and **J.R. Capadona**.\* Chapter 74, “*Bioelectronic neural Implants*,” Biomaterials Science, 3<sup>rd</sup> Edition; Elsevier Ltd. 2020.
3. A.J. Shoffstall and **J.R. Capadona**\*. Chapter 28, “*Prospects for a Robust Cortical Recording Interface*,” Neuromodulation, 2<sup>nd</sup> Edition; Elsevier Ltd. 2018.
2. **J.R. Capadona**\* and P.D. Marasco. Chapter 33, “*Brain response to neural prostheses*,” Textbook of Neural Repair and Rehabilitation, 2<sup>nd</sup> Edition; Cambridge University Press, 2014.
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.

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**PATENTS and APPLICATIONS**

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C. Weder, S.J. Rowan, **J.R. Capadona**, D.J. Tyler, K. Shanmuganathan, O. van den Berg “Dynamic Mechanical Polymer Nanocomposites.”

Patent Application Number(s): 13/718, 027

Filing Date: December 18, 2012

Issue Date: February 16, 2016

Patent Number(s): US 9,260,573 B2

Patent Assignee(s) and Codes(s): UNIV CASE WESTERN RESERVE (UCWR-C)

**J.R. Capadona**, S.J. Rowan, K. Shanmuganathan, D.J. Tyler, O. van den Berg, C. Weder, “Dynamic Mechanical Polymer Nanocomposites.”

Patent Application Number(s): 12/384, 729

Publication Number: US 2009/0318590 A1

Filing Date: April 8, 2009

Issue Date: January 1, 2013

Patent Assignee(s) and Codes(s): UNIV CASE WESTERN RESERVE (UCWR-C)

C. Weder, **J.R. Capadona**, and O. van den Berg. “Production of polymer nanocomposite involves forming nanoparticle-containing gel having nanoparticle network, combining gel with solution including matrix polymer, and drying the composition.”

Patent Number(s): US2008242765-A1

Patent Assignee(s) and Codes(s): UNIV CASE WESTERN RESERVE (UCWR-C)

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## **GRANTS / FUNDING**

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### **Active PI / Co-PI Funding**

Grant # 2635723 (Capadona) 04/01/2019-3/30/2024

NIH NINDS (R01) \$2,500,000 DC

*Characterizing and mitigating the role of oxidative damage in microelectrode failure*

This project seeks to develop an antioxidative surface coating to prevent premature failure of stimulating intracortical microelectrode which results from oxidative damage to electrode materials and oxidative damage to neural tissue. We will additionally investigate the role of oxidative damage as a function of device rigidity.

**Role: Co-PI** (Pancrazio)

Grant # A3083 (Capadona) 04/01/2019 - 03/31/2023

VA RR&D Merit Review \$1,100,000 DC

*Hybrid Drug-Eluting Microfluidic Neural Probe for Chronic Drug Infusion*

This project seeks to develop a drug-eluting intracortical microelectrode from dynamically softening polymer nanocomposite materials. The implants will release the antioxidant Resveratrol, to investigate the impact of target two important mechanisms for microelectrode failure.

**Role: Co-PI** (Hess-Dunning)

Grant # A3077 (Capadona) 01/01/2019 - 12/31/2023

VA RR&D Research Career Scientist \$590,184 DC

*RR&D Research Career Scientist Award Application*

This award is not tied to a project and is granted to top-performing VA investigators in recognition of career performance and trajectory within the VA, RR&D service.

**Role: PI**

Grant # A2611 (Capadona) 07/01/2018 - 12/30/2021

VA RR&D Merit Review \$962,327 DC

*Antioxidative Microelectrodes to Improve Neural Recording Performance*

This project seeks to develop an antioxidative surface coating to prevent premature failure of intracortical microelectrode which results from oxidative damage to electrode materials and oxidative damage to neural tissue.

**Role: PI**

### **Active Co-I Funding**

Grant # A1871-C (Triolo) 01/01/2015 - 12/31/2019 (renewed for 5 additional years)

VA RR&D Research Center of Excellence \$ 5,000,000 DC

*Advanced Platform Technology Center of Excellence*

Together with basic science and engineering faculty at CWRU, and other notable institutions like the Cleveland Clinic, we leverage the latest advances in microfabrication, microelectronics and microsystems, material science, neuroscience and neural engineering, and additive manufacturing, and apply them to the highest medical priorities of the Veterans Health Administration. Our efforts are concentrated in four primary areas: Enabling Technologies, Neural Interfacing, Health Monitoring/Maintenance and Prosthetics/Orthotics. “Enabling Technologies” refers to the new materials, microfabrication processes, and encapsulation, encoding or sensing methods that make many otherwise intractable clinical applications not only possible, but practical.

**Role: Co-I**

Grant # 1743475 (Korley) 09/01/2017 - 08/31/2022  
 National Science Foundation \$5,500,000 DC  
*PIRE: Bio-Inspired Materials and Systems*

The PIRE is a multi-institutional International collaboration focusing on the molecular design of materials, with inspirations from natural systems either in the design, or final system.

**Role: Co-I**

### Completed PI Funding

Grant # 11766813 (Capadona) 09/01/2015 - 08/31/2019 (NCE)  
 DoD CDMRP \$678,532 DC  
*The Effect of the Elimination of Micromotion and Tissue Strain on Intracortical Device Performance*

In this study, we will systematically examine the effects of softening microelectrodes, which reduce the micromotion and tissue strain effects, on the neuroinflammatory response and recording capability of chronically implanted intracortical microelectrodes arrays. When successful, this study will for the first time answer a 30+ year old hypothesis of the field, and provide a framework leading to the development of new generations of implantable cortical interfaces capable of long-term reliability.

**Role: Co-PI** (Pancrazio)

R01 NS082404 (Capadona) 08/01/2013 - 07/31/2019 (NCE)  
 NIH NINDS \$2,302,414 DC  
*CD14 facilitates neural device integration and performance*

The central hypothesis is that CD14 inhibition will attenuate microelectrode encapsulation and neuronal die-back, resulting in reduced tissue impedance and more stable and higher numbers of isolated unit recordings from implanted microelectrodes. The current proposal will build from the PI's preliminary results indicated the role of CD14 in neural device-associated inflammation. A transgenic rodent intracortical microelectrode model will be used to complete the characterization of the role of CD14 in neuroinflammation. Additionally, novel CD14 antagonist will be further investigated as a therapeutic means to inhibit device-associated neuroinflammation and improve the longevity of device performance. The successful completion of this project will provide clear support for our central hypothesis, and will help facilitate the translation of this promising technology to treat patients.

**Role: PI**

Grant # B1495-R (Capadona) 07/01/2014 - 06/30/2018  
 VA RR&D Merit Review \$1,094,716 DC  
*Resveratrol Prevents Microelectrode Mediated Neurodegeneration*

This project built on our earlier findings that acute attenuation of reactive oxygen species (ROS) accumulation at the intracortical microelectrode – tissue interface prevents neurodegeneration and device-associated inflammation. In the proposed study, we investigated the effects of sustained delivery of Resveratrol to improve the quality and longevity of chronic neural recordings in several animal models, utilizing multiple electrode types.

**Role: PI**

Grant # 1R13EB025694-01 (Capadona) 09/25/2017 - 06/30/2018  
 NIBIB & NINDS R13 \$15,000 DC  
*2018 Neuroelectronic Interfaces Gordon Research Conference*

The goal of this award was to support the registration of early career scientist and engineers from underrepresented groups, to attend and participate in the inaugural Neuroelectronic Interfaces GRC, which Dr. Capadona Co-Chaired.

**Role: PI**

Grant # PECASE (Capadona) 10/1/2012 - 09/30/2017  
 VA RR&D \$125,000 DC  
*Presidential Early Career Award for Scientists and Engineers*

This award is given from the President of the United States following nomination from the Department of Veterans Affairs, for early career achievements. The funding was not tied to a specific research project.

**Role: PI**

Grant # B1495-R (Capadona) 10/1/2010 - 9/30/2013  
 VA RR&D Merit Review \$729,681 DC  
*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.

**Role: PI**

Grant # N/A (Capadona) 09/03/2013 – 12/31/2017  
 Wallace H. Coulter Foundation \$75,000 ADC  
*Preventing infection of ventricular shunts*

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

**Role: Co-PI (Luciano)**

Grant # B6344W (Capadona) 07/01/2008 - 06/30/2011  
 VA RR&D Career Development Award II \$472,000 DC  
*Development of Advanced Materials for Direct CNS Interfacing*

The purpose of this project was to perform mentored research towards the development of novel materials with dynamic surface modifications to mediate the cellular response to implanted intracortical microelectrodes.

**Role: PI**

Grant # F4827H (Capadona) 08/01/2006 - 08/01/2008  
 VA RR&D Associate Investigator Award I \$176,661 DC  
*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.

**Role: PI**

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**INVITED SEMINARS**


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**Since Starting as Case Faculty**

24. Neuralink (September 2019)
23. Distinguished Speaker to our EPFL Center for Neuroprosthetics (May 2019)
22. Biomedical Engineering, Michigan State University, (March 2019)
21. Materials Research Society; Phoenix, AZ (April 2017)
20. CIMTEC 2016; Perugia, Italy (June 2016)
19. Department of Biomedical Engineering, UT Dallas (April 2016)
18. Gordon Research Conference: Biomaterials & Tissue Engineering Girona, Spain (July 2015)
17. Neuroprostheses Seminar, Cleveland, OH (September 2014)
16. IEEE, EMBS Conference, Chicago, IL (September 2014)
15. Neural Interface Conference, Dallas, TX (June 2014)
14. Department of Biomedical Engineering, Purdue University, IN (April 2014)
13. Chemistry Department, Saint Joseph's College, Rensselaer, IN (April 2014)
12. Department of Biomedical Engineering, Arizona State University (March 2014)
11. Adolphe Merkle Institute, University of Fribourg, Switzerland (March 2014)
10. Society For Biomaterials, Biomaterials Day 2013, Case Western Reserve University (October 2013).
9. Polymers in Medicine Workshop, University of Rostock, Germany (May 2013).
8. University of Akron, Department of Biomedical Engineering (March 2013).
7. Neurology Grand Rounds, University Hospitals of Cleveland (January 2013)
6. Polymers in Medicine Workshop, Case Western Reserve University (January 2013).
5. John Carroll University, Cleveland Ohio, (November 2012).
4. National Research Advisory Council, Washington DC, Department of Veterans Affairs Central Office (September 2012).
3. Lerner Research Institute, Department of Neuroscience, Cleveland Clinic, Cleveland, Ohio (February 2012).
2. Biomedical Engineering Society, International Meeting (October 2010).
1. L. Stokes Cleveland Department of Veterans Affairs Medical Center, Neuroscience Seminar Series (May 2010).

**Before Starting as Case Faculty**

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).
5. "Do it like the sea cucumber: Bio-inspired chemo-mechanical polymer nanocomposites" 235<sup>th</sup> National Meeting of the Am. Chem. Soc., Div. Polym. Chem. (April 2008).
4. "Responsive Materials for Direct Central Nervous System Interfacing," Departmental Seminar, Department of Biomedical Engineering, Case Western Reserve University (January 2008).
3. "New Materials for Central Nervous System Implants," Neural Engineering and Rehabilitation Lectures, Department of Biomedical Engineering, Case Western Reserve University (June 2007).
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).
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).

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**PRESENTATIONS**


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\* My mentees are underlined, *presenter italicized*

**Since Starting as Case Faculty (101)**
**2018(6)**

- 101.** Hillary W. Bedell, Sydney Song, Xujia Li, Emily Molinich, Shushen Lin, J. Pancrazio, W. Voit, **J.R. Capadona**. “Contributions of the innate immune response and probe material properties to inflammation at the neural interface” Biomedical Engineering Society Meeting, Atlanta, GA, October, 2018.
- 100.** A. Shoffstall, V. Danda, M. Ecker, J. Pancrazio, W. Voit, **J.R. Capadona**. “Evaluation of Thiol-ene/Acrylate Shape Memory Polymer as a Substrate for Intracortical Microelectrodes” Biomedical Engineering Society Meeting, Atlanta, GA, October, 2018.
- 99.** A. Shoffstall, V. Danda, M. Ecker, J. Pancrazio, W. Voit, **J.R. Capadona**. Neuroelectronic Interfaces Gordon Research Conference, 2018 March, Galveston, TX. (poster)
- 98.** E. Ereifej, C. Smith, S. Meade, K. Chen, H. Feng, **J.R. Capadona**. “The Effect of Nanopatterned Surface Structure on the Neuroinflammatory Response to Intracortical Microelectrodes.” Neuroelectronic Interfaces Gordon Research Conference, 2018 March, Galveston, TX. (poster)
- 97.** H. Bedell, J. Hermann, M. Ravikumar, S. Lin, A. Rein, X. Li, E. Molinich, P. Smith, S. Selkirk, R.H. Miller, S. Sidik, D. Taylor, **J.R. Capadona**. “Targeting CD14 on Blood-Derived and not Brain-Derived Immune Cells Improves Intracortical Microelectrode Recordings.” Neuroelectronic Interfaces Gordon Research Conference, 2018 March, Galveston, TX. (poster)
- 96.** J. Hermann, S. Lin, A. Soffer, C. Wong, V. Srivastava, G. Protasiewicz, **J.R. Capadona**. “Investigating the Role of Toll-like Receptors in the Foreign Body Response to Intracortical Microelectrodes.” Neuroelectronic Interfaces Gordon Research Conference, 2018 March, Galveston, TX. (poster)

**2017(7)**

- 95.** E. Ereifej, C. Smith, S. Meade, K. Chen, H. Feng, **J.R. Capadona**. “The Effect of Nanopatterned Surface Structure on the Neuroinflammatory Response to Intracortical Microelectrodes” 2017 May. VA Research Week, Cleveland, OH. (poster)
- 94.** M. Goss, K. Dona, J. McMahon, A. Shoffstall, E. Ereifej, **J.R. Capadona**. “The Effects of Chronic Intracortical Microelectrode Implantation In The Motor Cortex on Motor Behavior in Healthy Rats” Biomedical Engineering Society Meeting, Phoenix, AZ, October, 2017. (podium)
- 93.** E. Ereifej, C. Smith, S. Meade, K. Chen, **J.R. Capadona**. “Architectural Surface Modifications of Intracortical Microelectrode for Reduced Foreign Body Response” Materials Research Society, Phoenix, AZ, April, 2017. (podium)
- 92.** H. Bedell, S. Lin, A. Rein, X. Li, E. Molinich, **J.R. Capadona**. “Removal of Targeted Pathway on Blood-Derived Immune Cells Improves Intracortical Recordings” Materials Research Society, Phoenix, AZ, April, 2017.
- 91.** A. Shoffstall, J. Paiz, D. Miller, M. Willis, G. Rial, D. Menendez, **J.R. Capadona**. “Thermal Damage to the Blood-Brain Barrier during Craniotomy Procedure—Implications for Intracortical Recording Microelectrodes” Materials Research Society, Phoenix, AZ, April, 2017.

90. J. Hermann, J. Chang, D. Taylor, J.R. Capadona. "Therapeutic Inhibition of Innate Immunity to Improve Intracortical Microelectrode Longevity." Materials Research Society, Phoenix, AZ, April, 2017.
89. J.R. Capadona, A. Shoffstall, J. Hermann, E. Ereifej. "Materials-Based, Biologically-Inspired, Anti-Oxidative, Anti-Inflammatory Approaches to Enable Next Generation Intracortical Microelectrodes." Materials Research Society, Phoenix, AZ, April, 2017. (podium)

#### 2016 (11):

88. M.S. Goss, K.R. Dona, J.A. McMahon, A.J. Shoffstall, E.S. Ereifej, J.R. Capadona, "Effect On Rat Motor Behavior Of Chronic Intracortical Microelectrodes Implanted In The Motor Cortex." Society for Biomaterials, Regional Biomaterials Day, Cleveland, OH, October, 2016. (podium – Award Winner)
87. E.S. Ereifej, C. Smith, S. Meade, K. Chen, J.R. Capadona. "Topographical Approaches for Improved Neural Electrode Biocompatibility." Society for Biomaterials, Regional Biomaterials Day, Cleveland, OH, October, 2016. (podium)
86. G. Rial, J. Keene, A. Robert, Z. Zhuang, J.R. Capadona. "Surface-Immobilized Antioxidants Designed to Reduce Neuroinflammation and Improve Intracortical Microelectrode Recording Performance." Society for Biomaterials, Regional Biomaterials Day, Cleveland, OH, October, 2016. (podium, Honorable Mention)
85. A. Shoffstall, M. Ecker, J. Pancrazio, W. Voit, J.R. Capadona. "Validation of Ethylene Oxide Sterilization for Shape Memory Polymer Microelectrodes." Society for Biomaterials, Regional Biomaterials Day, Cleveland, OH, October, 2016. (podium)
84. J. K. Hermann, M. Ravikumar, J.L. Chang, D.M. Taylor, J.R. Capadona. Biomaterials Day, Society for Biomaterials, Cleveland, OH, October 2016.
83. C. Smith, S. Meade, K. Chen, J.R. Capadona, E.S. Ereifej. "The Effect of Nanopatterned Surface on Intracortical Microelectrode Biocompatibility." Biomedical Engineering Society Annual Meeting, Minneapolis, MN, October 2016
82. K.R. Dona, M.A. Goss, J.A. McMahon, A.J. Shoffstall, E.S. Ereifej, J.R. Capadona, "Effect On Rat Motor Behavior Of Chronic Intracortical Microelectrodes Implanted In The Motor Cortex.", Biomedical Engineering Society Annual Meeting, Minneapolis, MN, October 2016.
81. J.K. Hermann, H.W. Bedell, M. Ravikumar, D.M. Taylor, J.R. Capadona. Biomedical Engineering Society Annual Meeting, Minneapolis, MN, October 2016
80. S. Lin, H.W. Bedell MS, M. Ravikumar, A. Rein, J. Li, J.R. Capadona. "Targeting CD14 Pathway on Blood-Derived or Resident Brain Immune Cells Improves Neural Recording." BMES Annual Meeting, Minneapolis, Minnesota, October, 2016
79. E.S. Ereifej, C. Smith, S. Meade, K. Chen, J.R. Capadona. "Topographical Approaches for Improved Neural Electrode Biocompatibility." NANS- Neural Interfaces Conference, Baltimore, Maryland, June, 2016.
78. H.W. Bedell, M. Ravikumar, S. Lin, A. Rein, J.R. Capadona. "Removal of Targeted Pathways on Blood-Derived, but not Brain-Derived, Immune Cells Improves Intracortical Recordings." NANS- Neural Interfaces Conference, Baltimore, Maryland, June, 2016.

#### 2015 (7)

77. J. Keene, G. Gaskin, J. Nguyen, S. Meade and J.R. Capadona, "Anti-oxidant coatings improve intracortical microelectrode performance" Biomedical Engineering Society Annual International Meeting, Tampa, FL, October 2015.

76. V. Srivastava, K.M. Kovach, **J.R. Capadona**. "Investigating the Mechanism of Platinum-Induced Cell Death for Stimulating Neural Electrodes." Biomedical Engineering Society Annual International Meeting, Tampa, FL, October 2015.
75. K.M. Kovach, D. Kumsa, V. Srivastava, E. Hudak, D. Untereker, S. Kelley, H. von Recum, and **J.R. Capadona**. "High-Throughput *In Vitro* Assay to Evaluate the Cytotoxicity of Liberated Platinum Compounds for Stimulating Neural Electrodes." Biomedical Engineering Society Annual International Meeting, Tampa, FL, October 2015.
74. J. Nguyen, K. Buchanan, M. Jorfi, E.J. Foster, C. Weder and **J.R. Capadona**, "Antioxidant-releasing mechanically-compliant polymers to attenuate the neuroinflammatory response at the microelectrode-tissue interface" Biomedical Engineering Society Annual International Meeting, Tampa, FL. October 2015.
74. A. Soffer, J. Hermann, C. Wong, J. Chang, G. Protasiewicz, and **J.R. Capadona**, "Systemic inhibition of innate immunity pathways improves intracortical microelectrode performance" Biomedical Engineering Society Annual International Meeting, Tampa, October 2015.
72. J.K. Hermann, M. Ravikumar, and **J.R. Capadona**, "Inhibition of Innate Immune Receptors to Enhance Intracortical Microelectrode Integration and Stability" IEEE Engineering in Medicine and Biology Society, Milan, Italy, August 2015.
71. J. Keene and **J.R. Capadona**, "Anti-oxidant coatings improve intracortical microelectrode performance" IEEE Engineering in Medicine and Biology Society, Milan, Italy, August 2015.

#### 2014 (16)

70. J. Nguyen, K. Buchanan, M. Jorfi, E.J. Foster, C. Weder and **J.R. Capadona**, "Antioxidant-releasing mechanically-compliant polymers to attenuate the neuroinflammatory response at the microelectrode-tissue interface" Society For Neuroscience, Washinton DC, November 2014.
69. S. Sunil S. Sunil, M. Ravikumar, D. Barkaukas, A. Huang, R. Miller, S. Selkirk, **J.R. Capadona**. "Characterization of Blood Brain Barrier Disruption at the Tissue-Electrode Interface" Biomedical Engineering Society, San Antonio, TX, October 2014.
68. T. Srail, E. Ereifej, K. Potter-Baker, **J.R. Capadona**. Biomedical Engineering Society, San Antonio, TX, October 2014.
67. W. Tomaszewski, M. Ravikumar, S. Sunil, A Burke, D. Hagaman, D. Barkaukas, A. Huang, R. Miller, S. Selkirk, **J.R. Capadona**. "Inhibition of Cluster Of Differentiation 14 (CD14) Attenuates Neuroinflammation Around Intracortical Microelectrode Interface" Biomedical Engineering Society, San Antonio, TX, October 2014.
66. Wade G. Stewart, Kelsey A. Potter-Baker, William D. Meador, William H. Tomaszewski, Martin M. Gitomer, Nicholas P. Ziats and **J.R. Capadona**. "Histological and Biodistribution Assessment of Daily Administration of Resveratrol: Application for Intracortical Microelectrodes" Biomedical Engineering Society, San Antonio, TX, October 2014.
65. J. Nguyen, D. Park, J. Skousen, A. Hess-Dunning, D. Tyler, S. Rowan, C. Weder, and **J.R. Capadona**. "Mechanically-compliant Intracortical Implants Reduce the Neuroinflammatory Response" Biomedical Engineering Society, San Antonio, TX, October 2014
64. M. Gitomer, K. Potter-Baker, J. Nguyen, K. Kovach, T. Srail, W. Stewart, J. Skousen, and **J. R. Capadona**. "Development of Superoxide Dismutase Mimetic Surfaces to Reduce Accumulation of Reactive Oxygen Species for Neural Interfacing Applications" Biomedical Engineering Society, San Antonio, TX, October 2014.



63. J. K. Nguyen, K. Buchanan, M. Jorfi, E. J. Foster, C. Weder and J.R. Capadona. "A Synergistic Approach to Attenuate the Neuroinflammatory Response at the Microelectrode-Tissue Interface" SIBF Biointerface, Redwood City, CA, October 2014.
62. J. Hermann, M. Ravikumar, J. Nguyen, C.T. Wong, A. Soffer, P. Srivastava, and J.R. Capadona. "Understanding the Immune Response to Intracortical Microelectrodes" Biomedical Engineering Society, San Antonio, TX, October 2014.
61. J. Nguyen, K. Buchanan, M. Jorfi, E.J. Foster, C. Weder and J.R. Capadona, "Investigation of the Neuroinflammatory Response to Antioxidant-Releasing Mechanically-Compliant Implants" Biomedical Engineering Society, San Antonio, TX, October 2014.
60. A. Sridharan, J. Nguyen, J.R. Capadona, and J. Muthuswamy. "Compliant Nanocomposite Materials Reduce Mechanical Stresses At The Electrode-Tissue Interface" Neural Interfaces Conference, Dallas, TX, June 2014
59. J. Hermann, J. Jiang, D. Taylor, and J.R. Capadona. "Understanding the Role of Innate Immunity in Intracortical Microelectrode Failure" Neural Interfaces Conference, Dallas, TX, June 2014.
58. K.A. Potter, W.D. Meador, W.G. Stewart, M.M. Gitomer J.R. Capadona. "The Effect of Chronic Resveratrol Administration on Neurodegeneration and Blood Brain Barrier Stability Surrounding Intracortical Microelectrodes" Society For Biomaterials, Denver, CO, April 2014.
57. J. Nguyen, K.A. Potter, K.M. Kovach, M.M. Gitomer, T.W. Srail, W.G. Stewart, J. Skousen, and J.R. Capadona. "Surface Conjugation of a Superoxide Dismutase Mimetic to Mitigate Local Neuroinflammatory-Mediated Oxidative Stress Events" Society For Biomaterials, Denver, CO, April 2014.
56. J. Nguyen, K. Buchanan, M. Jorfi, C. Weder, and J.R. Capadona. "Investigation of Neuroinflammatory Response to Anti-oxidant Releasing Mechanically-Adaptive Polymer Implants" Society For Biomaterials, Denver, CO, April 2014.
55. J. Hermann, M. Ravikumar, J. Nguyen, S. Sudhakar, P. Srivastava, and J.R. Capadona. "Disruption of Endogenous Damage Receptor Signaling to Improve Performance of Intracortical Microelectrodes" Society For Biomaterials, Denver, CO, April 2014. (podium; Award Winner)

### 2013 (13)

54. 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)
53. 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)
52. 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)
51. 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.
50. 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.

49. 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.
48. 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)
47. 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)
46. 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)
45. 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)
44. 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.
43. 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.
42. 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)

41. 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.
40. 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.
39. K. Householder, K.A. Potter, and **J.R. Capadona**. “Drug Delivery of Ginger Derived Antioxidants from Mechanically Adaptive Intracortical Implants to Improve Neural Device Tissue Integration” PiNO 2012, Cleveland, OH, June 2012.
38. 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.
37. 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.

36. 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.
35. 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.
34. 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.
33. 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)
32. 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)
31. 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” Biomedical Engineering Society, Atlanta, GA, October 2012.
30. 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)
29. 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)
28. 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)
27. 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)
26. 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)
25. 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.
24. 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)
23. D.J. Hageman, M. Ravikumar, **J.R. Capadona**. “Endotoxin Levels Facilitate Device-Associated Neuroinflammation” Biomedical Engineering Society, Atlanta, GA, October 2012.
22. 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.

**2011 (12)**

21. 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)
20. 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
19. 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
18. 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
17. 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.
16. M. Ravikumar, S. Jain, W. Self, S.M. Selkirk, **J.R. Capadona**. “Excessive Wound Healing May Mediate Neurodegeneration” PiNO 2011, Cleveland, OH, June 2011. – 3<sup>rd</sup> Place Award
15. 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. – 1<sup>st</sup> Place Award
14. **J.R. Capadona** Gordon Research Conference; Biomaterials: Biocompatibility / Tissue Engineering, Holderness School, NH; 2011.
13. 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)
12. 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)
11. 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.
10. 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).

**2010 (9)**

9. 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.
8. **J.R. Capadona**. L. Stokes Cleveland Department of Veteran’s Affairs Medical Center, Neuroscience Seminar Series, Cleveland, OH; 2010. (podium)
7. 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.
6. K.A. Potter and **J.R. Capadona**. “Modulation of Inflammation at the Cortical-Tissue Device Interface” Case Research ShowCASE, Cleveland, OH, April 2010.

5. 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.
4. 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.
3. **J.R. Capadona**. “Materials-based Approaches to Modulating Gliosis at the Cortical Tissue-Electrode Interface” BMES, National Meeting Austin, TX; 2010. (invited - podium)
2. 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.
1. 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)**

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.
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.
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)
21. **J.R. Capadona**, Departmental Seminar, Department of Biomedical Engineering, Case Western Reserve University; 2008. (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.
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)
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.
17. **J.R. Capadona**, S.J. Rowan, C. Weder, and D.J. Tyler. Materials Research Society (MRS) Spring Meeting. San Francisco, CA; 2007. (podium)
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.
15. **J.R. Capadona**, J. P. Harris, S. J. Rowan, C. Weder, and D. J. Tyler. Neural Engineering and Rehabilitation Day. Cleveland, OH; 2006.
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.
13. D.J. Tyler, C. Weder, S.J. Rowan and **J.R. Capadona**. Materials Research Society (MRS) Spring Meeting. San Francisco, CA; 2006. (podium)
12. T.A. Petrie, **J.R. Capadona**, and A.J. García. Society For Biomaterials (SFB). Pittsburgh, PA; 2006. (podium)
11. T. A. Petrie, N.D. Gallant, **J.R. Capadona**, and A.J. García. Materials Research Society (MRS). Boston, MA; 2005. (podium)

10. **J.R. Capadona**, D.M. Collard, and A.J. García. Society For Biomaterials (SFB). Memphis, TN; 2005. (podium)
9. **J.R. Capadona**, D.M. Collard, and A.J. García. Society For Biomaterials (SFB). Philadelphia, PA; 2004. (podium)
8. **J.R. Capadona**, D.M. Collard, and A.J. García. Materials Research Society (MRS) Spring Meeting. San Francisco, CA; 2004. (podium)
7. **J.R. Capadona**, D.M. Collard, and A.J. García. 55<sup>th</sup> Southeast Regional Meeting of the American Chemical Society. Atlanta, GA; 2003. (podium)
6. **J.R. Capadona**, D.M. Collard, and A.J. García. 29<sup>th</sup> Annual Society For Biomaterials National Meeting. Reno, NV; 2003. (podium)
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.” 225<sup>th</sup> American Chemical Society Meeting, New Orleans, LA; 2003. (podium)
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.
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.*
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.
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.

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## SERVICE

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### Case Western Reserve University: *University*

- Faculty Senate: Graduate Education Committee (20118 – current)
- Provost Committee: Campus Culture & Environment Thinking Group (2017)
- CWRU IACUC (Fall 2016 – current)
- Faculty Sponsor and Mentor for Baseball Club Team (2010 – current)
- CWRU Academic Integrity Hearing Boards (Fall 2015 – current)
- Faculty Sponsor and Mentor for Sigma Phi Epsilon (2010 – current)
- Co-mentor Society For Biomaterials local chapter (2012 – current)
- Student Tours, Recruiting local and National (2010 – current)
- 20 Invited research seminars, as CWRU representative

### *Case School of Engineering*

- Dean Search Interview Committee (2018)
- Graduate Education Committee (2012 – 2014)

### *Department of Biomedical Engineering*

- Neural Engineering Faculty Search Committee (2017-2018)
- Graduate Education Committee (2012 – current)
  - i) Chair (2014 – current)
  - ii) Vice Chair (2013-2014)
- (Co)Chair - Ford Lecture Committee (2012-2014)
- Open House Committee (2010 – current)

- Undergraduate Education Committee (2010-2012)
- Orientation, Student Tours, Recruiting (2010 – current)
- Webmaster (2010-2012)

#### External Service

- Guest Editor: *Frontiers in Neuroscience* Special research topic: “Bridging the Gap in Neuroelectronic Interfaces”
- Inaugural Chair: Neuroelectronic Interfaces Gordon Research Conference
- Review Editor: Editorial Board of *Biomaterials*, a specialty of *Frontiers in Bioengineering and Biotechnology, Materials and Molecular Biosciences* (2017 →)
- NIH reviewer (BNVT = Feb 2016, May 2016)
- Brain Initiative Reviewer, NINDS (2015)
- International Advisory Board for 11th International Conference "Medical Applications of Novel Biomaterials and Nanotechnology" of CIMTEC 2016, 2017
- IEEE EMBS Associate Editor (2015-2018 term).
- NSF Biomaterials Study Section: Adhoc Reviewer (Spring 2014)
- NIH-funded KINBRE Development Award: Adhoc Reviewer (2013-2014)
- Department of Defense: Adhoc Reviewer (2012)
- Cleveland Neural Engineering Workshop Leadership (2013)
- Rehabilitation Research, Department of Veterans Affairs Grant Review (2013; 2016)
- Society For Biomaterials: Session Chair and Organizer (2011– current)
- Biomedical Engineering Society: Abstract Reviewer, Session Chair (2010– current)
- Hathaway Brown; Faculty Mentor and Science Fair Judge (2012– current)
- L. Stokes CDVAMC IACUC (2007– current)
- Scientific Reviewer: Examples include: *Acta Biomaterialia*, *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*

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## TEACHING AND MENTORING

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**Hobbies: Engineering Fun (FSNA 150)**, University SAGES, Case Western Reserve University, 100% effort Fall 2014, Fall 2015, Fall 2016, Fall 2017, Current.

**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, Fall 2013.

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

**Introduction to Biomaterials (EBME 306)**, Department of Biomedical Engineering, Case Western Reserve University, 30% effort Fall 2010 - Fall 2017.

**Neural Interfacing (EBME 407)**, Department of Biomedical Engineering, Case Western Reserve University, two lectures Spring 2008, three lectures Spring 2011, 30% effort Spring 2013, Spring 2015, Spring 2017.

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

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

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

**Post-Doctoral Researchers:**

5. Dr. Luis Gonzalez-Reyes Department of Veterans Affairs and Case Western Reserve University, August 2018 – May 2019
4. Dr. Andrew Shoffstall, Ph.D., Department of Veterans Affairs and Case Western Reserve University, September 2015 – June 2020. [VA RR&D CDA1](#)
3. Dr. Evon Ereifej, Ph.D., Department of Veterans Affairs and Case Western Reserve University, May 2014 – Present. [VA RR&D CDA1 and CDA2](#)
2. Dr. Madhu Ravikumar, Ph.D., Department of Biomedical Engineering, Case Western Reserve University, May 2014 – December 2014. (Bristol-Myers Squibb)
1. Dr. John Skousen, Ph.D. Department of Veterans Affairs and Case Western Reserve University, May 2012 – November 2013.

**Graduate Students Mentored:**

19. Ms. Natalie Mueller, Ph.D. Student, Department of Biomedical Engineering, Case Western Reserve University, August 2019 – Present
18. Ms. Olivia Krebs, Ph.D. Student, Department of Biomedical Engineering, Case Western Reserve University, June 2019 – Present
17. Mr. Danny Lam, Ph.D. Student, Department of Biomedical Engineering, Case Western Reserve University, June 2019 – Present
16. Mr. Aniruddha Upadhye. M.S. Student, Department of Biomedical Engineering, Case Western Reserve University, January 2018 – Present (PI: Shoffstall)
15. Mr. George Hoferlin, Ph.D. Student, Department of Biomedical Engineering, Case Western Reserve University, July 2018 – Present
14. Mr. Paul Gloth, Ph.D. Student, Department of Biomedical Engineering, Case Western Reserve University, July 2018 – Present
13. Ms. Youjoung Kim, M.E.M., Ph.D. Student, Department of Biomedical Engineering, Case Western Reserve University, September 2017 – Present
12. Ms. Sydney Song, MD/Ph.D. Student Department of Biomedical Engineering, Case Western Reserve University, July 2016 – Present
11. Mr. Griffin Rial, MS. Student, Department of Biomedical Engineering, Case Western Reserve University, August 2015 – December 2017
10. Ms. Hillary Bedell, Ph.D. Student, Department of Biomedical Engineering, Case Western Reserve University, June 2014 – March 2019 (GenomOncology)
9. Ms. Jennifer Keen, MS-MD, Department of Biomedical Engineering, Case Western Reserve University, July 2014 – August 2015 (Medical School).



8. Mr. Tyler Freeto, BS-MS Student, Department of Biomedical Engineering, Case Western Reserve University, April 2013 – May 2015 (PI – Bogie)
7. Dr. Jinlge Jiang, Ph.D. Student, Department of Biomedical Engineering, Case Western Reserve University, August 2012 – December 2015 (PI – Taylor, Uber)
6. Mr. John Hermann, Ph.D. Student, Department of Biomedical Engineering, Case Western Reserve University, June 2012 – June 2018. (Post-Doc; Cleveland Clinic Lerner Research)
5. Dr. Jessica Nguyen, Ph.D. Student, Department of Biomedical Engineering, Case Western Reserve University, August 2010 – 2015. (Food and Drug Administration)
4. Dr. Madhu Ravikumar, Ph.D., Department of Biomedical Engineering, Case Western Reserve University, August 2010 – 2014. (Bristol-Myers Squibb)
3. Mr. Bo Gui, M.S., Department of Biomedical Engineering, Case Western Reserve University, July 2009 – September 2011. (Sr. Systems Integration Analyst at Accenture)
2. Dr. Kelsey Potter, Ph.D., Department of Biomedical Engineering, Case Western Reserve University, June 2009 – 2014. (Assistant Professor at University of Texas Rio Grande Valley)
1. Dr. James P. Harris, Ph.D., Department of Biomedical Engineering, Case Western Reserve University, September 2005 – 2012. (PI – Tyler; Inscopics)

**Undergraduate Students Mentored:**

71. Max Jesurum, Undergraduate Student, Department of Biomedical Engineering, Case Western Reserve University, January 2020 – Present
70. Ms Amanda Herried, Undergraduate Student, Department of Biomedical Engineering, Case Western Reserve University, September 2019 – Present
69. Mr. Parth Patel, Undergraduate Student, Department of Biomedical Engineering, Case Western Reserve University, May 2019 – Present
68. Ms, Sarah Miller, Undergraduate Student, Pre-Veterinary Medicine, Case Western Reserve University, March 2019 – May 2019
67. Mr. Varoon Aluri, Undergraduate Student, Department of Biomedical Engineering, Case Western Reserve University, January 2019 – Present
66. Mr. Tejas Bajwa, Undergraduate Student, Department of Biomedical Engineering, Case Western Reserve University, January 2019 – Present
65. Ms. Luna Al Lababidi, Undergraduate Student, Department of Biomedical Engineering, Case Western Reserve University, January 2019 – Present
64. Mr. Kevin Malerick, Undergraduate Student, Department of Biomedical Engineering, Case Western Reserve University, December 2018 – July 2019
63. Mr. Shyam Policonda, Undergraduate Student, Department of Biomedical Engineering, Case Western Reserve University, December 2018 – July 2019
62. Ms. Lindsey Druschel, Undergraduate Student, Department of Biomedical Engineering, Case Western Reserve University, December 2018 – Present
61. Ms. Hanwen (Hannah) Zhang, Undergraduate Student, Department of Biomedical Engineering, Case Western Reserve University, October 2018 – Present
60. Mr. William Schwartzman, Undergraduate Student, Department of Biomedical Engineering, Case Western Reserve University, January 2018 – Present
59. Ms. Puja Desai, Undergraduate Student, Department of Biomedical Engineering, Case Western Reserve University, September 2017 – May 2019
58. Mr. Carmen Toth, Undergraduate Student, Department of Biomedical Engineering, Case Western Reserve University, September 2017 – December 2019
57. Ms. Marina Yu, Undergraduate Student, Department of Biomedical Engineering, Case Western Reserve University, September 2017 – May 2019

56. Ms. Noel Jeansonne, Undergraduate Student, Department of Biomedical Engineering, Case Western Reserve University, September 2017 – May 2018
55. Ms. Shreya Ravindran, Undergraduate Student, Department of Biomedical Engineering, Case Western Reserve University, September 2017 – June 2018
54. Ms. Sydney Linder, Undergraduate Student, Department of Biomedical Engineering, Case Western Reserve University, May 2017 – December 2018
53. Mr. Jacob Rayyan, Undergraduate Student, Department of Biomedical Engineering, Case Western Reserve University, October 2016 – June 2018
52. Ms. He (Heather) Feng, Undergraduate Student, Department of Biomedical Engineering, Case Western Reserve University, September 2016 – June 2018
51. Ms. Dhariyat Menendez, Undergraduate Student, Department of Biomedical Engineering, Case Western Reserve University, September 2016 – June 2017
50. Mr. Patrick Smith, Undergraduate Student, Department of Biomedical Engineering, The Ohio State University, May 2016 – August 2016
49. Mr. Jeffrey Finster, Volunteer, Department of Biomedical Engineering, Case Western Reserve University, May 2016 – 2017
48. Mr. Justin McMahon, Undergraduate Student, Department of Biomedical Engineering, Case Western Reserve University, May 2016 – May 2018
47. Mr. Zishen (Owen) Zhuang, Undergraduate Student, Department of Biomedical Engineering, Case Western Reserve University, May 2016 – 2017
46. Ms. Elizabeth Mancuso, Undergraduate Student, Department of Neuroscience, The Ohio State University, May 2016 – August 2016, May 2017 – August 2017
45. Mr. Nishant Uppal, Undergraduate Student, Department of Biomedical Engineering, Case Western Reserve University, January 2016 – May 2016
44. Mr. Keith Dona, Undergraduate Student, Department of Biomedical Engineering, Case Western Reserve University, January 2016 – May 2018
43. Mr. David Miller, Undergraduate Student, Department of Biomedical Engineering, Case Western Reserve University, December 2015 – May 2017
42. Ms. Emily Molinich, Undergraduate Student, Department of Biomedical Engineering, Case Western Reserve University, December 2015 – May 2018
41. Mr. Mitchell Willis, Undergraduate Student, Department of Biomedical Engineering, Case Western Reserve University, December 2015 – May 2018
40. Ms. Jennifer Paiz, Undergraduate Student, Department of Biomedical Engineering, Case Western Reserve University, December 2015 – May 2019
39. Mr. Andres Robert, Undergraduate Student, Department of Biomedical Engineering, Case Western Reserve University, December 2015 – 2017
38. Ms. Xujia (Jessica) Li, Undergraduate Student, Department of Biomedical Engineering, Case Western Reserve University, December 2015 – May 2018
37. Ms. Keying (Cohli) Chen, Undergraduate Student, Department of Biomedical Engineering, Case Western Reserve University, December 2015 – May 2018
36. Mr. Jeremy Chang, Undergraduate Student, Department of Biomedical Engineering, Case Western Reserve University, June 2015 – 2017
35. Mr. Sergej Stjepic, Undergraduate Student, Departments of Biology and Chemistry, Saint Joseph's College, May 2015 – August 2015
34. Ms. Ashely Rein, Undergraduate Student, Department of Biomedical Engineering, Case Western Reserve University, November 2014 – May 2017
33. Mr. Seth Meade, Undergraduate Student, Department of Biomedical Engineering, Case Western Reserve University, November 2014 – Present

32. Ms. Cara Smith, Undergraduate Student, Department of Biomedical Engineering, Case Western Reserve University, November 2014 – May 2017
31. Ms. Sanam Patel, Undergraduate Student, Department of Biomedical Engineering, Case Western Reserve University, August 2014 – August 2015
30. Mr. Shushen Lin, Undergraduate Student, Department of Biomedical Engineering, Case Western Reserve University, August 2014 – May 2017
29. Ms. Grace Gaskin, Undergraduate Student, Department of Biomedical Engineering, Case Western Reserve University, August 2014 – May 2015
28. Mr. Tyler Ward, Undergraduate Student, Department of Biomedical Engineering, Case Western Reserve University, August 2014 – February 2015
27. Mr. Colin Uthe, Undergraduate Student, Department of Biology, Ripon College, Ripon, WI; June – July 2014
26. Mr. Alexis Hobot, Undergraduate Student, Department of Biomedical Engineering, Case Western Reserve University, April 2014 – June 2014.
25. Mr. Frankie Wong, Undergraduate Student, Department of Biomedical Engineering, Case Western Reserve University, January 2014 – June 2017
24. Ms. Arielle Soffer, Undergraduate Student, Department of Biomedical Engineering, Case Western Reserve University, January 2014 – December 2015
23. Mr. Alan Burke, Undergraduate Student, Department of Biomedical Engineering, Case Western Reserve University, September 2013 – May 2014
22. Mr. Will Meador, Undergraduate Student, Department of Biomedical Engineering, Case Western Reserve University, August 2013 – December 2015
21. Ms. Priya Srivastava, Undergraduate Student, Case Western Reserve University, June 2013 – November 2015
20. Mr. Martin Gitomer, Undergraduate Student, Department of Biomedical Engineering, Case Western Reserve University, June 2013 – May 2015
19. Mr. Tyler Freeto, BS-MS Student, Department of Biomedical Engineering, Case Western Reserve University, April 2013 – May 2015
18. Mr. Tyler Srail, Undergraduate Student, Department of Biomedical Engineering, Case Western Reserve University, June 2013 – May 2015
17. Mr. Daniel Joo You Park, Undergraduate Student, Department of Biomedical Engineering, Case Western Reserve University, June 2013 – May 2015
16. Mr. Wade Stewart, Undergraduate Student, Department of Biomedical Engineering, Case Western Reserve University, June 2013 – May 2015
15. Mr. Jake Anna, Undergraduate Student, Department of Biomedical Engineering, Case Western Reserve University, December 2012 – May 2013.
14. Mr. William Tomaszewski, Undergraduate Student, Department of Biomedical Engineering, Case Western Reserve University, October 2012 – May 2015.
13. Mr. James Black, Undergraduate Student, Department of Biomedical Engineering, Case Western Reserve University, September 2012 – May 2013.
12. Ms. Gabriela Chandra, Undergraduate Student, Department of Biomedical Engineering, Case Western Reserve University, September 2012 – December 2012.
11. Ms. Kelly Buchanan, Undergraduate Student, Department of Biomedical Engineering, Case Western Reserve University, September 2012 – May 2015.
10. Ms. Shruti Sudhakar, Undergraduate Student, Department of Biomedical Engineering, Case Western Reserve University, August 2012 – December 2013.
9. Mr. Asheq Ahmed, Undergraduate Student, Department of Biomedical Engineering, Case Western Reserve University, February 2012 – June 2012.

8. Ms. Smrithi Sunil, Undergraduate Student, Department of Biomedical Engineering, Case Western Reserve University, February 2012 – September 2014.
7. Mr. Kyle Householder, Undergraduate Student, Department of Biomedical Engineering, Case Western Reserve University, February 2012 – June 2013.
6. Ms. Amy Buck, Undergraduate Student, Department of Biomedical Engineering, Case Western Reserve University, August 2011 – May 2013.
5. Mr. Daniel Hageman, Undergraduate Student, Department of Biomedical Engineering, Case Western Reserve University, August 2011 – May 2013.
4. Mr. Wade Self, Undergraduate Student, Department of Biomedical Engineering, Case Western Reserve University, January 2011 – January 2012.
3. Mr. Bharath Velagapudi, Undergraduate Student, Department of Biomedical Engineering, Case Western Reserve University, March 2010 – June 2012.
2. Mr. Robert Jiang, Undergraduate Student, Department of Biomedical Engineering, Case Western Reserve University, October 2009 – December 2010.
1. Ms. Chiderah Okoye, Undergraduate Research, Department of Biomedical Engineering, Case Western Reserve University, May 2009 – December 2009.

### **High School Students Mentored:**

6. Timothy Diemer – Gilmour Academy (2018 – 2019)
5. Sahaj K. Bhambra – Twinsburg High School (2017-current)
4. Suraj Srinivasan – Strongsville High School (2016-2017)
3. Raman Bhambra – Twinsburg High School (2016-2017)
2. Grace (Gigi) Protasiewicz – Hathaway Brown (2014-2017)
1. Megan Callanan – Hathaway Brown (2011-2014) – Johns Hopkins University, BME

### **Case Thesis Committees (Incomplete List):**

21. Morgan Lorkowski – Ph.D. Committee Chair (Advisor – S. Karathanasis, BME)
20. Muthumeenakshi Subramanian – M.S. Committee Chair (Advisor – D. Durand, BME)
19. Gil Covarrubias – Ph.D. Committee Chair (Advisor – S. Karathanasis, BME)
18. Pinunta Nittayacharn – Ph.D. Committee Chair (Advisor – A. Exner; Radiology)
17. Greg Learn – Ph.D. Committee Chair (Advisor – H. Von Recum; BME.)
16. DaShawn Hickman – Ph.D. Committee (Advisor – A. SenGupta; BME)
15. Rajat Schivacharan - M.S. Committee (Advisor – D. Durrand; BME)
14. Yehe Li - M.S. Committee (Advisor – S. Eppell; BME)
13. Nandula Wanasekara – Ph.D. Committee (Advisor – L. Korley; Macromol. Sci. & Eng.)
12. Megan Lashof-Sullivan – Ph.D. Committee (Advisor – E. Lavik; BME)
11. Jingle Jiang – Ph.D. Committee Chair (Advisor – D. Taylor; BME)
10. Debra (Barkauskas) Sim – Ph.D. Committee (Advisor – A. Huang; BME)
9. John Hermann – Ph.D. Committee (Advisor – J. Capadona; BME)
8. Madhuthima Ravikumar – Ph.D. Committee (Advisor – J. Capadona; BME)
7. Kathy Ward – B.S., M.S. Committee (Advisor – D. Taylor; BME)
6. Justin Fox – Ph.D. Committee (Advisor – S. Rowan; Macromolecular Science & Eng.)
5. Jessica Nguyen – Ph.D. Committee (Advisor – J. Capadona; BME)
4. Kelsey Potter – Ph.D. Committee (Advisor – J. Capadona; BME)
3. Bo Gui – M.S. Committee (Advisor – J. Capadona; BME)
2. Smruta Koppaka – Ph.D. Committee (Advisor – D. Tyler; BME)
1. James Harris – Ph.D. Committee (Advisor – D. Tyler; BME)

**Awards / Achievements by My Students (Incomplete List):**

- Suraj Srinivasan - Intel INSEF, 1<sup>st</sup> Prize, Biomedical Engineering 2017
- Sahaj Bhambra - BEST Medicine Fair; Bronze Prize, March 2017
- Grace (Gigi) Protasiewicz – named Siemens Semifinalist; October 2016
- Arielle Soffer, wins 2<sup>nd</sup> place at the Intersections: SOURCE Poster Presentations; Dec. 2015
- Dr. Kelsey Potter-Baker Acta Student Award for Outstanding Publication Acta Biomaterialia
- Megan Callanan, ISWEEEP as Finalists, May 2014
- February 2014 - John Hermann wins a Society For Biomaterials STAR Award for an excellent abstract submission to the 2014 SBF Meeting.
- October 2013 - Kelsey Potter wins "Best Student Oral Presentation Award" at the Society For Biomaterials Regional Meeting in Cleveland, OH
- October 2013 - Jessica Nguyen wins "2nd Place in the Student Poster Presentation Award" competition at the Society For Biomaterials Regional Meeting in Cleveland, 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