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EDUCATION / TRAINING

2018 – Pres.	**Associate Professor**	*University of South Carolina* Department of Chemistry and Biochemistry
2015 – 2018.	**Assistant Professor**	*University of South Carolina* Department of Chemistry and Biochemistry
2011 – 2015	**Assistant Professor**	*Wayne State University* Department of Chemistry
2007 – 2011	**Post-Doctoral Fellow**	*University of North Carolina* (Supervisor: Mark Wightman) Department of Chemistry
2004 – 2007	**PhD in Bioengineering**	*Imperial College, London* (Supervisor: Martyn Boutelle) Dept. of Bioengineering
1999 – 2003	**MSci in Chemistry (1st class)**	*King's College, London* Department of Chemistry

RESEARCH INTERESTS

- Neural engineering for *in vivo* detection of neurotransmitters
- Serotonin's functional roles *in vivo* in depression and autism spectrum disorder: neurochemical, pharmacological, microscopic and behavioral studies
- Histaminergic modulation of serotonin during neuroinflammation
- Micro-engineered detection devices for *in vivo* trace metal analysis
- The effect of environmental exposure to toxins on neurochemistry

HONORS SINCE 2013

2018 Society for Electroanalytical Chemistry (SEAC) Royce W. Murray Award
2018 Society of Pittsburgh Chemists Pittcon Achievement Award
2018 University of South Carolina Breakthrough Stars Award
2017 Midwestern Universities Analytical Chemistry Conference Young Investigator Travel Award
2017 International Society for Neurochemistry Brain in Flux Symposium Young Faculty Travel Award
2017 NSF CAREER Award
2015 Eli Lilly Young Investigator Award in Analytical Chemistry
2013 Masao Horiba Award for Analytical Chemistry

PUBLICATIONS AS INDEPENDENT FACULTY

Under Review

1. Robke, R., **Hashemi, P**., Ramsson, E. "A Simplified LED-Driven Switch for Fast Scan Adsorption Controlled Voltammetry Instrumentation". 2018. *Hardware X*.
2. O'Donovan, B., Adeluyi, A., Samaranayake, S., Galloway, A., **Hashemi, P**., Turner, J., Ortinski, P. "Dopamine Regulation of A-type Potassium Channels Underlies Individual Differences in Motivation for Reward", 2018. *Biological Psychiatry.*
3. Qiang, B., Abdalla, A., Morgan, S., **Hashemi, P**., Pena, E. "Estimation of a Mean Concentration Response Function and a Change-Point based on Time-Course and Calibration Data Sets". 2018. *Technometrics.*

Published

4. Best, J., Nijhout, S., Samarnayake, S., **Hashemi, P**., Reed, M. C. "A Mathematical Model for Histamine Synthesis, Release, and Control in Varicosities". *Theoretical Biology and Medical Modeling* 2017, 12:14(1), 24.

5. Abdalla, A., Atcherley, C., Qiang, B., Pena, E., Morgan, S., Heien, M., **Hashemi, P**. "*In Vivo* Ambient Serotonin Measurements at Carbon Fiber Microelectrodes". *Analytical Chemistry* 2017, 19;89(18), 9703-9711.
6. Yi, W, Yang, Y, **Hashemi, P**., Cheng, M. "3D Carbon Nanofibers Fabricated by Plasma-Assisted Pyrolysis for Enhancing Sensitivity and Stability During Real-time Dopamine Detection". *Biomedical Microdevices* 2016, 18(6), 112.
7. Pathirathna, P., Siriwardhane, T., McElmurry, S. P., **Hashemi, P**. "Fast Voltammetry of Metals at Carbon Fiber Microelectrodes: Towards a Real-Time Speciation Sensor". *Analyst* 2016, 141(23), 6432-6437.
8. Pathirathna, P., Siriwardhane, T., McElmurry, S. P., Morgan, S., **Hashemi, P**. "Fast Voltammetry of Metals at Carbon Fiber Microelectrodes: Ultra Rapid Determination of Solution Formation Constants". *Analyst* 2016, 141(21), 6025-6030.
9. Srejic, L. R., Wood, K. M., Zeqja, A., **Hashemi, P**., Hutchinson, W. "Modulation of Serotonin Dynamics in the Dorsal Raphe Nucleus via High Frequency Medial Prefrontal Cortex Stimulation". *Neurobiology of Disease* 2016*,* 94, 129-38.
10. Siriwardhane, T. Sulkanen, A. Tremonti, A. McElmurry, S. P. **Hashemi, P**. "Real-time Voltammetric Characterization of Copper Complexation". *Analytical Chemistry* 2016, 88(15), 7603-8.
11. Jin, Y., Wood, K. M., Sun, L., Cudmore, R., Abdalla, A., Kannan, G., Pletnikov, M., **Hashemi, P**., Linden, D. "Regrowth of Serotonin Axons in the Adult Mouse Brain Following Injury". *Neuron* 2016*,* 91(4), 748-62.
12. Samarnayake, S., Abdalla, A., Robke, R., Nijhout, F., Reed. M., Best. J., **Hashemi, P**. "A Voltammetric and Mathematical Analysis of Histaminergic Modulation of Serotonin in the Mouse Hypothalamus". *Journal of Neurochemistry* 2016*,* 138(3), 374-83.
13. Yang, Y., Ibrahim. A., **Hashemi, P**.,* Stockdill, J.* "Real-Time, Selective Detection of Copper(II) Using Ionophore-Grafted Carbon-Fiber Microelectrodes". *Analytical Chemistry* 2016, 88(14), 6962-6.
14. Yang, Y., Ibrahim. A., Stockdill., **Hashemi, P.** "A Density-controlled Scaffolding Strategy for Covalent Functionalization of Carbon Fiber Microelectrodes". *Analytical Methods* 2015, 7, 7352-7357.
15. Samarnayake, S., Abdalla, A., Robke, R., Wood, K. M., Zeqja, A., **Hashemi, P**. "*In Vivo* Histamine Voltammetry in the Mouse Premammillary Nucleus". *Analyst* 2015, 140, 3759-65.
16. Atcherley, C., Wood, K. M., Parent, K. L., **Hashemi, P**.,*Heien, M.* "The Coaction of Tonic and Phasic Dopamine Dynamics". *Chemical Communications* 2015, 51(12), 2235-2238.
17. Atcherley, C., Laude, N., Monroe, E., Wood, K. M., **Hashemi. P**., Heien, M. "Improved Calibration of Voltammetric Sensors for Studying Pharmacological Effects on Dopamine Transporter Kinetics In Vivo". *ACS Chemical Neuroscience* 2015, 6(9), 1509-16.
18. Pathirathna, P., Samarnayake, S., Atcherley, C., Heien, M, McElmurry, S. M., **Hashemi, P**. "Fast Voltammetry of Metals at Carbon-Fiber Microelectrodes: Copper Adsorption onto Activated Carbon aids Rapid Electrochemical Analysis". *Analyst* 2014, 139(18), 4673-80.
19. Wood, K. M., Zeqja, A., Nijhout, F., Reed, M., Best, J., **Hashemi, P.** "Voltammetric and Mathematical Evidence for Dual Transport Mediation of Serotonin *In Vivo*". *Journal of Neurochemistry* 2014, 130(3), 351-9.
20. Yang, Y., Pathirathna, P., Siriwardhane, T., McElmurry, S. M., **Hashemi, P**. "Real-time Sub-second Voltammetric Analysis of Pb in Aqueous Environmental Samples". *Analytical Chemistry* 2013, 85, 7535-7541.
21. Wood. K. M., **Hashemi, P**., "Fast-Scan Cyclic Voltammetry Analysis of Dynamic Serotonin Responses to Acute Escitalopram" *ACS Chemical Neuroscience* 2013, 4(5), 715-720.
22. Lama, R. D., Charlson, K. C., Anantharam, A., **Hashemi, P**. "Ultra-fast Detection and Quantification of Brain Signaling Molecules with Carbon Fiber Microelectrodes." *Analytical Chemistry* 2012, 84(19), 8096-101.
23. Pathirathna, P., Yang, Y., Forzley, K., McElmurry, S. M., **Hashemi, P**. "Fast-Scan Deposition Stripping Voltammetry at Carbon Fiber Microelectrodes: Real-time, Sub-second Mercury Free Measurements of Copper." *Analytical Chemistry* 2012, 84, 6298-6302.

PUBLICATIONS AS MENTEE

24. **Hashemi, P**, Dankoski, E. C, Lama, R, Wood, K. M, Takmakov, P, Wightman, RM. "Brain Dopamine and Serotonin Differ in Regulation and its Consequences." *PNAS* 2012, 109, 11510-11515.

25. **Hashemi, P**., Walsh, P. L., Takmakov, P., Guillot, T. S., Gras-Najjar, J., Crews, F. T., Wightman, R. M. "Chronically Implanted Nafion Coated Ag/AgCl Reference Electrodes for Neuro-chemical Applications." *ACS Chemical Neuroscience* 2011, 2, 658-666.
26. **Hashemi, P**., Dankoski, E. C., Wood, K. M., Ambrose. A. R., Wightman, R. M. "*In Vivo* Electrochemical Evidence for Simultaneous 5-HT and Histamine Release in the Rat Substantia Nigra pars Reticulata Following Medial Forebrain Bundle Stimulation." *Journal of Neurochemistry* 2011, 118, 749-759.
27. Nakamura, H., Strong, A. J., Dohmen, C., Sakowitz, O. W., Vollmar S., Sue, M., Kracht, L., **Hashemi, P**., Bhatia, R., Yoshimine, T., Dreier, J. P., Dunn, A. K., Graf, R. "Spreading Depolarizations Cycle Around and Enlarge Focal Ischaemic Brain Lesions." *Brain* 2010, 113, 1994-2006.
28. Feuerstein, D., Manning, A., **Hashemi, P**., Bhatia, R., Fabricius, M., Clemens, P., Ervine, M., Strong, A. J., Boutelle, M. G. "Dynamic Metabolic Response to Multiple Spreading Depolarizations in Patients with Acute Head Injury: An Online Microdialysis Study." *Journal of Cerebral Blood Flow and Metabolism* 2010, 30, 1343-1355.
29. **Hashemi, P**., Dankoski, E. C., Petrovic, J., Keithley, R. B., Wightman, R. M. "Voltammetric Detection of 5–Hydroxytryptamine Release in the Rat Brain." *Analytical Chemistry* 2009, 81, 9462-9471.
30. **Hashemi, P**., Bhatia, R., Nakamura, H., Dreier, J., Graf, R., Boutelle, M. G., Strong, A. J., "Persisting Depletion of Brain Glucose Following Cortical Spreading Depression, Despite Apparent Hyperaemia: Evidence for Risk of an Adverse Effect of Leao's Spreading Depression." *Journal of Cerebral Blood Flow and Metabolism* 2009, 29, 166-179.
31. Caesar, K., **Hashemi, P**., Douhou, A., Bonvento, G., Boutelle, M. G., Walls, A. B., and Lauritzen, M. "Glutamate Receptor-Dependent Increments in Lactate, Glucose and Oxygen Metabolism Evoked in Rat Cerebellum *in vivo*". *Journal of Physiology* 2008, 586, 1337-1349.
32. **Hashemi, P**., Wightman, R. M. "Paying Attention With the Latest Technology." *Neuron* 2007, 56, 4-5.
33. Fabricius, M., Fuhr, S. B., Bhatia, R., Boutelle, M. G., **Hashemi, P**., Strong, A. J., Lauritzen, M., "Cortical Spreading Depression and Peri-Infarct Depolarisations in Acutely Injured Human Cerebral Cortex." *Brain* 2006, 129, 778-790.
34. Bhatia, R., **Hashemi, P**., Razzaq, A., Parkin, M. C., Hopwood, S. E., Boutelle, M. G., Strong, A. J. "The Application of Rapid Sampling On-Line Microdialysis to the Monitoring of Brain Metabolism During Aneurysm Surgery." *Neurosurgery* 2006, 58, 313 – 321.
35. Strong, A. J., Boutelle, M. G., Vespa, P. M., Bullock, M. R., Bhatia, R., **Hashemi, P**. "Treatment of Critical Care Patients with Substantial Acute Ischemic or Traumatic Brain Injury." *Critical Care Med*. 2005, 33, 2147-2149.
36. Parkin, M., Hopwood, S., Jones, D., **Hashemi, P**., Landolt, H., Fabricius, M., Lauritzen, M., Boutelle, M., Strong, A. "Dynamic Changes in Brain Glucose and Lactate in Pericontusional Areas of the Human Cerebral Cortex, Monitored with Rapid Sampling On-Line Microdialysis: Relationship with Depolarization-Like Events." *Journal of Cerebral Blood Flow and Metabolism* 2005, 25, 402-413.
37. **Hashemi, P**., Moztarzadeh, F., Hashemi, T. "Anodisation of Electroformed Nickel for the Manufacture of Compact Disc Stampers". *Journal of Materials Science Letters* 2002, 21, 37-40.

CURRENT FUNDING

1. Project Title: *The Fundamental Principles of Modified Carbon Fiber Microelectrodes as Speciation Sensors,* NSF CAREER award
Total Amount Awarded to PI (Hashemi): **$624,716**
Total Award Period Covered: 05/01/17-04/30/22

2. Project Title: *Voltammetric Determination of Neuronal Serotonin and Histamine Coregulation,* NIH R21
Total Amount Awarded to PI (Hashemi): **$424,223**
Total Award Period Covered: 09/15/16-09/14/18

3. Project Title: An In Vivo Voltammetric Serotonin Biomarker for Antidepressant Efficacy, NIH R01
Total Amount Awarded to PI (Hashemi): **$1,634,629**
Total Award Period Covered: 07/01/16-06/30/21

4. Project Title: Eli Lilly Young Investigator Award
Total Amount Awarded to PI (Hashemi): **$100,000**
Total Award Period Covered: Unrestricted

TEACHING

2018	CHM 322	Quantitative Analysis, University of South Carolina
2017	CHM 712	Electroanalytical Chemistry, University of South Carolina
2017	CHM 112	General Chemistry II, University of South Carolina
2015	CHM 712	Electroanalytical Chemistry, University of South Carolina
2014	CHM 7120	Electroanalytical Chemistry, Wayne State University
2013	CHM 2280	General Chemistry II – Analytical Chemistry, Wayne State University
2013	CHM 7120	Electroanalytical Chemistry, Wayne State University
2012	CHM 7120	Electroanalytical Chemistry, Wayne State University
2012	CHM 7100	Theory of Analytical Chemistry, Wayne State University
2011	CHM 7100	Theory of Analytical Chemistry, Wayne State University

CURRENT RESEARCH COLLABORATIONS

2016 – Pres. **Prof. Sheryl Wiskur**
Department of Chemistry, University of South Carolina
Selective recognition chemistry for neurochemistry sensors

2016 – Pres. **Prof. Steve Morgan**
Department of Chemistry, University of South Carolina
Chemometric analysis of neurochemical data

2015 – Pres. **Prof. Rosemary Booze**
Department of Psychology, University of South Carolina
Monoamine alterations accompanying HIV induced neurodegeneration

2015 – Pres. **Prof. Pavel Ortinksi**
Department of Physiology, Pharmacology and Neuroscience, University of South Carolina
Dopamine and serotonin chemistry underlying behavioral motivation

2015 – Pres. **Prof. Lawrence Reagan**
Department of Physiology, Pharmacology and Neuroscience, University of South Carolina
Serotonin chemistry underlying obesity comorbid with depression

2015 – Pres. **Prof. Thorsten Lau**
Department of Molecular Biology, Manheim Central Institute for Mental Health
Simultaneous confocal imaging of serotonin transporter and chemical measurements

2015 – Pres. **Prof. Ingo Wilhuln**
Department of Behavioral Neuroscience, Netherlands Institute for Neuroscience
Serotonin measurements in freely moving animals

2014 – Pres. **Prof. Jennifer Stockdill**
Department of Chemistry, Wayne State University
Covalent functionalization of carbon fiber microelectrodes

2013 – Pres. **Prof. Janet Best**
Department of Mathematics, Ohio State University
Modeling the mechanisms that regulate extracellular serotonin

2013 – Pres. **Prof. Michael Reed**
Department of Mathematics, Duke University
Modeling the mechanisms that regulate extracellular serotonin

2013 – Pres. **Prof. H. Fred Nijhout**
Department of Mathematics, Duke University
Modeling the mechanisms that regulate extracellular serotonin

2013 – Pres. **Prof. David Linden**
Department of Neuroscience, Johns Hopkins University
Functionality of regenerated serotonin neurons after lesions

2012 – Pres. **Prof. William Hutchinson**
Senior Scientist, Toronto Western Research Institute
Deep brain stimulation as a treatment for depression

2011 – Pres. **Prof. Shawn McElmurry**
Department of Engineering, Wayne State University
Trace metal measurements, fate and transport in environmental systems

2011 – Pres. **Prof. Michael Heien**
Department of Chemistry, University of Arizona
Ambient neurotransmitter levels

INVITED SEMINARS SINCE 2013

03/18	Plenary Session	Society Meeting of Monitoring Molecules *in Vivo*, Oxford, UK
02/18	Award Speaker	SEAC Young Investigator Award, Pittcon, Orlando, FL, USA
02/18	Award Speaker	Pittcon Achievement Award, Pittcon, Orlando, FL, USA
12/17	Seminar speaker	Department of Physiology and Pharmacology, Wake Forest University, NC, USA
11/17	Seminar speaker	Department of Chemistry, Florida State University, FL, USA
11/17	Invited speaker	Midwestern Universities Anal. Chemistry Conference, Ohio University, OH, USA
11/17	Invited speaker	Southeastern Meeting of the American Chemical Society, Charlotte, NC USA
10/17	Invited speaker	Meeting of the Electrochemical Society, National Harbor, MD, USA
08/17	Invited speaker	Brain in Flux, ISN Satellite Meeting, Paris, France
08/17	Seminar speaker	Department of Behavioral Neuroscience, Hiroshima University, Japan
08/17	Seminar speaker	Department of Psychiatry, University of Kyoto, Japan
07/17	Seminar speaker	Department of Bioengineering, Imperial College, London, UK
04/17	Invited speaker	Meeting of the American Chemical Society, San Francisco, CA, USA
03/17	Invited speaker	Pittcon, Chicago, IL, USA
11/16	Seminar speaker	Eli Lilly Company, IN, USA
10/16	Seminar speaker	Department of Neuroscience, Netherlands Neuroscience Institute, Netherlands
10/16	Seminar speaker	Department of Chemistry, University of Pittsburgh, PA, USA
10/16	Invited speaker	Midwestern Universities Analytical Chemistry Conference, Champaign, IL, USA
09/16	Seminar speaker	Department of Chemistry, University of Texas at San Antonio, TX, USA
09/16	Seminar speaker	Department of Physiology, University of Texas Health at San Antonio, TX, USA
03/16	Invited speaker	Pittcon, Atlanta, GA, USA
12/15	Invited speaker	American College of Neuropsychopharmacology, FL, USA
11/15	Seminar speaker	Department of Chemistry, University of Michigan, MI, USA
05/15	Seminar speaker	Department of Biomedical Engineering, University of South Carolina, SC, USA
03/15	Symposium chair	Pittcon, New Orleans, LA, USA
03/15	Invited speaker	Pittcon, New Orleans, LA, USA
03/15	Seminar speaker	Duke Institute of Brain Science, NC, USA
03/14	Symposium chair	Pittcon, Chicago, IL, USA
01/14	Invited speaker	GRC on Electrochemistry, Ventura, CA, USA
04/13	Seminar speaker	Department of Chemistry, Ohio State University, OH, USA
02/13	Seminar speaker	Department of Psychology, University of Michigan, MI, USA
02/13	Seminar speaker	Department of Medicinal Chemistry, University of Toledo, MI, USA
11/13	Seminar speaker	Department of Chemistry, Andrews University, MI, USA

PROFESSIONAL AFFILIATIONS

10/17 – Present	Board Member of *Analytical Chemistry* Features Panel
08/17 – Present	Member of the International Transmembrane Transporter Society
01/16 – Present	Board of Advisors, SEAC
07/14 – Present	Advisory Council for International Society for Monitoring Molecules *in Vivo*
01/12 – Present	Member of the American Chemical Society
09/10 – Present	Member of International Society for Monitoring Molecules *in Vivo*
11/07 – Present	Member of the International Serotonin Society
03/06 – Present	Member of SEAC

POST DOCTORAL STUDENTS

Alumni	David Cepeda (2012-2013), Pavithra Pathirathna (2016-2017)
Current	O.U. Yang (2017-present), Rachel Saylor (2015-present)

GRADAUTE STUDENTS

Alumni	Pavithra Pathirathna (2011-2016), Yuanyuan Yang (2011-2016), Thushani Siriwardhane (2012-2017), Srimal Samarnayake (2012-2017)
Current	Aya Abdalla (2013-present), Jordan Holmes (2015-present), Shane Berger (2015-present), Alyssa West (2015-present), Melinda Hersey (2015-present), Rhiannon Robke (2016-present), Anna Marie Buchanan (2017-present), Colby Witt (2017-present)