B. Jill Venton, Ph.D.

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Positions and Employment

Department Chair, Dept. Chemistry, University of Virginia, Charlottesville, VA 2019-present
Professor, Dept. Chemistry, University of Virginia, Charlottesville, VA 2016-present
Associate Professor, Dept. Chemistry, University of Virginia, Charlottesville, VA 2011-2016
Assistant Professor, Dept. of Chemistry, University of Virginia, Charlottesville, VA 2005-2011
Member, Neuroscience Graduate Program 2005- present

Research interests:

- Development of new carbon nanotube-based biosensors
- Electrochemical sensors for understanding adenosine signaling
- Measurements of neurotransmitters in *Drosophila*

Associate Editor, Analytical Methods (Royal Society of Chemistry) 2017-present

Postdoctoral Researcher, University of Michigan, Ann Arbor, MI 2003-2005
Advisors: Robert Kennedy (Chemistry) and Terry Robinson (Psychology)
Research: Capillary electrophoresis of amino acids changes during fear behavior

Education

Ph.D., Chemistry (Analytical), University of North Carolina, Chapel Hill, NC 2003
Advisor: Mark Wightman
Dissertation: Electrochemical detection of chemical dynamics in the rat brain

B.S., Chemistry, University of Delaware, Newark, DE 1998
Honors degree, *summa cum laude*
Research Advisor: Murray Johnston
Undergraduate thesis: Secondary structure of oligonucleotides probed by MALDI

Awards and Fellowships

ACS Advances in Measurement Science Lectureship 2022
Distinguished Researcher Award, Virginia Section of ACS 2019
President-elect, International Society for Monitoring Molecules in Neuroscience 2018
Society for Electroanalytical Chemistry (SEAC) Young Investigator Award 2011
Camille Dreyfus Teacher-Scholar 2010
American Chemical Society PROGRESS/Dreyfus Foundation Lectureship 2008
Eli Lilly Young Analytical Investigator Award 2007
Meade Endowment Honored Faculty 2007-2008
National Science Foundation CAREER award 2007-2012
NIH Postdoctoral Fellowship, NIDA institutional training grant 2003-2005
Charles N. Reilley Award, Pharmacia, outstanding analytical graduate student 2002
National Science Foundation Graduate Research Fellowship 1998-2001

Current Grants and Funding

NIH, National Institute on Drug Abuse (NIDA)
3/1/2022-12/31/2026 $629K/year (~150K/year to Venton) $2,900,000 total
"An investigation of focused ultrasound to treat opioid addiction" 1R01DA052893
Role: Mutli-PI (with Wendy Lynch, Wynn Legon as other Multi-PIs)

NIH, National Institute of Neurological Disease and Stroke (NINDS)
1/1/2022-12/31/2027 $600K/year (split between Venton/Zhu) $3,300,000 total
"Multiplexed neurochemical methods to understand adenosine neuromodulation" R01NS121014
Role: Multi-PI (Main PI with Julius Zhu)

NIH, National Institute of Neurological Disease and Stroke (NINDS)
8/2022-7/2027 $550K/year $2,600,000 total
"Tunable Carbon Electrodes for *in vivo* Neurotransmitter Detection" R01NS125663
Role: PI

National Institutes of Health, National Institute of Mental Health, 5/2022-5/2027, $1,818,346
"Real-time measurements of neurotransmission in *Drosophila melanogaster*" 1R01MH085159
Role: PI

Owens Family Fund 7/1/2021-6/30/2024 $100,000/year
For studies of neuromodulation and nanoelectrodes
Role: PI

***Oak Ridge National Laboratory Center for Nanoscale Materials User Facility** CNMS2012-070, CNMS2014-083, CNMS2016-022, CNMS2017-076, CNMS2019-034, CNMS2022-A-01117
"Carbon Nanomaterial Microelectrodes for Neurotransmitter Sensing"
While there is no money associated with this proposal, we receive 20 days of access to the National Lab nanoscale materials user facility.
Role: PI

Completed Funding

Virginia Dept. of Education, Math Science Partnership Program,
"VISTA ELIS at UVa" (3/1/2015-2/28/2018)
Role: Co-PI PI: Maeng (Curry School), Co-PIs Venton and Murphy (Astronomy)
$152,000 (Year 1), $303,000 (Year 2-3)
6 days summer salary year 1, 9 days summer salary year 2-3 for Venton

National Institutes of Health, National Institute of Neurological Diseases and Stroke,
5/2012-4/2018, $1,657,166
"Mechanism and function of transient adenosine signaling in the brain" 1R01NS076875
Role: PI

National Institutes of Health, National Institute on Drug Abuse, 4/2014-4/2017, $416,167
"Carbon nanotube fiber and yarn microelectrodes for high temporal resolution measurements of dopamine" 1R21DA037584-01
Role: PI

Biogen, Contract, 10/2014-6/2016, $50,000/year,
"Measurements of dopamine neurotransmission in fly models of Parkinson disease."

Role: PI

Dreyfus Foundation, Grant in Chemical Sciences, 1/2014-12/2015, $20,000
"Expanding Inquiry-based Chemistry Education at the Elementary School Level"
Role: PI

Camille Dreyfus Teacher-Scholar, Dreyfus Foundation, 5/2010-6/2016, $75,000
"Tiny sensors for tiny organisms: measuring neurotransmitter dynamics in the fruit fly brain"
Role: PI

National Science Foundation, 2/2007-1/2013, $550,000
"CAREER: Carbon nanotube modified microelectrodes for insect neurotransmitter detection"

National Institutes of Health, National Institute of Biomedical Imaging and Bioengineering, 8/2007-7/2009, $397,313
R21: "An electrochemical adenosine sensor for *in vivo* applications"

Eli Lilly Young Investigator Award, 10/2007-10/2010, $100,000

American Heart Association, 7/2007-6/2009, $132,000
"Mechanisms of adenosine formation during ischemia"

Distinguished Young Investigator Award, Fund for Excellence in Science and Technology, University of Virginia, 7/2006-6/2007, $50,000
"Monitoring fast neurochemical changes using capillary electrophoresis with electrochemical detection"

Jeffress Memorial Trust, 1/2006–12/2006, $25,000
"Development of an electrochemical adenosine sensor"

Professional Memberships

American Chemical Society
Society for Neuroscience
Society for Electroanalytical Chemistry
International Society for Electrochemistry
International Society for Monitoring Molecules *In Vivo*

Professional Service

Dept. Chair, Chemistry, University of Virginia	2019-
President Elect, International Society for Monitoring Molecules in Neuroscience	2018-
NASA review panel	2018
Associate Editor, Analytical Methods (Royal Society Journal)	2017-present
News and Features Advisory Board, Analytical Chemistry	2014-2017
C&EN News Advisory Board	2014-present
ACS award juror	2014-2018, 2021-present
Standing member, EBIT study section, NIH	2011-2017
Board of Directors, International Society for Monitoring Molecules *In Vivo*	2013-2017
Board of Directors, SEAC	2012-2015
Organizer and presenter, Regional Gas chromatography workshops	2013-2014

NSF Chemistry review panel	2013
Member, CEBRA review panel, NIDA (NIH)	2013
Organizer, Pittcon symposium	2012-2013
Journal Advisory Board, *The Analyst*	2008-2015
NSF Review Panel/ad hoc reviews	2008-present
Coordinator, Pittcon Networking Session for Young Faculty	2008

Dissertations Directed

Xenia Borue, PhD. (Neuroscience, MD/PhD) 5/2009
Mechanisms of Serotonergic Signaling in *Drosophila*.
Current position: Resident Physician, University of Pittsburgh

Christopher Green, M.S. (Chemistry) 9/2009
"Instrumental and Separation Optimization for researching the Pharmacokinetics and Pharmacodynamics of Amphetamine *in vivo"*
Current position: Pharmacy student, University of Washington

Megan L. Pajski, Ph.D. (Chemistry) 5/2011
Characterizing transient adenosine changes with fast-scan cyclic voltammetry
Current position: Assistant Professor, Mt. Olive College, NC

Phuong Vo Opper, MS (Chemistry) 8/2012
Nafion-carbon nanotube coated microelectrodes for detection of octopamine and tyramine in Drosophila
Current position: Research Technician, University of Virginia, Dept of Pathology

Trisha L. Vickrey, Ph.D. (Chemistry) 8/2012
Measurements of Dopamine in Drosophila using Fast-Scan Cyclic Voltammetry
Current position: Assistant Professor, Brevard College

Christopher B. Jacobs, PhD (Chemistry) 12/2012
Carbon Nanotube-based microelectrodes for enhanced detection of neurotransmitters
Current Position: Postdoc at Oak Ridge National Lab

Alexander G. Zestos, PhD (Chemistry), 5/2014
Novel Methods of Carbon Based Electrode Fabrication for Neurotransmitter Detection
Current position: Assistant Professor, American University

Ashley E. Ross, PhD (Chemistry), 5/2014
Electrochemical methods optimization to study the function of transient adenosine changes in brain slices
Current position: Assistant Professor, Cincinnati

Hillary R. Rees, MS (Chemistry), 5/2014
Electrochemical Characterization of Carbon Nanopipette Electrodes for Rapid Dopamine Detection

Ning Xiao, PhD (Chemistry), 8/2014
Measurements of optically and chemically stimulated neurotransmitter release in *Drosophila*

Michael Nguyen, PhD (Chemistry), 5/2015
The Characterization of Rapid Spontaneous Adenosine with Fast-scan Cyclic Voltammetry
Current position: Eurofins Lancaster Labs

Madelaine Denno, PhD (Chemistry), 5/2016
Detection and Quantification of Neurotransmitters in Drosophila melanogaster by Capillary Electrophoresis Fast-Scan Cyclic Voltammetry
Current Position: Leica

Eve Privman Champaloux, PhD (Neuroscience, MD/PhD), 6/2016
Dopamine Kinetics in a Drosophila Model of Parkinson Disease
Current Position: Resident Physician at University of Washington

Ryan P. Borman, MS (Chemistry), 6/2016
Automated algorithm for measurement of spontaneous adenosine transients in large electrochemical data sets
Current Position: PhD Student at Indiana University

Cheng Yang, PhD (Chemistry) 12/2016
Development of Electrochemical Microsensors for *in vivo* Neurotransmitter Detection
Current: Shire Pharmaceuticals

Poojan Pyakurel, PhD (Chemistry) 8/2017
Characterization of optically and chemically stimulated neurotransmitter release in *Drosophila melanogaster*

Scott Lee, PhD (Chemistry) 5/2018
Electrochemical methods for determining the mechanism of spontaneous adenosine release
Current Position: Forensic Chemist: South Dakota State Lab

Ying Wang, PhD (Chemistry) 7/2018
Electrochemical Detection of Rapid Adenosine Changes in the Brain
Current Position: Postdoc, Andrew Ewing, Gothenburg Sweden

Pumidech Puthongkham, PhD (Chemistry) 5/2020
Novel Microelectrodes and Methods for Real-Time Electrochemical Detection of Neurotransmitters
Current Position: Lecturer, Chulalongkorn University

Qun Cao, PhD (Chemistry) 12/2020
Nanofabrication of Carbon Electrodes for Neurotransmitter Detection
Current Position: Postdoc at Pittsburgh

Jason Borgus, PhD (Chemistry) 5/2021
Determining the Role of Spontaneous Adenosine as a Neuromodulator using Fast Scan Cyclic Voltammetry
Current position: UVA College at Wise

Yuanyu Chang, PhD (Chemistry) 5/2022

Refereed Publications

.

From work done at Virginia:

106.) Y Chang, Q Cao, **BJ Venton**. 3D printing for customized carbon electrodes. Current Opinion in Electrochemistry. **2023**.

105.) E Dumitrescu, JM Copeland, **BJ Venton**. Parkin Knockdown Modulates Dopamine Release in the Central Complex, but Not the Mushroom Body Heel, of Aging Drosophila. *ACS Chemical Neuroscience.* **2023,** 14 (2), 198-208. DOI: 10.1021/acschemneuro.2c00277. PMC9897283

104.) Z. Shao, L Wilson, Y Chang, **BJ Venton**. MPCVD-Grown Nanodiamond Microelectrodes with Oxygen Plasma Activation for Neurochemical Applications. *ACS Sensors.* **2022**. 7 (10), 3192-3200. PMC9855027

103.) M Shin, **BJ Venton**. Fast-Scan Cyclic Voltammetry (FSCV) Reveals Behaviorally-Evoked Dopamine Release by Sugar Feeding in Adult Drosophila Mushroom Body. *Angewandte Chemie Int.* **2022**. 61 (44), e202207399. PMC9613606

102.) Z Shao, Y Chang, **BJ Venton**. Carbon microelectrodes with customized shapes for neurotransmitter detection: A review. *Analytica Chimica Acta*. **2022**. 1223, 340165. PMC9867599

101.) KE Dunham, **BJ Venton**. SSRI antidepressants differentially modulate serotonin reuptake and release in Drosophila. *J Neurochem*. **2022**, 162, 404-414. PMC9427694

100.) Q Zia*,* **BJ Venton,** KH DuBay. Structure and Dynamics of Adsorbed Dopamine on Solvated Carbon Nanotubes and in a CNT Groove Molecules. *Molecules*. **2022**, 27(12), 3768.

99.) ST Lee, Y Chang, **BJ Venton**. Pannexin1 channels regulate mechanically stimulated but not spontaneous adenosine release. *Analytical and Bioanalytical Chemistry* **2022**. 414 (13), 3781-3789.

98.) Z Shao and **BJ Venton** Different Electrochemical Behavior of Cationic Dopamine from Anionic Ascorbic Acid and DOPAC at CNT Yarn Microelectrodes. *Journal Electrochemical Society* **2022**, *169*, 026506. PMC8871592

97.) Y Chang, **BJ Venton**. Dual-Channel Electrochemical Measurements Reveal Rapid Adenosine is Localized in Brain Slices. *ACS Chemical Neuroscience*. **2022**, *13,* 4, 477-485. PMC8867842

96.) Q Jia, C Yang, **BJ Venton**, KH Dubay. Atomistic simulations of dopamine diffusion dynamics on a pristine graphene surface. *ChemPhysChem*. **2022**, *23*, 4, e202100783.

95.) Q Cao, Z Shao, Y Chang, D Hensley, **BJ Venton**. Carbon nanospike coated nanoelectrodes for measurements of neurotransmitters. *Faraday Discussions*. **2022**, 233**,** 303-314. PMC8983598.

94.) J Cabana*, T Alaan, GW Crabtree, MC Hatzell, K Manthiram, DA Steingart, I Zenyuk, F Jiao, A Vojvodic, JY Yang, NP Balsara, KA Persson, DJ Siegel, CL Haynes, J Mauzeroll, M

Shen, **BJ Venton**, N Balke, J Rodríguez-López, DR Rolison, R Shahbazian-Yassar, V Srinivasan, S Chaudhuri, A Couet, J Hattrick-Simpers. NGenE 2021: Electrochemistry Is Everywhere. *ACS Energy Lett.* **2021**, *7*, 1, 368–374.

93.) JR Borgus, Y Wang, DJ DiScenza, **BJ Venton**. Spontaneous adenosine and dopamine co-transmission in the caudate-putamen is regulated by adenosine receptors. *ACS Chemical Neuroscience.* **2021**, 12, 4371-4379. PMC8867842

92.) M Ganesana, **BJ Venton**. Spontaneous, transient adenosine release is not enhanced in the CA1 region of hippocampus during severe ischemia models. *Journal of Neurochemistry.* **2021** 159, 887-900. PMC8627433

91.) Q Cao, J Lucktong, Z Shao, Y Chang, **BJ Venton**. Electrochemical treatment in KOH renews and activates carbon fiber microelectrode surfaces. *Analytical and Bioanalytical Chemistry*, **2021**, 413, 6737-6746. PMC8551070

90.) J Wan, W Peng, X Li, T Qian, K Song, J Zeng, F Deng, S Hao, J Feng, P Zhang, Y Zhang, J Zou, S Pan, M Shin, **BJ Venton**, JJ Zhu, M Jing, M Xu, Y Li. A genetically encoded sensor for measuring serotonin dynamics. *Nature Neuroscience.* **2021**, 24, 746–752. PMC8544647

89.) Q Cao, Z Shao, N Lavrik, D Hensley, **BJ Venton.** Influence of geometry on thin layer and diffusion processes at carbon electrodes. *Langmuir.* **2021**, 37, 8, 2667–2676. PMC7937503

88.) **BJ Venton**, RR Pompano. Strategies for enhancing remote student engagement through active learning. *Analytical and Bioanalytical Chemistry*, **2021**, 413, 1507-1512.

87.) E Privman Champaloux, N Donelson, P Pyakurel, D Wolin, L Ostendorf, M Denno, R Borman, C Burke, JC Short-Miller, MR Yoder, JM Copeland, S Sanyal, **BJ Venton**. Ring Finger Protein 11 (RNF11) Modulates Dopamine Release in Drosophila. *Neuroscience*. **2021**, 452, 37-48. PMC7769989

86.) M Shin, JM Copeland, **BJ Venton**. Real-Time measurement of stimulated dopamine release in compartments of the adult *Drosophila* melanogaster mushroom body. *Analytical Chemistry*. **2020**. 92 (21) 14398–14407. PMC7902153

85.) KE Dunham, **BJ Venton.** Improving serotonin fast-scan cyclic voltammetry detection: new waveforms to reduce electrode fouling. *Analyst*. **2020**, 145, 7437-7446. PMC7655692

84.) Y Chang, Y Wang, **BJ Venton**. A1 and A2A receptors modulate spontaneous adenosine but not mechanically-stimulated adenosine in the caudate. *ACS Chemical Neuroscience*. **2020**. 11(20): 3377–3385. PMC7881830

83.) Z Shao, P Puthongkham, K Hu, R Jia, MV Mirkin, **BJ Venton**.Thin layer cell behavior of CNT yarn and cavity carbon nanopipette electrodes: Effect on catecholamine detection. *Electrochimica Acta*. **2020,** 361(20), 137032. PMC7513959

82.) Q. Cao, M Shin, NV Lavrik, **BJ Venton**. 3D-Printed carbon nanoelectrodes for *in vivo* neurotransmitter sensing. *NanoLetters*. **2020**, 20(9), 6831–6836. PMC7484348

81.) P Puthongkham, J Rocha, JR Borgus, M Ganesana, Y Wang, Y Chang, A Gahlmann, **BJ Venton**. Structural similarity image analysis for detection of adenosine and dopamine in fast-

scan cyclic voltammetry color plots. *Analytical Chemistry.* **2020**, 92, 10485-10494. PMC7478140

80.) Y Chang, **BJ Venton**. Optimization of graphene oxide-modified carbon-fiber microelectrode for dopamine detection. *Analytical Methods.* **2020**, 12, 2893-2902. PMC7331934.

79.) Y Wang, J Copeland, M Shin, Y Chang, **BJ Venton**. CD73 or CD39 deletion reveals different mechanisms of formation for spontaneous and mechanically-stimulated adenosine release and sex specific compensations in ATP degradation. *ACS Chemical Neuroscience.* **2020***.* 11 (6), 919-928. PMC7335217

78.) J. Borgus, P Puthongkham, **BJ Venton**. Complex sex and estrous cycle differences in spontaneous transient adenosine. *J. Neurochemistry*, **2020**, 153 (2), 216-229. PMC7310595

77.) P Puthongkham, **BJ Venton**. Recent advances in fast-scan cyclic voltammetry. *Analyst*, **2020**,145, 1087-1102. PMC7028521

76.) **BJ Venton** and Q Cao. Fundamentals of fast-scan cyclic voltammetry for dopamine detection. *Analyst*, **2020**,145, 1158-1168. PMC7028514

75.) M Shin, DA Friedman, DM Gordon, **BJ Venton**. Measurement of natural variation of neurotransmitter tissue content in red harvester ant brains among different colonies. *Analytical and Bioanalytical Chemistry.* **2020**, 412(24), 6167-6175. PMC7338244

74.) Q Cao, DK Hensley, N.V. Lavrik, **B.J. Venton**. Carbon nanospikes have better electrochemical properties than carbon nanotubes due to greater surface roughness and defect sites. *Carbon*, **2019**, 155, 250-257. PMC6777722

73.) P Puthongkham, **BJ Venton**. Nanodiamond coating improves the sensitivity and antifouling properties of carbon fiber microelectrodes. *ACS Sensors*, **2019** 4, 9, 2403-2411. PMC6776076

72.) P. Puthongkham, S.T. Lee, **B.J. Venton**. Mechanism of histamine oxidation and electropolymerization at carbon electrodes. *Analytical Chemistry*, **2019,** 91, 13, 8366-8373. PMC6777000

71.) R.E. Schmitt, M.R. Messick, B.C. Shell, E.K. Dunbar, H.-F. Fang, K.L. Shelton, **B.J. Venton** S.D. Pletcher, M. Grotewiel. Dietary yeast influences ethanol sedation in *Drosophila* via serotonergic neuron function. *Addiction Biology*. **2019,** e12779. PMC6895393

70.) C. Yang, K. Hu, D. Wang, Y.S Zubi, S.T. Lee, P. Puthongkham, M.V. Mirkin, **B.J. Venton**. Cavity carbon nanopipette electrodes for dopamine detection*. Analytical Chemistry*. **2019**. 91, 7, 4618-4624. PMC6526101

69.) Y. Wang, **B.J. Venton**. Caffeine modulates spontaneous adenosine and oxygen changes during ischemia and reperfusion. *ACS Chemical Neuroscience.* **2019**. 10(4):1941-1949. PMC7003050

68.) M. Ganesana, E. Trikantzopoulos, Y. Maniar, S.T. Lee, **B.J. Venton**. Development of a novel micro biosensor for in vivo monitoring of glutamate release in the brain. *Biosensors and Bioelectronics*. **2019,** 130:103-109. PMC6449154

67.) Q. Cao, P. Puthongkham, **B.J. Venton**. Review: New insights into optimizing chemical and 3D surface structures of carbon electrodes for neurotransmitter detection. *Anal. Methods.* **2019** 11(3):247-261. PMC6366673

66.) Y. Wang, **B.J. Venton**. Comparison of spontaneous and mechanically-stimulated adenosine release in mice. *Neurochemistry International*. **2019**. 124:46-50. PMC6369016

65.) M. Shin, Y. Wang, J.R. Borgus, and **B.J. Venton**. Electrochemistry at the Synapse. *Annual Review of Analytical Chemistry.* **2019**. 12:297-321. PMC6989097

64.) C. Yang, Q. Cao, P. Puthongkham, S.T. Lee, M. Ganesana, N.V. Lavrik, **B.J. Venton**. 3D-printed carbon electrodes for neurotransmitter detection. *Angew. Chemie.* **2018**, 57, 14255-14259. PMC6334753

63.) M. Shin, **B.J. Venton**. Electrochemical measurements of acetylcholine-stimulated dopamine release in adult *Drosophila melanogaster* brains. *Anal. Chem.,* **2018**. 90(17), 10318-103. PMC6135655

62.) R.M.B. Dyer, **B.J. Venton**, J.L. Maeng. Expanding university student outreach: Professional development workshops for teachers led by graduate students. *J. Chem. Ed.* **2018**. 95 (11), 1954–1959.

61.) A.G. Zestos, **B.J. Venton**. Carbon nanotube fiber microelectrodes for high temporal measurements of dopamine. *J. Electrochem. Soc.* **2018**. 165 (12), G3071-G3073. PMC6121781

60.) M Ganesana, **B.J. Venton**. Early changes in transient adenosine during cerebral ischemia and reperfusion injury. *PLoS One* **2018**. 13 (5), e0196932. PMC5969733

59.) P. Puthongkham, **B.J. Venton**. Carbon nanohorn-modified carbon fiber microelectrodes for dopamine detection. *Electroanalysis.* **2018**. 30, 1073 – 1081. PMC6317378

58.) M. Shin, J.M. Copeland, **B.J. Venton**. *Drosophila melanogaster* as a model system for neurotransmitter measurements. *ACS Chemical Neuroscience*. **2018**. 9, 1872-1883. PMC6093779

57.) P. Pyakurel, M. Shin, **B.J. Venton**. Nicotinic acetylcholine receptor (nAChR) mediated dopamine release in larval Drosophila melanogaster. *Neurochemistry International*. **2018**. 114, 33-41. PMC5835409

56.) S.T. Lee and **B.J. Venton**. Regional variations of spontaneous, transient adenosine release in brain slices. *ACS Chemical Neuroscience*. **2018**, 9, 505–513. PMC6050173

55.) C. Yang, **B.J. Venton**. High performance, low cost carbon nanotube yarn based 3D printed electrodes compatible with a conventional screen printed electrode system. *2017 IEEE International Symposium on Medical Measurements and Applications (MeMeA): IEEE Xplore.* **2017**. p. 100-105. PMC5589149.

54.) C. Yang, Y. Wang, C.B. Jacobs, I. Ivanov, **B.J. Venton**. O_2 plasma etching and antistatic gun surface modifications for CNT yarn microelectrode improve sensitivity and antifouling properties. *Analytical Chemistry*. **2017**. 89 (10), 5605–5611. PMC5575992

53.) C. Yang, E. Trikantzopoulos, C.B. Jacobs, **B.J. Venton**. Evaluation of carbon nanotube fiber microelectrodes for neurotransmitter detection: Correlation of electrochemical performance and surface properties. *Analytica Chimica Acta*. **2017**, 965, 1-8. PMC5380235.

52.) M.D. Nguyen, Y. Wang, M. Ganesana, **B.J. Venton**. Transient adenosine release is modulated by NMDA and $GABA_B$ receptors. *ACS Chemical Neuroscience*, **2017**, 8(2), 376–385. PMC5558448

51.) R.P. Borman, Y. Wang, M.D. Nguyen, M. Ganesana, S.T. Lee, **B.J. Venton**. Automated algorithm for detection of transient adenosine release. *ACS Chemical* Neuroscience, **2017**, 8 (2), 386–393. PMC5312768

50.) M. Ganesana, S.T. Lee, Y. Wang, **B.J. Venton**. Analytical techniques in neuroscience: Recent advances in imaging, separation, and electrochemical methods. *Analytical Chemistry.* **2017**, 89(1), 314-341. PMC5260807

49.) E. Trikantzopoulos, C. Yang, M. Ganesana, Y. Wang, **B.J. Venton**. Novel carbon-fiber microelectrode batch fabrication using a 3D-printed mold and polyimide resin. *Analyst*. **2016**, 141, 5256-5260. PMC5019535

48.) Y. Wang, **B.J. Venton**. Correlation of transient adenosine release and oxygen changes in the caudate-putamen. *Journal of Neurochemistry.* **2017**. 140 (1), 13–23. PMC5164875

47.) P. Pyakurel, E. Privman Champaloux, **B.J. Venton**. Fast-scan cyclic voltammetry (FSCV) detection of endogenous octopamine in *Drosophila melanogaster* ventral nerve cord. *ACS Chemical Neuroscience*. **2016** 7 (8), 1112-1119. PMC4988909

46.) C. Yang, E. Trikantzopoulos, M.D. Nguyen, C.B. Jacobs, Y. Wang, M. Mahjouri-Samani, I.N. Ivanov, **B.J. Venton**. Laser treated carbon nanotube yarn microelectrodes for rapid and sensitive detection of dopamine in vivo. *ACS Sensors*. **2016** 1 (5), 508-515. PMC4944855

45.) M.E. Denno, E. Privman, R.P. Borman, D.C. Wolin, **B.J. Venton**. Quantification of histamine and carcinine in *Drosophila melanogaster* tissues. *ACS Chem. Neurosci*. **2016**. *7* (3), 407–414. PMC4798850.

44.) C. Yang, C B. Jacobs, M. Ganesana, M.D. Nguyen, A.G. Zestos, I.N. Ivanov, A.A. Puretzky, C.M. Rouleau, D.B. Geohegan, **B.J. Venton** Carbon nanotubes grown on metal microelectrodes for the detection of dopamine. *Analytical Chemistry.* **2016** 88 (1), 645-652. PMC4718531

43.) A.G. Zestos, C. Yang, C.B Jacobs, D.L. Hensley, and **B.J. Venton**. Carbon nanospikes grown on metal wires as microelectrode sensors for dopamine. *Analyst*. **2015**, 140, 7283-7290. PMC4618699

42.) M.D. Nguyen, A.E. Ross, M. Ryals, S.T. Lee, **B.J. Venton**. Clearance of rapid adenosine release is regulated by nucleoside transporters and metabolism. *Pharmacology Research and Perspectives*. **2015** 3(6), e00189. PMC4777247.

41.) E. Privman, **B.J. Venton**. Comparison of dopamine kinetics in the larval *Drosophila* ventral nerve cord and protocerebrum with improved optogenetic stimulation. *Journal of Neurochemistry*. **2015**, 135, 695-704. PMC4636934

40.) C. Yang, M.E. Denno, P. Pyakurel, **B.J. Venton**. Recent trends in carbon nanomaterial-based electrochemical sensors for biomolecules: A review. *Analytica Chimica Acta.* **2015,** 887, 17-37. PMC4557208

39.) N. Xiao and **B.J. Venton**. Characterization of dopamine releasable and reserve pools in *Drosophila* larvae using ATP/$P2X_2$ mediated stimulation. *Journal of Neurochemistry.* **2015***,* 134, 445-454. PMC4496298.

38.) H.R. Rees, S.E. Anderson, E. Privman, H.H. Bau, **B.J. Venton**. Carbon nanopipette electrodes for dopamine detection in *Drosophila*. *Analytical Chemistry*. **2015** 87 (7), 3849-55. PMC4400659.

37.) M.E. Denno, E. Privman, **B.J. Venton**. Analysis of neurotransmitter tissue content of *Drosophila melanogaster* in different life stages. *ACS Chemical Neuroscience*. **2015.** 6 (1), 117-23. PMC4304510.

36.) M.D. Nguyen**, B.J. Venton**. Fast-scan cyclic voltammetry for the characterization of rapid adenosine release. *Computational and Structural Biology Journal*. **2015**, 13, 47-54. PMC4720017

35.) A.E. Ross, **B.J. Venton**. Adenosine transiently modulates stimulated dopamine release in the caudate putamen via A1 receptors. *Journal of Neurochemistry*, **2015** 132 (1) 51-60. PMC4270927.

34.) A.G. Zestos, C.B. Jacobs, E. Trikantzopoulos, **B.J. Venton**. Polyethyleneimine carbon nanotube fiber electrodes for enhanced detection of neurotransmitters. *Analytical Chemistry*. **2014**. 86 (17), 8568-75. PMC4151793

33.) A.E. Ross, **B.J. Venton**. Sawhorse waveform voltammetry for the selective detection of adenosine, ATP, and hydrogen peroxide. *Analytical Chemistry*. **2014**. 86 (15), 7486-7493. PMC4368507.

32.) N.Xiao, E. Privman, **B.J. Venton**. Optogenetic control of serotonin and dopamine release in *Drosophila* larvae. *ACS Chemical Neuroscience*. **2014**. 5(8), 666-673. PMC4140588

31.) C.B. Jacobs, I.N. Ivanov, M.D. Nguyen, A.G. Zestos, **B.J. Venton**. High temporal resolution measurements of dopamine with carbon nanotube yarn microelectrodes. *Analytical Chemistry*. **2014,** 86 (12), 5721-5727. PMC4063327

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1.) BE Kumara Swamy and **BJ Venton.** Subsecond detection of physiological adenosine concentrations using fast-scan cyclic voltammetry. *Analytical Chemistry*, **2007**, 79, 744-750.

<u>Articles from Work Previous to Virginia:</u> (Note: published under both Venton and Trafton.)

16.) B.M. Kile, T.S. Guillot, **B.J. Venton**, W.C. Wetsel, G.J. Augustine, R.M. Wightman. Synapsins Differentially Control Dopamine and Serotonin Release. *Journal of Neuroscience,* **2010**, 30, 9762-9770. PMCID: PMC2923550

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14.) **B.J. Venton**, R.T. Kennedy, T.E. Robinson, S. Maren. Dynamic increases in glutamate and GABA in the basolateral amygdala during acquisition and expression of conditioned fear. *European Journal of Neuroscience,* **2006,** 12, 3391-3398.

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12.) D. Gitler, J. Feng, Y. Takagishi, V.M. Pogorelov, R.M. Rodriguiz; **B.J. Venton,** P.E.M. Phillips, Y. Ren, H.-T. Kao, R.M. Wightman, P. Greengard, P, W.C. Wetsel, G.J. Augustine. Synaptic vesicle trafficking and drug addiction in synapsin triple knockout mice. *Cell Biology of Addiction,* **2006**, 341-359.

11.) C.J. Watson, **B.J. Venton**, R.T. Kennedy. *In vivo* measurements of neurotransmitters by microdialysis sampling. *Analytical Chemistry,* **2006**, 78, 1391-1399.

10.) **B.J. Venton**, T.E. Robinson, R.T. Kennedy. Transient changes in nucleus accumbens amino acid concentrations correlate with individual responsivity to the predator fox odor 2,5-dihydro-2,4,5-trimethylthiazoline. *Journal of Neurochemistry,* **2006**, 96, 236-246.

9.) **B.J. Venton**, H. Zhang, P.A. Garris, D. Sulzer, P.E.M. Phillips, R.M. Wightman. Real-time decoding of dopamine neurotransmission in the caudate-putamen during tonic and phasic firing. *Journal of Neurochemistry,* **2003**, 87, 1284-1295.

8.) **B.J. Venton** and R.M. Wightman. Psychoanalytical electrochemistry: dopamine and behavior. *Analytical Chemistry*, **2003**, 75, 414A-421A.

7.) D.L. Robinson, **B.J. Venton**, M.L. Heien, R.M. Wightman. Detecting subsecond dopamine release with fast-scan cyclic voltammetry in vivo. *Clinical Chemistry*, **2003**, 49, 1763-1773.

6.) P.A. Garris, E.A. Budygin, P.E.M. Phillips, **B.J. Venton**, D.L. Robinson, B.P. Bergstrom, G.V. Rebec, R.M. Wightman. A role for presynaptic mechanisms in the actions of nomifensine and haloperidol. *Neuroscience,* **2003**, 118, 819-829.

5.) **B.J. Venton**, D.J. Michael, R.M. Wightman. Correlation of local changes in extracellular oxygen and pH that accompany dopaminergic terminal activity in the rat caudate-putamen. *Journal of Neurochemistry,* **2003**, 84, 373-381.

4.) K.P. Troyer, M.L. Heien, **B.J. Venton**, R.M. Wightman. Neurochemistry and electroanalytical probes. *Current Opinion in Chemical Biology*, **2002,** 6, 696-703.

3.) **B.J. Venton**, K.P. Troyer, R.M. Wightman. Response times of carbon fiber microelectrodes to dynamic changes in catecholamine concentration. *Analytical Chemistry*, **2002**, *74*, 539-546.

2.) D.L. Robinson, P.E.M. Phillips, E.A. Boudygin, **B.J. Trafton**, P.A. Garris, R.M. Wightman. Sub-second changes in accumbal dopamine during sexual behavior in male rats. *NeuroReport*, **2001**, 12, 2549-2552.

1.) B.D. Bath, D.J. Michael, **B.J. Trafton**, J.D. Joseph, P.L. Runnels, R.M. Wightman. Subsecond adsorption of dopamine at carbon-fiber microelectrodes. *Analytical Chemistry*, **2000**, *72*, 5994-6002.

Book Chapters

D. DiScenza and **B.J. Venton**. Voltammetric Methods. In *Electrochemistry for Bioanalysis*. Patel, B. editor. Elsevier. **2020**.

C. Yang and **B.J. Venton**. Carbon Nanomaterials for Neuroanalytical Chemistry. In Nanocarbons for Electroanalysis. Wiley. **2017**.

A.E. Ross and **B.J. Venton.** Electrochemical Detection of Adenosine *In Vivo.* Compendium of In Vivo Monitoring in Real-Time Molecular Neuroscience. *Volume 1: Fundamentals and Application.* World Scientific: Singapore, G.S. Wilson, A.C. Michael, editors, **2015**.

M.G. Roper, C. Guillo, and **B.J. Venton**. High speed electrophoretic separations. In "Handbook of Capillary and Microchip Electrophoresis and Associated Microtechniques" CRC Press: New York. J.P. Landers, editor, **2008**.

Patents

1. Yang, C., Venton, B., Trikantzopoulos, E.,; Rapid Prototype Three Dimensional Printed Mold for Electrochemical Sensor Fabrication Method and Related Systems and Devices thereof, U.S. Provisional Patent Application Serial No. 62/375,722
2. Yang, C., Venton, B.,; High Performance, Low Cost Carbon Nanotube Yarn based 3D Printed Electrodes Compatible with Screen Printed Electrode System, U.S. Provisional Patent Application Serial No. 62/422,320
3. Yang, C., Venton, B., O_2 Plasma Etching and Anti-Static Gun Surface Modifications for CNT Yarn Microelectrode Improve Sensitivity and Anti-Fouling Properties, U.S. Provisional Patent

Science Education Videos

JoVE Science Education Database. *Essentials of Analytical Chemistry.* Capillary Electrophoresis (CE). JoVE, Cambridge, MA, doi: 10.3791/10226 (2016).

JoVE Science Education Database. *Essentials of Analytical Chemistry.* Ion-Exchange Chromatography. JoVE, Cambridge, MA, doi: 10.3791/10269 (2016).

JoVE Science Education Database. *Essentials of Analytical Chemistry.* Calibration Curves. JoVE, Cambridge, MA, doi: 10.3791/10188 (2016).

JoVE Science Education Database. *Essentials of Analytical Chemistry.* Ultraviolet-Visible (UV-Vis) Spectroscopy. JoVE, Cambridge, MA, doi: 10.3791/10204 (2016).

JoVE Science Education Database. *Essentials of Analytical Chemistry.* Sample Preparation for Analytical Preparation. JoVE, Cambridge, MA, doi: 10.3791/10205 (2016).

JoVE Science Education Database. *Essentials of Analytical Chemistry.* Gas Chromatography (GC) with Flame-Ionization Detection. JoVE, Cambridge, MA, doi: 10.3791/10187 (2016).

JoVE Science Education Database. *Essentials of Analytical Chemistry.* Internal Standards. JoVE, Cambridge, MA, doi: 10.3791/10225 (2016).

Invited Lectures (from work at Virginia)

ACS Advances in Measurement Sciences, Awards Address (Virtual Symposium). **Oct 2022**
"Multiplexed measurements of neurotransmitters"

Monitoring Molecules in Neuroscience Conference, **June 2022**
"Regulation of Spontaneous and Mechanosensitive Adenosine Release"

Faraday Discussions, **Nov**. **2021**
"Carbon nanospike-coated nanoelectrodes for measurements of neurotransmitters"

IUPUI, **Sept**. **2021**
"New carbon electrodes for Neurochemistry"

NGenE: Next Generation Electrochemistry 2021 (online), **June 2021**
"Future of in vivo electrochemistry"

ACS Measurement Science Symposia (online), **June 2021**
"3D Printed Carbon Electrodes for Neurotransmitter Measurements"

Electrochemical Society Webinar **May 2021**
"Novel Carbon electrodes for Neurochemistry"

University of Arizona, **Oct. 2020**
New Carbon Electrodes for Neurochemistry

Pittcon, March 2020
"Monitoring Neurotransmitter Release in *Drosophila*: Moving toward in vivo Studies"

Pittcon, March 2020
"Characterization of Rapid Adenosine Signaling in the Brain"

ACS Virginia Section, Distinguished Researcher Award Lecture, Jan. **2020**
"Analytical Neurochemistry: New Techniques Uncover Rapid Neurochemical Signaling"

St. Jude Research Hospital, Nov. **2019**
"Rapid Adenosine Signaling in the Brain"

Electrochemical Society, Atlanta, Georgia, Oct. **2019**
"New Carbon Electrodes for Neurochemistry"

The College of New Jersey, Oct. **2019**
""New analytical techniques for real-time measurements of neurotransmitters in Drosophila"

University of Virginia, Materials Science Department, Sept. **2019**
"New Carbon Electrodes for Neurochemistry"

University of Cincinnati, Oesper Symposium, Sept. **2019**
"New Carbon Electrodes for Neurochemistry"

Catholic University, Santiago, Chile April **2019**
Chemistry Dept: "New Carbon Electrodes for Neurochemistry"
Biology Dept: "Developing a Tool Kit for Neurochemical Measurements in Drosophila"

Pittcon, Philadelphia, PA, March **2019**
"Expanding the Tool Kit for Measurements of Neurotransmitters in Drosophila"

Center for Electrochemistry, University of Texas, Feb. **2019**
"Tunable Carbon Electrodes for Neurotransmitter Detection"

Peking University (Institute for Molecular Medicine), Sept. **2018**
"New Tools for Measuring Rapid Neurochemical Changes: Insight into Dopamine and Adenosine Signaling"

Wuhan University (Dept. Chemistry), Sept. **2018**
"New electrochemical tools for neurotransmitter detection"

Institute of Chemistry, Chinese Academy of Sciences, Sept. **2018**
"New electrochemical tools for neurotransmitter detection"

Remin University, Beijing, Sept. **2018**
"New electrochemical tools for neurotransmitter detection"

Shaanxi Normal University, Xi'an, China, Sept. **2018**
"New electrochemical tools for neurotransmitter detection"

American Chemical Society Meeting, Boston, MA Aug. **2018**
"Carbon nanomaterial electrodes for neurochemistry applications"

Longwood University, Farmville, VA April **2018**
"New analytical techniques for real-time measurements of neurotransmitters in Drosophila"

Monitoring Molecules in Neuroscience, Oxford, England, March **2018**
"Mechanism and function of spontaneous adenosine transients"

Pittcon, Orlando FL, March **2018**
"Improving Neurotransmitter Detection with Carbon Nanomaterial Electrodes"

Pittcon, Orlando, FL, March **2018**
"A Better Understanding of the Effect of Surface Roughness on the Electrochemical Detection of Neurotransmitters"

SERMACS (Southeast Regional ACS Meeting), Nov. **2017**
"New methods to stimulate neurotransmitter release in *Drosophila*"

SERMACS (Southeast Regional ACS Meeting), Nov. **2017**
"Carbon nanomaterial electrodes for neuroscience applications"

Lebanon Valley College, Anisville, PA, **2017**
"New analytical techniques for real-time measurements of neurotransmitters"

Electrochemical Society Meeting, National Harbor, MD Oct. **2017**
"Tunable CNT Fiber and Yarn Microelectrodes for Measurements of Different Neurochemicals"

Electrochemical Society Meeting, National Harbor, MD Oct. **2017**
New Methods to Fabricate Electrodes for Neurotransmitter Measurements

International Society for Electrochemistry, Providence, RI, Aug. **2017** (keynote address)
"Carbon Nanomaterial Electrodes for Neuroscience Applications"

IEEE International Symposium on Medical Measurements and Applications (MeMeA), Rochester, MN (Mayo Clinic) May **2017**
High performance, low cost carbon nanotube yarn based 3D printed electrodes compatible with a conventional screen printed electrode system.

North Dakota State University (Physics), Fargo, ND March **2017**
"Carbon nanomaterial electrodes for neuroscience applications"

Pittsburgh Conference on Analytical Chemistry, March **2017**
"Tunable carbon nanomaterial electrodes for neurochemistry applications"

SciX, Minneapolis, MN Sept. **2016**
"Detecting dopamine changes in *Drosophila* models of Parkinson disease"

Monitoring Molecules In Neuroscience, Gothenburg, Sweden, May **2016**
"Detecting dopamine changes in *Drosophila* models of Parkinson disease"

ACS Virginia section meeting, April **2016**
"Psychoanalytical" Chemistry: Using analytical tools to measure brain chemistry"

Pittsburgh Conference on Analytical Chemistry, March **2016**
"CE-FSCV for Determining Neurotransmitter Tissue Content in *Drosophila* Disease Models"

University of Virginia, Neuroscience seminar program, Oct. **2016**
"New Tools for Measuring Rapid Neurochemical Changes: Insight into Dopamine and Adenosine Signaling"

University of Virginia, Psychobiology seminar program, Sept. **2016**
"A rapid modulatory role for adenosine in the brain"

Pittsburgh Conference on Analytical Chemistry, March **2015**
"Carbon nanomaterial based microelectrodes for neurotransmitter detection"

Pittsburgh Conference on Analytical Chemistry, March **2015**
"Genetic Control of Neurotransmission in *Drosophila"*

Wayne State University, Dept. of Chemistry, Detroit, MI, Nov. 4, **2014**
"Developing rapid tools for *in vivo* neurotransmitter measurements"

International Society for electrochemistry. Lausanne, Switzerland, Sept. 1, **2014**
"New Carbon Electrodes For Neurochemistry: Carbon Nanomaterial Fibers, Yarns, Spikes, and Pipettes"

Monitoring Molecules in Neuroscience, Los Angeles, CA, Aug. 7, **2014**
"Optogenetic control of serotonin and dopamine release in *Drosophila"*

Purines 2014, Bonn, Germany, July 27, **2014**
"Mechanism and function of rapid adenosine release in the brain"

NanoSafe Conference, Charleston, WV, April 27, **2014**
"Carbon nanotube based microelectrodes for neurotransmitter detection"

Biogen. Boston, MA, Feb. 25, **2014**
"Real time measurements of dopamine and serotonin neurotransmission in *Drosophila"*

University of Arkansas, Fayetteville, AK, Nov. 6, **2013**
"Developing rapid tools for in vivo neurotransmitter measurements"

Salisbury University, Salisbury, MD, Sept. 10, **2013**
"New analytical techniques for measuring neurotransmitters in the fruit fly"

Pittsburgh Conference on Analytical Chemistry, Philadelphia, PA, March 20, **2013**
"Microfluidics in a sophomore level analytical lab"

Pittsburgh Conference on Analytical Chemistry, March 19, **2013**
"Fast-scan cyclic voltammetry for measuring spontaneous adenosine release in vivo."

University of Minnesota, Dept. of Chemistry (student invited speaker), Feb. 25, **2013**
"Developing new tools for rapid neurotransmitter measurements in vivo"

Notre Dame University, Dept. of Chemistry, Dec. 10, **2012**
"Microelectrodes for real-time measurements of neurotransmitters *in vivo"*

Janelia Farm, Howard Hughes Medical Institute, Oct. 23, **2012**
"Electrochemical sensors for measurements of serotonin and dopamine in *Drosophila"*

University of Maryland, Baltimore County, Dept. of Chemistry, Oct. 9, **2012**
"Developing new tools for rapid neurotransmitter measurements in vivo"

Monitoring Molecules in Neuroscience, London, England, Sept. 16, **2012**
"Electrochemical Measurements of Serotonin in Drosophila"

Purines 2012, Fukuoka, Japan, May 31, **2012**
"Adenosine A1 receptors modulate spontaneous, transient adenosine release"

University of Washington, Seattle, WA May 5, **2012**
"Carbon nanotube-based sensors for electrochemical detection of neurotransmitters"

Pittsburgh Conference, Orlando, FL, March 10, **2012**
“Electrochemical Detection of Octopamine and Tyramine in Drosophila”

Pittsburgh Conference, Orlando, FL, March 12, **2012**
“Transient Adenosine Signaling: Evidence for Activity-Dependent Release”

Pittsburgh Conference, Orlando, FL, March 13, **2012**
“Carbon Nanotube-Based Microelectrodes for Neurotransmitter Detection”

Shippensburg University, Shippensburg, PA, Feb.17, **2012**
“New analytical techniques for measuring neurotransmitters in the fruit fly”

Hood College, Frederick, MD, Dec.1, **2011**
“New analytical techniques for measuring neurotransmitters in the fruit fly”

Muhlenberg University, Allentown, PA, Nov. 4, **2011**
“New analytical techniques for measuring neurotransmitters in the fruit fly”

Southeast Regional Meeting of the American Chemical Society (SERMACS), Richmond, VA, Oct. 29, **2011**
“Microelectrodes for measuring transient adenosine signaling in the brain”

Potter’s Lodge Meeting on Electrochemistry, Blue Mountain Lake, NY Sept. 9, **2011**
“Improving sensitivity for microelectrode detection of neurotransmitters and neuromodulators”

Symposium on Separations at the Small Scale, Saratoga Springs, NY Aug. 7, **2011**
“Capillary Electrophoresis with fast-scan cyclic voltammetry detection for neurotransmitter detection”

Pittsburgh Conference, Atlanta, GA, March 17, **2011**
“Moving beyond dopamine: FSCV for real-time detection of adenosine and gonadotrophin releasing hormone changes”

Pittsburgh Conference, Atlanta, GA March 14, **2011**
SEAC Young Investigator Awards Lecture
“Electrochemical sensors for real-time detection of endogenous neurotransmission in the fruit fly brain”

FACSS meeting, Raleigh, NC, Oct. 18, **2010**
“Electrochemical sensors for monitoring serotonin and dopamine in Drosophila”

University of Michigan, Ann Arbor, Michigan, Oct. 15, **2010**
“Rapid tools for in vivo measurements: Insights into dopamine, serotonin, and adenosine signaling”

Monitoring Molecules in Neuroscience, Brussels, Belgium, Sept. 10 **2010**
“Drosophila have functioning D2 autoreceptors: An FSCV study”

Case Western Reserve Univ. and Cleveland chapter, Electrochemical Society, May 27, **2010**
“Electrochemical measurements of dopamine and serotonin in the fruit fly brain.”

Dartmouth College Medical School (Physiology Dept.), March 23, **2010**
Dunaway/Burnham Visiting Scientist
"Electrochemical sensors for measuring dopamine and serotonin in Drosophila"

University of Pittsburgh, Pittsburgh, PA, Jan. 28, **2010**
"Electrochemical sensors for measuring neurotransmitter changes in Drosophila"

Gordon Research Conference on Electrochemistry, Ventura, CA, Jan. 12, **2010**
"Carbon-nanotube based electrodes for measuring neurotransmitter changes in the fruit fly."

Virginia Commonwealth University, Richmond, VA, Nov. 19, **2009**
"Electrochemical sensors for measuring neurotransmitter changes in the fruit fly brain"

GlaxoSmithKline, RTP, NC, Nov. 3, **2009**
"The fruit fly as a model organism for neurotransmission and pharmacology"

University of North Carolina, Chapel Hill, NC, Nov. 2, **2009**
"FSCV at Carbon-fiber microelectrodes: moving beyond dopamine"

Indiana University, Bloomington, IN, Oct. 1, **2009**
"Electrochemical sensors for measuring neurotransmitter changes in the fruit fly brain"

University of Illinois, Chicago, Dept. of Chemistry, Sept. 24, **2008**
"Electrochemical sensors for detection of real-time neurotransmitter changes in the fruit fly brain"

Mary Baldwin College, Staunton, VA, Sept. 18, **2008**
"Using analytical tools to study brain chemistry"

Monitoring molecules *in vivo*, Vancouver, Canada, Aug. 12, **2008**
"Increasing the sensitivity of carbon-fiber microelectrodes"

Purines 2008, Copenhagen, Denmark, July 1, **2008**
"Electrochemical detection of adenosine in vivo"

University of Virginia, Department of Psychiatry, May 9, **2008**
"Real-time detection of neurotransmitter changes: Applications for dopamine, serotonin, and amino acid measurements"

Eli Lilly & Company. Indianapolis, IN April 15, **2008**
"Electrochemical sensors for detection of rapid neurotransmitter changes in the fruit fly"

Pittsburgh Conference on Analytical Chemistry, March 3, **2008**
"Carbon nanotube modified electrodes for *in vitro* and *in vivo* monitoring of serotonin release"

Federation of Analytical Chemistry and Spectroscopy Societies (FACSS), Oct. 15, **2007**
"Increasing the sensitivity of carbon-fiber microelectrodes for *in vivo* applications"

Southeast Regional Meeting of the American Chemical Society, Oct. 26, **2007**
"Real-time measurements of adenosine *in vivo* using carbon-fiber microelectrodes"

University of Virginia, Molecular Physiology and Biophysics Seminar Series, Oct. 8, **2007**.
“Real-time detection of neurotransmitter changes: Applications for dopamine, serotonin, and adenosine measurements”

University of North Carolina, Wightman Symposium, July 21, **2007**.
“Increasing the sensitivity of carbon fiber microelectrodes for *in vivo* applications”

University of Virginia, Dept. of Anesthesiology Seminar Series, May 8, **2007**
“Microelectrodes for studying rapid neurochemical changes: Applications for adenosine, dopamine and serotonin measurements.”

University of Virginia, Neuroscience Seminar Series, April 3, **2007**
“Sensing and sampling techniques for measuring dynamic changes of neurotransmitters *in vivo*”

Pittsburgh Conference on Analytical Chemistry, Feb 28, **2007**
“Carbon nanotube modified microelectrodes for rapid determination of neurochemical changes”,

Wake Forest University, Dept. of Chemistry, Feb. 8, **2006**
“High speed separations for detection of fast neurochemical changes during behavior.”