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UNIVERSITY OF ILLINOIS AT URBANA-CHAMPAIGN

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APPOINTMENTS

UNIVERSITY OF ILLINOIS AT URBANA-CHAMPAIGN

Center for Advanced Study Professor of Chemistry	August 2013–present
Director of the School of Chemical Sciences	August 2012–present
James R. Eiszner Family Endowed Chair in Chemistry	August 2008–present
Director, Carver Biotechnology Center	September 2002–August 2012
William H. and Janet G. Lycan Professor of Chemistry	November 2001–August 2008
Professor of Chemistry	August 1999–October 2001
Associate Professor of Chemistry	July 1996–July 1999
Assistant Professor of Chemistry	July 1991–July 1996

Research emphasis is both analytical chemistry and the study of cell-cell signaling. The major areas of analytical technology development involve small volume peptidomics and metabolomics. Such measurements involve enhancements to capillary electrophoresis separation methods, laser-based detection methods, MALDI sampling techniques, nanoliter volume NMR and micro/nanofluidic sampling. The second group theme relates to cell-cell signaling. This includes neuroscience (the discovery of novel neurochemical pathways, new signaling molecules, their distribution, and function in a range of animal models) as well as quorum sensing and other aspects of cell-cell signaling in microbial communities.

University of Illinois Affiliations: Department of Molecular & Integrative Physiology; Department of Bioengineering; Neuroscience Program; the Carle Illinois College of Medicine (CICOM); the Beckman Institute for Advanced Science and Technology (Intelligent Systems theme and the Neurotechnology for Memory and Cognition working group); the Carl R. Woese Institute for Genomic Biology (the Microbiome Metabolic Engineering theme); the Micro and Nanotechnology Laboratory; and the Roy J. Carver Biotechnology Center.

PROFESSIONAL EXPERIENCE
UNIVERSITY OF ILLINOIS AT URBANA-CHAMPAIGN

DIRECTOR, SCHOOL OF CHEMICAL SCIENCES (SCS)

August 2012–present

The School of Chemical Sciences consists of the Departments of Chemistry and Chemical and Biomolecular Engineering, and has a long tradition of excellence as one of the largest and highest ranked chemical research enterprises in the world. It has a combined annual budget in excess of 25 million dollars and has more than 200 employees. Duties of the Director include direct supervision and administration of the Departments of Chemistry and Chemical and Biomolecular Chemistry, reporting to the Dean of Liberal Arts and Sciences, and oversight of the school's space, safety, human resources, and its cluster of facilities. See <http://www.scs.illinois.edu/>.

DIRECTOR, ROY J. CARVER BIOTECHNOLOGY CENTER (CBC)

August 2002–August 2012

The CBC provides measurement services to the UIUC and outside communities in genomics, proteomics, metabolomics and a variety of other areas. Consisting of about 40 full-time staff, the CBC supports the research efforts of more than 280 research groups on the UIUC campus annually. Significant effort involved quadrupling the annual external funding; at the end of my tenure as director, the CBC's operating budget was >\$10M/year, of which 56% derived from service revenue, 24% from campus subsidy, and 20% from off-campus sponsored funding. In 2011/2, \$2M of new equipment was secured. As director, major duties also included strategic positioning of the center, the creation of new facilities, raising external funding, and a range of additional administrative duties. See: <http://www.iqb.illinois.edu/biotech/>.

DIRECTOR, UIUC NEUROPROTEOMICS & NEUROMETABOLOMICS CENTER ON CELL-CELL SIGNALING August 2004–present

The UIUC Neuroproteomics & Neurometabolomics Center on Cell-Cell Signaling, a NIDA-funded P30 Center, both provides new proteomics and bioinformatics measurement capabilities to the UIUC and regional neuroscience community, and advances the performance of state-of-the-art proteomics technologies to new levels. The Center employs 10+ individuals working with multiple national and international research groups, and is involved in research, training and outreach activities. See: <http://neuroproteomics.scs.illinois.edu>

NON-UNIVERSITY

EDITOR-IN-CHIEF, ANALYTICAL CHEMISTRY

American Chemical Society, Washington, D.C.

December 2011–present

*Serving as the seventh Editor-in-Chief of **Analytical Chemistry** in its >90-year history; **Analytical Chemistry**, the highest impact and most cited journal in its field, has twenty associate editors, received ~6000 articles (published ~1800), and has a 6.9 impact factor in 2020. Responsibilities include an initial triage of manuscripts, assigning manuscripts to associate editors, writing editorials, making policy decisions, reviewing articles and promoting the journal. The editorials have been downloaded more than 200,000 times. EIC appointment renewed in 2016 for a second five-year term and in 2020 for a third and final five-year term.*

EDITOR-IN-CHIEF, JOURNAL OF PROTEOME RESEARCH

American Chemical Society, Washington, D.C.

October 2015–March 2016

*Served as the second and interim editor of the **Journal of Proteome Research (JPR)** during the search for the next full-time editor. JPR had seven associate editors and received about 1000 articles in 2015.*

SCIENTIFIC ADVISORY BOARDS

Newomics Inc., Emeryville, CA

December 2014–present

Advanced Analytical Technologies, Ames, IA

July 2007–May 2018

Evaluate new technologies and other developments related to these companies' core analytical businesses.

CO-FOUNDER, BOARD OF DIRECTORS AND VICE-PRESIDENT

Magnetic Resonance Microsensors, Savoy, IL

December 1994–2005

Company founded to commercialize a series of NMR microprobes designed for high-resolution nanoliter volume NMR with increased mass sensitivity. Co-wrote SBIR and STTR proposals funded to aid in the development of a series of static and on-line NMR probes. Company purchased in 2000 by Protasis Corporation, and offered a line of both flow and capillary LC-NMR probes.

EDUCATION**PHYSIOLOGY/MARINE SCIENCE EXPERIENCE****University of Puerto Rico**

Summer 2001

Taught a section of the NSF-sponsored short course on tropical neuroethology.

University of Illinois at Urbana-Champaign

Spring 1999

Received a semester release time to learn additional invertebrate neurophysiology with Prof. Rhanor Gillette (Department of Molecular & Integrative Physiology) as advisor through the University's "Second Discipline" program.

Hopkins Marine Station, Stanford University

Winter/Spring 1998

Worked with Prof. William Gilly to identify and study neuropeptides in cephalopods, as well as isolate and characterize several novel marine toxins and study their effects on ion channels. Audited two physiology/biophysics courses.

Friday Harbor Marine Laboratory, University of Washington

Summer 1997

Studied the functional and biochemical roles of several families of peptide hormones using opisthobranch mollusks as model systems.

POSTDOCTORAL FELLOWSHIPS**Stanford University**

February 1989–June 1991

Dr. Richard N. Zare, Dr. Richard H. Scheller, Advisors

*Postdoctoral Research: Increased the sensitivity of capillary zone electrophoresis (CZE) by improving optical detection methods. Engaged in fundamental studies of resolution and efficiency. Used CZE to assay the contents of bag cell neurons from *Aplysia californica*. Audited neurobiology and neurophysiology courses. Work resulted in three publications and 10 presentations.*

PH.D. ANALYTICAL CHEMISTRY**University of Arizona**

August 1983–January 1989

Dr. M. Bonner Denton, Dissertation Director

GPA 3.9/4.0

Dissertation Title: Development of New Holographic Interferometers and Array Detectors for Improved Spectrochemical Analysis.

Dissertation Research: Fundamental comparisons of signal-to-noise performance of solid-state array detectors. Characterization of new array detectors for optical spectroscopy. Development of novel spectrographs including a two-dimensional holographic spectrometer. Work resulted in 13 publications and 10 presentations.

B.S. CHEMISTRY WITH HONORS

University of California at Davis

September 1979–June 1983

Undergraduate Research: Studied the imidazole-iron bond in iron porphyrin systems using high field (360 and 500 MHz) NMR spectroscopy.

RESEARCH SCIENTIST

Lawrence Livermore National Laboratory, CA

June 1980–September 1982

Studied numerous methods to improve FT-IR analysis under the direct supervision of Dr. Tomas Hirschfeld, including an LC-IR interface. Work resulted in five presentations at national and international chemistry meetings.

PROFESSIONAL MEMBERSHIPS

American Association for the Advancement of Science (AAAS), Fellow
 American Chemical Society (ACS), Fellow
 American Society for Biochemistry and Molecular Biology (ASBMB)
 American Society for Pharmacology and Experimental Therapeutics (ASPET)
 Royal Society of Chemistry (RSC), Fellow
 Sigma Xi (Science Research Honor Society)
 Society for Neuroscience (SfN)
 Alpha Chi Sigma

AWARDS AND FELLOWSHIPS

University of Illinois:

#1 on 2021 Top 100 Power List of Analytical Chemists, <i>The Analytical Scientist</i>	2021
#1 on 2019 Top 100 Power List of Analytical Chemists, <i>The Analytical Scientist</i>	2019
CASSS Award for Outstanding Achievements in Separation Science	2019
Torbern Bergman Medal from the Swedish Chemical Society	2018
Visionary Award, American Diabetes Association	2018
A Top Ten Leader in Measurement Science, <i>The Analytical Scientist</i>	2017
ANACHEM Award, Federation of Analytical and Spectroscopy Societies	2015
#3 on 2015 Top 100 Power List of Analytical Chemists, <i>The Analytical Scientist</i>	2015
Malcom E. Pruitt Award, Council for Chemical Research	2014
The Analytical Chemistry Award, American Chemical Society	2014
Center for Advanced Study Professor, University of Illinois	2013
#4 on 2013 Top 100 Power List of Analytical Chemists, <i>The Analytical Scientist</i>	2013
Ralph N. Adams Award, The Pittsburgh Conference	2012
Fellow of the American Chemical Society	2011
Award for Outstanding Achievements in the Fields of Analytical Chemistry, Eastern Analytical Symposium	2011

Viktor Mutt Prize, International Regulatory Peptide Society	2010
James R. Eiszner Family Chair in Chemistry	2008
Engineering Research and Development Corp's Award for Outstanding Team Effort from the Army Corp of Engineers	2007
Theophilus Redwood Lecturer, Analytical Division, Royal Society of Chemistry	2007
Pittsburgh Analytical Chemistry Award, SACP	2007
Special Creativity Extension, National Science Foundation (NSF)	2002–2004
National Academies Keck Future Initiatives, initial conference participant	2003
The Heinrich-Emanuel Merck Prize, Merck Co.	2002
Instrumentation Award, ACS Analytical Division	2002
Lycan Professorship in Chemistry, UIUC	2001
Associate, Center for Advanced Study, UIUC	2001
Fellow, AAAS	2001
The Gill Prize in Instrumentation and Measurement Science	2000
Benedetti-Pichler Award in Microanalysis	1999
University Scholar, UIUC	1997–1999
Arthur Findeis Award, ACS Analytical Division	1997
Camille Dreyfus Teacher Scholar	1996–1999
Alfred P. Sloan Research Fellow	1995–1997
Beckman Fellow, Center for Advanced Study, UIUC	1993–1994
Searle Scholar Award: Chicago Community Trust	1993–1996
David and Lucile Packard Fellowship	1992–1997
Young Investigator Award: NSF	1992–1997
Arnold O. Beckman Research Award, UIUC	1991
New Faculty Award: Henry & Camille Dreyfus Foundation	1991
Lester Strock Award (co-recipient): Society for Applied Spectroscopy	1991
Stanford University:	
Ronald Belcher Memorial Award: Talanta	1990
NSF Postdoctoral Fellowship in Chemistry	1989–1991
University of Arizona (UA):	
Analytical Division of the ACS Summer Fellowship: Analytical Chemists of Pittsburgh	1988
Gordon Kirkbright Bursary Award: Association of British Spectroscopists	1988
McPherson Award in Spectroscopy: Society for Applied Spectroscopy	1988
Sigma Xi Travel Award	1988
UA Department of Chemistry Travel Grants	1988, 1986
Tomas Hirschfeld Scholar Award: Federation of Analytical Chemistry and Spectroscopy Societies	1987
Faculty of Science of the University of Arizona: Outstanding Graduate Student Fellowship	1983–1986
UA Department of Chemistry Research Fellowship	1985

University of California at Davis:

National Institute of Chemists' Student Award	1983
University of California President's Undergraduate Fellowship	1982–1983
Associated Western Universities' Summer Fellowships	1980–1982
Phi Lambda Upsilon Honorary Chemistry Fraternity	1983
Eastman Kodak Undergraduate Honor Award	1982

REVIEWED PUBLICATIONS

GOOGLE SCHOLAR HINDEX 89; >31,400 CITATIONS

447. *Identification of Lipid Heterogeneity and Diversity in the Developing Human Brain*, A. Bhaduri, E.K. Neumann, A.R. Kriegstein, J.V. Sweedler, **JACS Au**, 2021, in press
446. *Alternative Splicing Mechanisms Underlying Opioid-Induced Hyperalgesia*, P. Zhang, O.C. Perez, B.R. Southey, J.V. Sweedler, A.A. Pradhan, S.L. Rodriguez-Zas, **Genes (Basel)** **12**, 2021, 1570.
445. *Droplet-assisted Electrospray Phase Separation Using Integrated Silicon Microfluidic Platform*, Y. Zhang, S. Kim, W. Shi, Y. Zhao, I. Park, C. Brenden, H. Iyer, P. Jha, R. Bashir, J.V. Sweedler, Y. Vlasov, **Lab Chip**, 2021, in press.
444. *Single-Neuron RNA Modification Analysis by Mass Spectrometry: Characterizing RNA Modification Patterns and Dynamics with Single-Cell Resolution*, K.D. Clark, S.S. Rubakhin, J.V. Sweedler, **Anal. Chem.** **93**, 2021, 14537–14544.
443. *Droplet Microfluidics with MALDI-MS Detection: The Effects of Oil Phases in GABA Analysis*, S.E. Bell, I. Park, S.S. Rubakhin, R. Bashir, Y. Vlasov, J.V. Sweedler, **ACS Meas. Sci. Au**, 2021, in press.
442. *Image-Guided MALDI Mass Spectrometry for High-throughput Single-Organelle Characterization*, D.C. Castro, Y.R. Xie, S.S. Rubakhin, E.V. Romanova, J.V. Sweedler, **Nat. Methods** **18**, 2021, 1233–1238.
- **Featured in several online articles, including:**
- EurekAlert!: <https://www.eurekalert.org/news-releases/930136>
 - AZO Life Sciences: <https://www.azolifesciences.com/news/20211004/Novel-technique-helps-researchers-in-single-organelle-characterization.aspx>
 - ScienceDaily: <https://www.sciencedaily.com/releases/2021/09/210930134808.htm>
441. *Spatiotemporal Biodistribution of α -tocopherol is Impacted by the Source of ^{13}C -labeled α -tocopherol in Mice following a Single Oral Dose*, S. Jeon, Q. Li., K.M. Ranard, S.S. Rubakhin, J.V. Sweedler, M.J. Kuchand, J.W. Erdman, **Nutr. Res.** **93**, 2021, 79–86.
440. *Characterization of Neuronal RNA Modifications during Non-associative Learning in Aplysia Reveals Key Roles for tRNAs in Behavioral Sensitization*, K.D. Clark, C. Lee, R. Gillette, J.V. Sweedler, **ACS Central Sci.** **7**, 2021, 1183–1119.
439. *Analysis of Peptide Stereochemistry in Single Cells by Capillary Electrophoresis-Trapped Ion Mobility Spectrometry Mass Spectrometry*, D.H. Mast, H-W. Liao, E.V. Romanova, J.V. Sweedler, **Anal. Chem.** **93**, 2021, 6205–6213.
438. *macroMS: An Image-Guided Analysis of Random Objects by Matrix-Assisted Laser Desorption/Ionization Time-of-Flight Mass Spectrometry*, K. Choe, P. Xue, H. Zhao, J.V. Sweedler, **J. Am. Soc. Mass Spectrom.** **32**, 2021, 1180–1188.
437. *Effects of Maternal Immune Activation in Porcine Transcript Isoforms of Neuropeptide and Receptor Genes*, B.R. Southey, P. Zhang, M.R. Keever, H.E. Rymut, R.W. Johnson, J.V. Sweedler, S.L. Rodriguez-Zas, **J. Integr. Neurosci.** **20**, 2021, 21–31.

436. *Biopolymer Patterning-Directed Secretion in Muroid and Non-Muroid Strains of Pseudomonas aeruginosa Revealed by Multimodal Chemical Imaging*, J. Jia, J.F. Ellis, T. Cao, K. Fu, N. Morales-Soto, J.D. Shrout, J.V. Sweedler, P.W. Bohn, **ACS Infect. Dis.** **7**, 2021, 598–607.
435. *Enhanced Understanding of Molecular Interactions and Function Underlying Pain Processes Through Networks of Transcript Isoforms, Genes, and Gene Families*, P. Zhang, B.R. Southey, J.V. Sweedler, A. Pradhan, S.L. Rodriguez-Zas, **Adv. Appl. Bioinform. Chem.** **14**, 2021, 49–69.
434. *3D Particle-Free Printing of Biocompatible Conductive Hydrogel Platforms for Neuron Growth and Electrophysiological Recording*, C. Wang, S.S. Rubakhin, M.J. Enright, J.V. Sweedler, R.G. Nuzzo, **Adv. Funct. Mater.** **31**, 2021, 2010246.
433. *Advancing D-Amino Acid-Containing Peptide Discovery in the Metazoan*, D.H. Mast, J.W. Checco, J.V. Sweedler, **Biochim. Biophys. Acta Proteins Proteom.** **1869**, 2021, 140553.
- **Featured in the Special Issue:** The Significance of D-Amino Acids in the Homochiral World of Life. Edited by N. Fujii, K. Hamase, A. Usiello, H. Hiroshi, and J.V. Sweedler.
<https://www.sciencedirect.com/journal/biochimica-et-biophysica-acta-bba-proteins-and-proteomics/special-issue/104WLH93HGB>
432. *Accelerating Fourier-Transform Ion Cyclotron Resonance Mass Spectrometry Imaging Using a Subspace Approach*, Y.R. Xie, D.C. Castro, F. Lam, J.V. Sweedler, **J. Am. Soc. Mass Spectrom.** **31**, 2020, 2338–2347.
431. *Biphasic Liquid Microjunction Extraction for Profiling Neuronal RNA Modifications by Liquid Chromatography-Tandem Mass Spectrometry*, K.D. Clark, M.C. Philip, Y. Tan, J. V. Sweedler, **Anal. Chem.** **92**, 2020, 12647–12655.
430. *Removing Formaldehyde-Induced Peptidyl Crosslinks Enables Mass Spectrometry Imaging of Peptide Hormone Distributions from Formalin-Fixed Paraffin-Embedded Tissues*, D-K Lee, S.S. Rubakhin, I. Kusmartseva, C. Wasserfall, M.A. Atkinson, J.V. Sweedler, **Angew. Chem. Int. Ed. Engl.** **59**, 2020, 22584–22590.
429. *Spatiotemporal Distribution of Pseudomonas aeruginosa Alkyl Quinolones Under Metabolic and Competitive Stress*, T. Cao, J.V. Sweedler, P.W. Bohn, J.D. Shrout, **mSphere** **5**, 2020, e00426-20.
428. *D-Alanine: Distribution, Origin, Physiological Relevance, and Implications in Disease*, C.J. Lee, T. Qiu, J.V. Sweedler, **Biochim. Biophys. Acta Proteins Proteom.** **1868**, 2020, 140482.
- **Featured in the Special Issue:** The Significance of D-Amino Acids in the Homochiral World of Life. Edited by N. Fujii, K. Hamase, A. Usiello, H. Hiroshi, and J.V. Sweedler.
<https://www.sciencedirect.com/journal/biochimica-et-biophysica-acta-bba-proteins-and-proteomics/special-issue/104WLH93HGB>
427. *Single-Cell Classification Using Mass Spectrometry Through Interpretable Machine Learning*, Y.R. Xie, D.C. Castro, S.E. Bell, S.S. Rubakhin, J.V. Sweedler, **Anal. Chem.** **92**, 2020, 6613–6621.
426. *Enhanced Single-Cell Metabolomics by Capillary Electrophoresis Electrospray Ionization-Mass Spectrometry with Field Amplified Sample Injection*, H-W. Liao, S.S. Rubakhin, M.C. Philip, J.V. Sweedler, **Anal. Chim. Acta** **1118**, 2020, 36–43.
425. *Quantitative Imprint Mass Spectrometry Imaging of Endogenous Ceramides in Rat Brain Tissue with Kinetic Calibration*, Q. Wu, S.S. Rubakhin, J.V. Sweedler, **Anal. Chem.** **92**, 2020, 6613–6621.
- **Featured in several online articles, including:**
- EurekaAlert!: https://www.eurekaalert.org/pub_releases/2020-05/bifa-dtq051920.php
 - News-Medical.net: <https://www.news-medical.net/news/20200520/New-technique-determines-lipid-composition-in-a-brain-region.aspx>

- AZO Life Sciences: <https://www.azolifesciences.com/news/20200521/New-technique-can-determine-the-location-and-quantity-of-lipids-in-the-brain.aspx>
 - Phys.org: <https://phys.org/news/2020-05-quantity-lipids-brain.html>
 - TechnologyNetworks: <https://www.technologynetworks.com/proteomics/news/who-goes-there-determining-lipid-composition-in-the-brain-335086>
424. *A Mass Spectrometry-Based High-throughput Screening Method for Engineering Fatty Acid Synthases with Improved Production of Medium Chain Fatty Acids*, P. Xue, T. Si, S. Mishra, L. Zhang, K. Choe, J.V. Sweedler, H. Zhao, **Biotechnol. Bioeng.** **117**, 2020, 2131–2138.
- **Featured as an Editor's Choice article, and in several online articles, including:**
- ScienceDaily: <https://www.sciencedaily.com/releases/2020/05/200519140416.htm>
 - Phys.org: <https://phys.org/news/2020-05-rapid-screening-method-fatty-acids.html>
 - TechnologyNetworks: <https://www.technologynetworks.com/proteomics/news/screening-method-targets-fatty-acids-in-yeast-335074>
423. *Characterization of the Prohormone Complement in Amphiprion and Related Fish Species Integrating Genome and Transcriptome Assemblies*, B.R. Southey, S.L. Rodriguez Zas, J.S. Rhodes, J.V. Sweedler, **PLoS One** **15**, 2020, e0228562.
422. *Quantitative Characterization of the Neuropeptide Level Changes in Dorsal Horn and Dorsal Root Ganglia Regions of the Murine Itch Models*, E.G. Tillmaand, K.D.B. Anapindi, E. De La Toba, C.J. Guo, J. Krebs, A.N. Lenhart, J.V. Sweedler, Q. Liu, **J. Proteome Res.** **19**, 2020, 1248–1257.
421. *Differential Post-translational Amino Acid Isomerization Found Among Neuropeptides in *Aplysia californica**, D.H. Mast, J.W. Checco, J.V. Sweedler, **ACS Chem. Biol.** **15**, 2020, 272–281.
420. *PACAP and Other Neuropeptides Link Chronic Migraine and Opioid-Induced Hyperalgesia in Mouse Models*, K.D.B. Anapindi, N. Yang, E.V. Romanova, S.S. Rubakhin, A. Tipton, I. Dripps, Z. Sheets, J.V. Sweedler, A.A. Pradhan, **Mol. Cell. Proteomics** **18**, 2019, 2447–2458.
- **Featured in several online articles, including:**
- ScienceDaily: <https://www.sciencedaily.com/releases/2019/11/191120131307.htm>
 - MedicalXpress: <https://medicalxpress.com/news/2019-11-link-migraines-opioid-overuse-key.html>
 - News-Medical.net: <https://www.news-medical.net/news/20191120/Researchers-discover-a-peptide-involved-in-both-migraine-and-opioid-overuse-pain.aspx>
 - AJMC.com: <https://www.ajmc.com/newsroom/researchers-uncover-mechanism-behind-relationship-of-migraine-opioid-induced-pain-in-mice>
419. *A Rotifer-Derived Paralytic Compound Prevents Transmission of Schistosomiasis to a Mammalian Host*, J. Gao, N. Yang, F.A. Lewis, P. Yau, J.J. Collins, 3rd, J.V. Sweedler, P.A. Newmark, **PLoS Biol** **17**, 2019, e3000485.
- **Featured in several online articles, including:**
- ScienceDaily: <https://www.sciencedaily.com/releases/2019/10/191017140238.htm>
 - Genetic Engineering & Biotechnology News: <https://www.genengnews.com/news/schistosoma-parasite-paralyzed-by-chemical-produced-by-tiny-aquatic-animal/>
 - ScienceNews: <https://www.sciencenews.org/article/tropical-disease-parasite-snail-fever>
 - HHMI News: <https://www.hhmi.org/news/tiny-creature-could-help-prevent-devastating-parasitic-disease>
 - MedicalXpress: <https://medicalxpress.com/news/2019-10-parasite-paralysis-schistosomiasis.html>

418. *Multidimensional Top-Down Proteomics of Brain Region-Specific Mouse Brain Proteoforms Responsive to Cocaine and Estradiol*, H.-M. Park, R. Satta, R.G. Davis, Y.A. Goo, R.D. LeDuc, R.T. Fellers, J.B. Greer, E.V. Romanova, S.S. Rubakhin, R. Tai, P.M. Thomas, J.V. Sweedler, N.L. Kelleher, S.M. Patrie, A.W. Lasek, **J. Proteome Res.** **18**, 2019, 3999–4012.
417. *Seasonal Adaptations of the Hypothalamo-Neurohypophyseal System of the Dromedary Camel*, F.Z.D. Alim, E.V. Romanova, Y.L. Tay, A. Rahman, K.G. Chan, K.W. Hong, M. Rogers, B.R. Southey, M.P. Greenwood, A.S. Mecawi, M.R. Mustafa, N. Mahy, C. Campbell, J. Antunes-Rodrigues, J.V. Sweedler, D. Murphy, C.C.T. Hindmarch, **PLoS One** **14**, 2019, e0216679.
416. *Opioid-Induced Hyperalgesia is Associated with Dysregulation of Circadian Rhythm and Adaptive Immune Pathways in the Mouse Trigeminal Ganglia and Nucleus Accumbens*, P. Zhang, L.S. Moye, B.R. Southey, I. Dripps, J.V. Sweedler, A. Pradhan, S.L. Rodriguez-Zas, **Mol. Neurobiol.** **56**, 2019, 7929–7949.
415. *Lipid Analysis of 30 000 Individual Rodent Cerebellar Cells using High-Resolution Mass Spectrometry*, E.K. Neumann, J.F. Ellis, A.E. Triplett, S.S. Rubakhin, J.V. Sweedler, **Anal. Chem.** **91**, 2019, 7871–7878.
414. *Lipid Heterogeneity between Astrocytes and Neurons Revealed by Single-Cell MALDI-MS Combined with Immunocytochemical Classification*, E.K. Neumann, T.J. Comi, S.S. Rubakhin, J.V. Sweedler, **Angew. Chem. Int. Ed. Engl.** **58**, 2019, 5910–5914.
413. *Investigating Brain D-Serine: Advocacy for Good Practices*, J.P. Mothet, J.M. Billard, L. Pollegioni, J.T. Coyle, J.V. Sweedler, **Acta Physiol. (Oxf.)** **226**, 2019, e13257.
412. *Exploring the Fundamental Structures of Life: Non-targeted, Chemical Analysis of Single Cells and Subcellular Structures*, E.K. Neumann, T.D. Do, T.J. Comi, J.V. Sweedler, **Angew. Chem. Int. Ed. Engl.** **58**, 2019, 9348–9364. (Translated into German in **Angewandte Chemie** **131**, 2019.)
 - **Featured in** Chemistry Views:
www.chemistryviews.org/details/ezone/11166178/Angewandte_Chemie_282019_Essentials_of_Life.html
411. *¹³C-Lutein is Differentially Distributed in Tissues of an Adult Female Rhesus Macaque Following a Single Oral Administration: A Pilot Study*, S. Jeon, Q. Li, S.S. Rubakhin, J.V. Sweedler, J.W. Smith, M. Neuringer, M. Kuchan, J.W. Erdman Jr., **Nutr. Res.** **61**, 2019, 102–108.
410. *Gene Network Dysregulation in the Trigeminal Ganglia and Nucleus Accumbens of a Model of Chronic Migraine-Associated Hyperalgesia*, H. Jeong, L.S. Moye, B.R. Southey, A.G. Hernandez, I. Dripps, E.V. Romanova, S.S. Rubakhin, J.V. Sweedler, A.A. Pradhan, S.L. Rodriguez-Zas, **Front. Sys. Neurosci.** **12**:63, eCollection 2018.
409. *Exploring Exercise- and Context-Induced Peptide Changes in Mice by Quantitative Mass Spectrometry*, S.E. Dowd, M.L. Mustroph, E.V. Romanova, B.R. Southey, H. Pinardo, J.S. Rhodes, J.V. Sweedler, **ACS Omega** **3**, 2018, 13817–13827.
 - Selected in for publication in the special Virtual Issue, **Celebrating 5 Years of Open Access with ACS Omega**: <https://pubs.acs.org/page/acsodf/vi/5-year-celebration-acsomega>
 - **Selected as an ACS Editors' Choice article.**
 - **Featured in several online articles, including:**
 - ScienceDaily: <https://www.sciencedaily.com/releases/2018/11/181114120317.htm>
 - Phys.org: <https://phys.org/news/2018-11-drug-addiction.html>
 - ScienceDaily: Neuroscience News: <https://neurosciencenews.com/exercise-drug-addiction-10197/>

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BOOKS / SPECIAL JOURNAL ISSUES

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RESEARCH SUPPORT

CURRENT

The Neuroproteomics and Neurometabolomics Center on Cell-Cell Signaling, National Institute on Drug Abuse, P30 DA018310, Sweedler, PI (N.L. Kelleher and S. Rodriguez-Zas, Co-PIs), \$5,918,775 total award for 2019–2024. Matched with \$200K from the UIUC campus towards instrument purchase, with an additional \$100K from LAS/SCS.

Characterization of Biofilms by Correlated Mass Spectrometric and Raman Imaging, National Institute of Allergy and Infectious Diseases, R01 AI113219, Sweedler, Co-PI (J. Shrout, PI), Sweedler share \$836,044 for 2019–2024.

Development of a Cell-Based Therapy to Improve Recovery Following Immobilization, National Institute of Arthritis and Musculoskeletal and Skin Diseases, R01 AR072735 Sweedler, Co-I (M. Boppart, PI), Sweedler share \$64,500 for years 3–5 of project period 2018–2023.

Center for Sub-Cellular Genomics, NIH/Centers of Excellence in Genomic Science (CEGS), R01 HG010023, Sweedler, Co-PI, (J. Kim, J. Eberwine, PIs); Sweedler share \$1,768,498 for 2018–2023.

Isomerization in Cell-to-Cell Signaling Peptides: from Discovery to Function, National Institute of Neurological Disease and Stroke, R01 NS031609, Sweedler, PI, \$1,649,365 total award for 2018–2023.

Unraveling Diabetes Progression One Cell at a Time, Pathway to Stop Diabetes, Visionary Award, ADA 1-18-VSN-19, American Diabetes Association, Sweedler, PI, \$1,592,500 total award for 2018–2023.

Minimally-invasive Nano-dialysis Neural Probe for Multiplex Monitoring of Neurochemicals, NIH BRAIN Initiative, 1U01NS107677, Sweedler, Co-I (Y. Vlasov and R. Bashir, Co-Is); Sweedler share \$746,180 for 2018–2021.

NRT-UtB: Understanding the Brain: Training the Next Generation of Researchers in Engineering and Deciphering of Miniature Brain Machinery, National Science Foundation Research Traineeship award, 392 NSF DGE 17-35252, Sweedler, Co-PI (M. Gillette, PI; H. Kong, R. Bashir, N. Cohen, Co-PIs) \$2,999,996 total NSF grant award and \$888,550 total Institutional funds for 2017–2022.

Center for Advanced Bioenergy and Bioproduct Innovation, Department of Energy - BRC, DOE 00317429, Sweedler, Faculty Collaborator (E. DeLucia, PI), Sweedler share \$1,405,403 for 2017–2022.

PRIOR

In Vitro Platform for Exploring Muscle-Neuron Interactions, National Institute of Neurological Disease and Stroke, R21 NS109894, Sweedler, Co-PI (J. Rhodes, PI), Sweedler share \$76,519 for year 1 of project period 2019–2021.

Germ Cell Specification and Differentiation in Planarians, NIH R01HD043403-14, Sweedler, co-PI (P. Newmark, PI), Sweedler share \$83,521 for 2018–2020 (approved for a no-cost extension to 2021).

Characterization of Biofilms by Correlated Mass Spectrometric and Raman Imaging, National Institute of Allergy and Infectious Diseases, R01 AI113219, Sweedler, Co-PI (J. Shrout, PI), Sweedler share \$743,670 for 2014–2019.

The Neuroproteomics and Neurometabolomics Center on Cell-Cell Signaling, National Institute on Drug Abuse, P30 DA018310, Sweedler, PI (N.L. Kelleher and S. Rodriguez-Zas, Co-PIs), \$4,659,103 total award for 2014–2019. Matched with \$150K from the UIUC campus.

Chemical-Imaging Guided Characterization of Cellular Populations, National Science Foundation, Division of Chemistry, CHE-1606791, Sweedler, PI, \$405,000 total award for 2016–2019.

BRAIN Initiative: Integrated Multimodal Analysis of Cell-and Circuit-Specific Processes in Hippocampal Function, National Institute of Mental Health, U01 MH109062, Sweedler, PI (M. Gillette and R. Bhargava, co-PIs), \$2,034,206 total award for 2015–2018.

Administrative Supplement to BRAIN Initiative: Integrated Multimodal Analysis of Cell-and Circuit-Specific Processes in Hippocampal Function, National Institute of Mental Health, 3U01 MH109062-02S1, Sweedler, PI (in collaboration with James Eberwine), \$229,147 total award for 2016–2018.

BRAIN EAGER: Multiscale Dynamics and Real-Time Emergent Properties of Suprachiasmatic Circuits in Real-Time, National Science Foundation, DBI 14-50962, Sweedler, Co-PI (M. Gillette, PI), \$300,000 total award, 2014–2017.

Integrative Analysis and Understanding of Cellular Communication, Organization, and Function of Plant and Microbial Systems, Oak Ridge National Laboratory (ORNL) Conceptual Pilot Project, Department of Energy, Sweedler, Co-PI (M. Doktycz, PI), Sweedler share \$275K for 2014–2017.

Enhanced Morphological Measurement Capabilities for Selected CNLM Projects, Abbott Laboratories (through the Center for Nutrition, Learning and Memory, UIUC), Sweedler, PI, \$129,975 total award for 2015–2017.

Diet-Modified Neuron Physiology Assessments, Abbott Laboratories (through the Center for Nutrition, Learning and Memory, UIUC), Sweedler, Co-PI (M. Gillette, PI), \$214,837 total award for 2015–2017.

Diet-Modified Brain Chemistry and Plasticity: Lutein as a Case Study, Abbott Laboratories (through the Center for Nutrition, Learning and Memory, UIUC), Sweedler, PI (M. Gillette, Co-PI), \$422,463 total award for 2014–2017.

Enhanced Chemical Characterization Efforts for Selected CNLM Projects, Abbott Laboratories (through the Center for Nutrition, Learning and Memory, UIUC), Sweedler, PI, \$537,881 total award for 2014–2017.

Visualizing Diet-modified Brain Chemistry with Multifaceted Chemical Imaging, Abbott Laboratories (through the Center for Nutrition, Learning and Memory, UIUC), Sweedler, PI, \$892,104 total award for 2013–2017.

Bioanalytical Characterization of D-Amino Acids in the Brain, National Science Foundation, Division of Chemistry with co-funding from the Division of Biological Infrastructure, CHE-11-11705, Sweedler, PI, \$405,000 total award for 2011–2016.

Characterizing D-Amino Acid-Containing Peptides, National Institute of Neurological Disease and Stroke, R01 NS031609, Sweedler, PI, \$1,281,902 total award for 2012–2017.

Mass Spectrometry Imaging of the Chemical Dynamics Involved in Biofilm Growth and Microbial-induced Surface Corrosion, CERL (ERDC), W9132-15-2-0006, Sweedler, PI, \$116,994, total award for 2015–2017.

Measuring the Brain: from the Synapse to Thought, National Science Foundation, Special Projects: Chemistry Infrastructure, CHE 16-43613, NSF Conference Award, \$92,882 total award, 10/2016–01/2017.

In Situ Correlated Chemical Imaging of Microbial Communities, Department of Energy, Sweedler, Co-PI (P. Bohn, PI), \$457,000 total award for 2011–2015.

Synaptic Phenotype Development and Plasticity in the Fragile X Mouse, National Institute of Mental Health, R01 MH085324/Admin Suppl., Sweedler, Faculty Collaborator (L. Cox, PI), \$109,282 total award for 2013–2015.

Glia Classification via Single Cell Metabolomics, National Institute of Mental Health, R21 MH100704A, Sweedler, PI, \$418,994 total award for 2013–2016.

Collaborative Center for an Enzyme Function Initiative, National Institutes of General Medical Sciences "Glue" Grant, U54 GM093342 (includes thirteen investigators at eight institutions), \$33.9 million total award for five years, 2010–2015. Sweedler and Cronan comprised the **Microbiology Core** for genetic, physiologic and metabolomic characterization of *in vivo* roles of *in vitro* assigned functions (Sweedler share, \$200K/year); Sweedler's participation ended July 31, 2014.

The UIUC Neuroproteomics Center on Cell-Cell Signaling, National Institute on Drug Abuse, P30 DA018310, Sweedler, PI (N.L. Kelleher and S. Rodriguez-Zas, Co-PIs), \$5,051,202 total award for 2009–2014. Matched with \$500,000 from the UIUC campus.

Molecular Gates with Ordered Nanoarrays for Improved Control of Chemical Reactions, a subproject (Sweedler's share, \$50,000/year) within the University of Illinois' Nanoscale Science and Engineering Center (NSEC) in Manufacturing Processes at the Nanoscale, 24 Co-PIs for \$20,000,000 total award for 2008–2013.

CE-LINF laser, National Institute of Neurological Disease and Stroke, Administrative Supplement for NS031609, \$76,245, 2009.

Next Generation Threat Detection, Naval Surface Warfare Center, Crane Division, (C. Lakin, PI), Sweedler's share is \$259,419 for 2008–2010.

Three-Dimensional Molecular Imaging of Ionic Liquid Processing of Lignocellulosic Materials, Department of Energy, DE-FG02-07ER64497, Sweedler Co-PI (P. Bohn, PI), Sweedler's share \$326,362 for 2007–2010.

The Neurometabolome of a Sensory Neuronal Network, National Institute of Dental and Craniofacial Research, R01 DE018866, Sweedler, PI (S.S. Rubakhin, N.L. Kelleher, Co-PIs) \$1,678,691 for 2007–2012.

Neurotransmission in Well-Defined Networks, National Institute of Neurological Disease and Stroke, R01 NS031609, Sweedler, PI, \$1,614,324 for 2007–2012.

Neuropeptides in the CNS with New Mass Spectrometric Sampling Protocols, National Institute for Drug Abuse, R01 DA017940, Sweedler, PI (W.T. Greenough, S.S. Rubakhin, co-PIs), Sweedler's share \$380,000 for 2006–2011.

Microfluidic Sensor for Heavy Metals, Department of Defense, United States Army, Sweedler, Co-PI (P. Bohn, PI; Y. Lu, Co-PIs), W9132T-05-2, Sweedler's share \$129,625 for 2005–2009.

CRC: Chemical Approaches to Glial-Neuronal Networks, National Science Foundation, CHE-05-26692, Sweedler, Co-PI (I. Epstein, PI; Gillette, Ismagliov, Co-PIs); Sweedler's share \$761,731 for 2005–2010.

Technologies for Cellular Neurometabolomics, an NIH Road Map Initiative, R33 DK070285-01, Sweedler, PI (S.S. Rubakhin, Co-PI), \$1,473,600 for 2004–2007. Supplement to DK070285, Sweedler, PI, for mass spectrometry equipment, \$397,000 for 2005.

The UIUC Neuroproteomics Center on Cell-Cell Signaling, National Institute on Drug Abuse, P30 DA018310, Sweedler, PI (N.L. Kelleher and S. Rodriguez-Zas, Co-PIs), \$5,200,000 total award for 2004–2009. Matched with \$600,000 from the UIUC campus.

Characterizing Neuropeptides with Chiral Modifications, National Science Foundation, CHE-04-00768, \$590,000 for 2004–2008.

Neural Repair in the Microcircuit Domain, W.M. Keck Foundation, Sweedler, PI (M. Gillette and R. Nuzzo, Co-PIs), \$1,200,000 for 2004–2007.

Molecular Gates with Ordered Nanoarrays for Improved Control of Chemical Reactions, a subproject (Sweedler and Bohn, Co-PIs for \$110,000/year) within the University of Illinois' Nanoscale Science and Engineering Center (NSEC) in Manufacturing Processes at the Nanoscale, 24 Co-PIs for \$20,000,000 total award for 2003–2008.

Nanofluidic Devices for the Recognition of Neurotoxins, Great Lakes Regional Center of Excellence, National Institute of Allergy and Infectious Diseases, Sweedler, Co-PI (P. Bohn, PI; M. Shannon and Wilson, Co-PIs) \$2,100,000 for 2003–2007.

Biofluidic Intelligent Processors for Preparative Manipulations of Biological Warfare Agents at the Attomole Level, DARPA, Sweedler, Co-PI (P. Bohn, PI; M. Shannon, Co-PI), \$150,000 for 2003–2004.

Subcellular Characterization of Neurotransmitters, R01 NS031609, National Institute of Neurological Disease and Stroke, Sweedler, PI, \$1,233,386 for 2002–2006.

Externally Controllable Sample Capture and Cleanup for DNA in Micromachined Integrated DNA Analysis Systems, Department of Energy, DEFG02-99ER62797, Sweedler, PI (P. Bohn, Co-PI) \$185,000, 2002–2003.

Neuropeptides in the CNS with Imaging MS, National Institutes of Drug Abuse, R21 DA14879, Sweedler, PI, \$288,000 for 2001–2004.

Characterizing Neurotransmitters in Individual Neurons, National Science Foundation, Two year Extension of CHE 98-77071 for Special Creativity, Sweedler, PI, \$260,000 for 2002–2004.

ESI mass spectrometer, Beckman Institute Equipment Allocation, \$24,000 for 2000.

ESI mass spectrometer, National Institute of Neurological Disease and Stroke, supplement for RO1 NS031609, \$50,000 for 2000.

Biofluidic Intelligent Processors for Preparative Manipulations of Biological Warfare Agents at the Attomole Level, DARPA, Sweedler, Co-PI (P. Bohn, PI; M. Shannon, Co-PI), \$1,532,437 for 2000–2003.

Nanoliter Volume Nuclear Magnetic Resonance Spectroscopy, National Institute of General Medical Sciences, GM53030, Sweedler, PI (A. Webb, Co-PI) \$1,007,000 for 2000–2004.

Single Neuron Assays for NOS Related Analytes, National Institute of Mental Health, MH60201, Sweedler, PI (L. Moroz, Co-PI), \$852,000, 1999–2003.

Externally Controllable Sample Capture and Cleanup for DNA in Micromachined Integrated DNA Analysis Systems, Department of Energy, DEFG02-99ER62797, Sweedler, PI (P. Bohn, Co-PI) \$485,000, 1999–2002.

Characterizing Neurotransmitters in Individual Neurons, National Science Foundation, CHE 98-77071, \$332,000, 1999–2002.

NOS- Independent NO Production in the Nervous System, National Institute of Neurological Disease and Stroke, NS39103, Sweedler, Co-PI, (L. Moroz, PI), \$779,000, 1999–2003.

Nanoliter Volume Nuclear Magnetic Resonance Spectroscopy, National Institute of General Medical Sciences, GM53030 Supplement, Sweedler, PI (A. Webb, Co-PI), \$69,000, 1999–2000.

Molecular Gating with Capillary Electrophoresis, National Cancer Institute, Sweedler, PI (P. Bohn, Co-PI), R21CA82081, \$229,000, 1998–2000.

Research Board, University of Illinois, \$25,000, 1998.

Subcellular Characterization of Neurotransmitters, National Institute of Neurological Disease and Stroke, RO1 NS031609, \$649,200 for 1998–2002

University Scholar Award, University of Illinois, \$18,000, 1997–2000.

U of I Vice Chancellor's Office, \$200,000 toward purchase MALDI Mass Spectrometer, December 1996.

Beckman Institute Equipment Allocation, \$40,000, toward purchase of MALDI Mass Spectrometer, December 1996.

Camille Dreyfus Teacher Scholar, \$50,000 for 1996–1997.

Neuropeptide Analysis Using Multidimensional Separation and Detection Methodology, National Science Foundation, CHE-9622663, \$282,000 for 1996–1999.

National Science Foundation Equipment Supplement (laser tube), \$9,700, 1996.

Nanoliter Volume Nuclear Magnetic Resonance, National Institute of General Medical Sciences, 1R01 GM53030, Sweedler, PI (A.G. Webb, co-PI), \$692,081 for 1996–1999.

Alfred P. Sloan Foundation, Research Fellow, \$30,000 for 1995–1997.

Beckman Institute equipment allocation, \$20,450 for phosphor-imaging system enhancements, 1995.

Beckman Institute equipment allocation, \$13,900 for inverted microscope, 1994.

Searle Scholar Award, Chicago Community Trust, \$180,000 for 1993–1996.

Radiochemical Detection Schemes for Subcellular Analysis, National Institutes of Mental Health, 1R03 MH49640, \$160,903 for 1993–1995.

Neurotransmitter Distribution and Release, NIH FIRST Award, R29 NS031609, \$561,870 for 1993–1998. Received a 118 priority score and a 2.1% percentile ranking.

David and Lucile Packard Fellowship for Science and Engineering, David and Lucile Packard Foundation, \$500,000 for 1992–1997.

National Science Foundation's Young Investigator Award, National Science Foundation, CHE-9257024, \$312,500 for 1992–1997.

Analysis of Neuropeptide Release from Individual Varicosities Using Capillary Electrophoresis with Laser Induced Fluorescence Detection, Whitaker Foundation for Biomedical Research; \$179,977 for 1992–1995.

Rational Drug Design, from Illinois State and industrial sources, Sweedler, Senior investigator (Ted Brown, PI), \$10,400 for equipment plus academic year salary for 1992.

Research Experiences for Undergraduates NSF Supplement, CHE-9115313REU, \$4,250. Supported the work of Verna Toma during summer 1992.

New Faculty Award, Henry and Camille Dreyfus Foundation, \$25,000 during 1991–1996.

The Analysis of Neuronal Subcompartments of Aplysia californica Using CZE, Arnold O. Beckman Research Award, UIUC Research Board, \$27,446 for 1991–1992.

Analysis of Neuropeptides Using Capillary Electrophoresis with Fluorescence Detection; National Science Foundation starter grant, CHE-9115313, \$32,000 for 1991–1992.

INDUSTRIAL DONATIONS

Bruker Daltonics, Center of Excellence, extended loan of a timsTOF mass spectrometer, November 2018.

Bruker Daltonics, Center of Excellence, \$240,000 for MS and equipment and software, December 2015.

Bruker Daltonics, Collaborative agreement for next generation mass spectrometer development, \$310,000 for MS and equipment and software, November 2013.

Bruker Daltonics, Collaborative agreement for next generation mass spectrometer development, \$300,000 for MS and equipment and software, November 2008.

Bruker Daltonics, Collaborative agreement for imaging mass spectrometer development, \$128,000 for MS and equipment and software, June 2005.

PerSeptive Biosystems, New control software and electronics, \$15,000 list price, February 2000.

PerSeptive Biosystems, Upgrade to MALDI TOF, \$83,000 list price, March 1998.

PerSeptive Biosystems, Upgrade to MALDI System and Free Service Support, \$136,000 list price, December 1996.

Smith Kline Beecham, Development of Microcoils for HPLC probes, Andrew Webb, Co-investigator, \$60,000, 1996–1997.

Proctor & Gamble Co., support extension for extraordinary progress, \$30,000, 1996–1998.

Calgon Vestal Laboratories, \$5000, unrestricted gift, 1994.

Waters/Millipore, Millennium Software, \$10,000 list price, 1994.

IBM, Shared University Research Program Award, RISC 6000 Computer system, \$30,000 list price, 1993.

Waters/Millipore, software, fluorescence equipment, columns, \$20,000 list price, 1993.

Proctor & Gamble Co., Presidential Young Investigator Program, \$45,000, 1993–1996.

Abbott Laboratories, \$5000, unrestricted gift, 1993.

Lilly Research Laboratories, \$5000, unrestricted gift, 1993.

Beckman Instruments, LIF attachment for the P/ACE capillary system, \$20,000 list price, 1992.

Colgate Palmolive Undergraduate Research Award. Supported the work of Verna Toma during the 1992–1993 academic year. \$875.

Photometrics Ltd, (2) 512 x 512 Scientific, slow-scan CCDs. \$12,000 list price, 1992.

Beckman Instruments, P/ACE Automated CE system, \$40,000 list price, 1992.

Waters/Millipore, Quanta 4000 CE System, Software, Water Purifier, \$40,000 list price, 1991.

Prior to Illinois

Large Format Scientific CCDs, a grant for Photometrics Ltd. to evaluate and develop new large array detector systems for use in NASA space program, funded through NASA (NAS 5-29284) for \$48,700 during 1985–1986. Re-funded by NASA for \$470,000 during 1987–1989.

Capillary Zone Electrophoresis with New Ultrasensitive Optical Detection Methods for the Analysis of Single Neurons, NSF Postdoctoral Fellowship, CHE-890744s, \$64,000 for 1989–1992.

RESEARCH POLICY PANELS AND MEETINGS

National Cancer Institute's Division of Cancer Biology and the Mathematical and Physical Sciences

Directorate of the National Science Foundation, Window on the Cell Square Table (to identify challenges and opportunities at the intersection between fundamental science and cancer research), co-chair, consisted of four virtual meetings in April/May 2021.

National Institutes of Health, External Consultant, Human Brain Map Consortium, 2018–2019

National Science Foundation, Workshop: Measuring the Brain: From the Synapse to Thought (workshop organizer and leader), October 2016, Arlington, VA [Workshop report:

https://www.nsf.gov/mps/che/measuring_the_brain_from_synapse_to_thought_10_2016.pdf

Common Fund Metabolomics Program External Scientific Panel, The National Institutes of Health, 2015–2017

3rd US–China Analytical Chemistry Workshop, June 2016, Xiamen, China

BIOTEC: International Review of Thailand's Biotechnology Institute, Bangkok, Thailand, February 2016

Special Discussion for Young Scientists on Gas Biology, Japan Science and Technology Agency ERATO Panel, September 2015, Kyoto, Japan

BIOTEC: International Review of Thailand's Biotechnology Institute, February 2015, Bangkok, Thailand

Industrialization of Biology: A Roadmap to Accelerate Advanced Manufacturing of Chemicals, National Academy of Sciences, panel member and speaker, May 2014, Arlington, VA

2nd US–China Analytical Chemistry Workshop, September 2012, Beijing, China

National Institute on Health's Common Fund Initiative, Single Cell Analysis Workshop, participant and speaker, April 2012, Bethesda, MD

1st US–China Analytical Chemistry Workshop, October 2010, Purdue University, West Lafayette, IN

National Institute on Drug Addiction's Fishing for the Hidden Proteome in Health and Disease Workshop, participant and discussion leader, May 2009, Washington, DC

Department of Energy's New Frontiers in Characterizing Biological Systems Workshop, session chair and report coauthor, May 2009, Washington, DC

National Institutes of Health Neuroscience Blueprint Molluscan Terminology Workshop, June 2007, Seattle, WA

National Science Foundation, Workshop, August 2006 and March 2007: "The Grand Challenges for Cognitive Neuroscience" participant, and leader of the workshop theme: Measuring the Brain: From Synapse to Thought [See: <http://www.nsf.gov/od/oia/activities/neuroscience/> for workshop reports.]

National Science Foundation's Joint U.S. and Thai Workshop on Analytical Sciences, January 2006
National Academies Workshop, Chemical Imaging, March 2005
National Science Foundation, Models of Thought Processes Workshop, Arlington, VA, June 2004
National Academies of Science, Keck Futures Initiative on Cell Signaling, Orange County, CA, November 2003
The National Nanotechnology Initiative, Arlington, VA, October 2003
National Institute of Drug Addiction: Emerging Technologies Workshop, Washington, DC, December 2002
Analytical Instrumentation for the New Millennium Workshop, Tucson, AZ, December 2001
National Institute of Drug Addiction: the Cell Biology of Addiction, Bethesda, MD, June 2000
National Science Foundation Workshop on Analytical Instrumentation, Orlando, FL, March 1999
National Center for Research Resources: Integrated Genomics Technologies Workshop, Washington, DC, October 1998

REVIEW ACTIVITIES

EDITORSHIP

Editor-in-Chief, Analytical Chemistry, December 2011 to present
Interim Editor-in-Chief, Journal of Proteome Research, October 2015 to March 2016
Associate Editor, Analytical Chemistry, 2007–2011
Responsible for aspects of bioanalytical chemistry for the ACS' flagship journal on analytical chemistry. Under my leadership, the impact factor, downloads and submissions have each increased >25%.

EDITORIAL BOARDS

Chiang Mai University Journal of Natural Sciences, Editorial Advisory Board, 2012–current
Chemical Science, Advisory Editorial Board, 2010–2012
Analytical Chemistry, Editorial Board, 2005–2007
Analytical Chemistry-A, Page Advisory Panel, 1995–1997
Analyst, 2003–2007
Analytical and Bioanalytical Chemistry, 2002–2007
Journal of the American Chemical Society, 2002–2004
Journal Separation Science, 2002–2004
Electrophoresis, 2000–2003
Fresenius Journal of Analytical Chemistry, 1999–2001
J. Microcolumn Separations, 1996–2002
Analytica Chimica Acta, 1994–1999

AGENCIES

Beckman Foundation
Defense Advanced Research Projects Agency
Department of Energy
National Institutes of Health
National Science Foundation
Office of Naval Research
Petroleum Research Fund

STUDY SECTIONS

Due to extensive service for NIH reviewing, continuous submission eligible: 2010, 2011, 2012, 2013, 2014, 2015, 2016, 2017, 2018, 2019, 2020, 2021 (with an average of three to six study sections per year!)
College of CSR Reviewers, member, 2010–2014

Specific Study Section list:

NIH ZRG1 BCMB-S 98 R, Grand Opportunity Grants, Study Section Chair, 2009; NIDA CEBRA and SIBR, 2002, 2004–2007, Spring 2012, Fall 2012, Fall 2015; NIH ZRG1 (analytical) (Now BECM), 2001, 2002, 2006; SSS6 Mass Spectrometric Imaging, 2000; BCMBA Biological Chemistry, 2006; ZRG1 BCMB-B (conflict), 2007, 2009; ZRG1 MDCN-G, (P01), 2007; ZRG1-BCMB-A-40-P (P01), 2006; ZGM1 NDPA-A (P01), 2011; ZGM1 GDB-7 (Eureka), 2010; BST-K, Biomedical Computing, 2010; NIH ZRG1 IMST 2009, 2010, 2011; ZRG1 MDCN-A Challenge Grant, 2009; ZRG1 BST-D (TNCP program), 2009; Neurotechnology (NT), 2011; ZRG1 ETTN-B, 2011; ZEB1 OSR-B, 2013; ZRG1 IMST-K, 2013; ZRG1 MOSS-C, 2013; 2014; ZRG1 HIRN, 2015; ZRG1 OBT-J, 2015; ZDK1-GRB-S-O3 2015; ZDA1-JXR-G-11 2016; ZDK1-GRB-N-M5 2016; ZRG1-MOSS-C-56 2015, 2016; ZRG1-BCMB-N-50, 2016; ZRG1-BCMB-P-07, 2016; ZRG1 BCMB-A-51, 2017; ZRG1-BCMB-N-50, 2017; ZRG1-BCMB-N-50, 2018; ZDA1 JXB-N (Chair), 2018; ZDK1-GRB-S-O5, 2018; ZRG1-ETTN-P-70, 2019; ZDA1 YXF-U (01), 2020; ZDA1 TXT-V (10) R (chair), 2020; ZDA1 YXF-U (NIDA Centers), 2020, ZRG1 BCMB-X (shared Instrumentation), 2020; ETTN-B(55) 2021; 08 ZMH1 ERB-M (Brain Initiative), 2021. Of special note, reviewer for Innovator Awards, 2007, 2008, 2009, 2012, 2013, 2014, 2015, 2016, 2017, 2019, 2020 and Pioneer Awards, 2011, 2014, 2015, 2016, 2017, 2018, 2019.

NIH Common Fund Metabolomics Program External Scientific Panel, 2015–2017

Beckman Foundation, New Technology Initiative, 1998, 1999

NSF Career Awards, mail-reviewer panel member, six years, plus NSF Career Panel Reviewer, 2020.

NASA Environmental Health, 1993

INVITED CONFERENCE PRESENTATIONS

318. *High Throughput Mass Spectrometry-Based Single Cell Chemical Characterization*, J.V. Sweedler, Invited Symposium, Pacifichem 2021, December 2022 (virtual).
317. *Characterizing the Enigmatic Posttranslational Modification of Amino Acid Isomerization*, J.V. Sweedler, Invited Symposium, Pacifichem 2021, December 2022 (virtual).
316. *Mass Spectrometry-Based Chemical Characterization of the Cells in the Brain*, J.V. Sweedler, Eastern Analytical Symposium, Plainsboro, NJ, November 2021.
315. *Scaling Down with Bruker: Metabolite and Neuropeptide Measurements in Individual Cells and Organelles*, J.V. Sweedler, Bruker eXceed Symposium: Expanding the Horizons of Single Cell Research, ASMS 2021, October 2021 (virtual).
314. *Single Organelle Mass Spectrometry*, J.V. Sweedler, The Centers of Excellence in Genome Science Annual Meeting, New York, NY, October 2021 (virtual).
313. *Differences Between Similar Cells: How to Characterize Single Cells*, J.V. Sweedler, Keynote Speaker, Select Science Virtual Neuroscience Summit, October 2021 (virtual).
312. *Single Cell and Small Volume D-Amino Acid Measurements in the Brain: What Are They Doing and How Did They Get There?* J.V. Sweedler, Plenary speaker, Beijing Conference and Exhibition on Instrumental Analysis (BCEIA), Beijing, China, September 2021 (virtual).
311. *The Single Cell Chemical Characterization of the Brain*, J.V. Sweedler, Invited Symposium, Pittcon, March 2021 (virtual).
310. *High Throughput Single Cell Metabolomics*, J.V. Sweedler, Single Cell Metabolomics Workshop, February 2021 (virtual).
309. *Creating New Measurement Tools and Using Them to Understand the Chemistry of the Islet*, J.V. Sweedler, American Diabetes Associated Pathway Research Series, January 2021 (virtual).

308. *D-Amino Acids in the Brain and Endocrine Systems*, J.V. Sweedler, Virtual Neuroscience Summit 2020, Keynote speaker, November 2020 (virtual). <https://www.selectscience.net/editorial-articles/world-class-speaker-lineup-announced-for-virtual-neuroscience-summit-2020?artID=52786>
307. *Moving from Genomics and Transcriptomics to the Molecules Themselves: High-Throughput Single Cell Mass Spectrometry of Organelles*, J.V. Sweedler, The Centers of Excellence in Genome Science Annual Meeting, UC Berkeley, CA, October 2020 (virtual).
306. *LC/MS-Based Discovery of Peptide Hormones in Fishes and the Fluidity of Sex*, J.V. Sweedler, Bioinformatics Solutions Inc. ASMS on-line users group meeting, July 2020.
305. *The Characterization of the Cells in the Brain using Mass Spectrometry*, J.V. Sweedler, MSACL and IMS, on-line conference, May 2020.
304. *High Throughput Single Cell Mass Spectrometry of the Brain*, J.V. Sweedler, Pittcon, Chicago, IL, March 2020.
303. *D-Amino Acids and D-Amino Acid-Containing Peptides: How are They Formed and What Do They Do?* J.V. Sweedler, CASSS Award Address, HPLC Kyoto, Japan, December 2019.
302. *High-Throughput Single Cell Mass Spectrometry of the Brain*, J.V. Sweedler, Keynote Lecture, the Beijing Conference and Exhibition of Instrumental Analysis, Keynote Lecture, Beijing, China, October 2019.
301. *Correlated Chemical Imaging to Explore Diverse Spatiochemical Expression in Bacterial Systems*, J.V. Sweedler, Keynote Lecture, SIMS XXII, Kyoto, Japan, October 2019.
300. *Single Cell Metabolomics*, J.V. Sweedler, the ASMS Asilomar Conference on Mass Spectrometry Imaging: New Developments and Applications, Pacific Grove, CA, October 2019.
299. *Measuring the Brain a Cell at a Time With Mass Spectrometry*, J.V. Sweedler, Keynote Lecture, 8th Human Proteome Organization World Congress, Adelaide, Australia, September 2019.
298. *D-Amino Acid Containing Peptides in the Brain: What Do They Do and How Did They Get There?* J.V. Sweedler, IDAR 2019: the 4th International Conference on D-Amino Acids, Special Dinner Lecture, Tokyo, Japan, September 2019.
297. *Metabolomics and Proteomics: From Methods to Applications*, J.V. Sweedler, a 6-hour unit in the Neuroscience School of Advanced Studies Single Cell Omics course, organized by the Neuroscience School of Advanced Studies (NSAS), The Island of San Servolo, Venice, Italy, June 2019.
296. *Characterizing Peptide and Metabolite Complexity of the Human Islets of Langerhans and Islet cells*, J.V. Sweedler, American Diabetes Association's 79th Scientific Sessions, San Francisco, CA, June 2019.
295. *Small Volume and Single Cell D-Amino Acid Measurements: What Are They Doing and How Did They Get There?* Plenary Speaker, J.V. Sweedler, 43rd International Symposium on Capillary Chromatography, Fort Worth, TX, May 2019.
294. *Approaches for Measuring the Brain's Chemistry a Cell at a Time*, Department of Pharmacology, Oxford University, Oxford (UK), May 2019.
293. *Dealing with the Data Onslaught From High Throughput Single Cell Profiling*, J.V. Sweedler, Keynote, Analytical Chemistry and Big Data forum, Southeast University, Nanjing, China, April 2019.
292. *Measuring the Brain with Mass Spectrometry: From Imaging to Cell Profiling*, J.V. Sweedler, Keynote, the 1st Mass Spectrometry Imaging Conference, China Pharmaceutical University, Nanjing, China, April 2019.
291. *Increasing Chemical Information From Single Cell Measurements: Measuring Metabolites, Peptides and Transcripts From the Same Cell*, Pittcon, J.V. Sweedler, Philadelphia, PA, March 2019.

290. *Write it, Speak it: Effective Communication. How to Talk and Write about your Research*, ACS On Campus Columbia, Bogotá, Columbia, February 2019.
289. *D-Amino Acid Containing Peptides*, ACS On Campus Columbia, Bogotá, Columbia, February 2019.
288. *Characterizing the Brain a Single Cell at a Time*, China HUPO, J.V. Sweedler, Plenary Speaker, Guangzhou, China, November 2018.
287. *Using Mass Spectrometry to Characterize Individual Cells in the Brain*, J.V. Sweedler, Analytical Chemistry, Virtual Symposium, Keynote Speaker, LabRoots Virtual Events, October 2018.
286. *When is a Single Cell Enough? Characterizing the Chemistry Within Individual Cells*, J.V. Sweedler, the AbbVie 2018 Analytical Symposium, Deerfield, IL, August 2018.
285. *The Single Cell Chemical Characterization of the Cells in the Brain*, J.V. Sweedler, the Kavli Brain Symposium, Invited Speaker, ACS National Meeting, Boston, MA, August 2018.
284. *Single Cell Multi-omics: Measuring the Peptides, Metabolites and Transcripts from the Same Cell*, J.V. Sweedler, Keynote Lecture, HPLC 2018, Washington, DC, July 2018.
283. *Preparing Your Manuscript and Publishing it from an Editor's Perspective*, J.V. Sweedler, Invited Workshop, HPLC 2018, Washington, DC, July 2018.
282. *D-Amino Acid Containing Neuropeptides*, J.V. Sweedler, Protein Processing, Trafficking and Secretion, Gordon Research Conference, Colby-Sawyer College, NH, July 2018.
281. *Measuring Prohormone Processing in Individual Cells Using Mass Spectrometry*, J.V. Sweedler, Mentorship Leader, Protein Processing, Trafficking and Secretion, Gordon Research Seminar, Colby-Sawyer College, NH, July 2018.
280. *Understanding Diabetes One Cell at a Time*, J.V. Sweedler, Scientific Sessions, American Diabetes National Meeting, Orlando, FL, June 2018.
279. *Mass Spectrometry-Based Approaches for Characterizing the Cells of the Brain*, J.V. Sweedler, Plenary Speaker, the First Swedish National Chemical Society Meeting, Lund, Sweden, June 2018.
278. *D-Amino Acids in our Brain: How to Characterize Them and What Do They Do*, J.V. Sweedler, Plenary Speaker, 8th International Symposium on Bioanalysis, Biomedical Engineering and Nanotechnology, Changsha, China, May 2018.
277. *From Mass Spectrometry Imaging to MS of Individual Cells: Measuring Neurochemical Changes in the Brain*, J.V. Sweedler, Plenary Speaker, The 2nd Annual Ohio Mass Spectrometry and Metabolomics Symposium, Columbus, OH, May 2018.
276. *Multimodal Chemical Imaging Using Mass Spectrometry Imaging and Vibrational Spectroscopic Imaging of the Brain*, J.V. Sweedler, Invited Symposium, Pittcon, Orlando, FL, March 2018.
275. *Probing Individual Brain Cells: From New MALDI-MS-Based Measurement Tools to New Insights*, J.V. Sweedler, Invited Symposium, Pittcon, Orlando, FL, March 2018.
274. *Metabolomics and Proteomics: From Methods to Applications*, J.V. Sweedler, an 8-hour unit in the Neuroscience School of Advanced Studies Single Cell Omics, organized by the Neuroscience School of Advanced Studies (NSAS), Certosa di Pontignano, Siena, Italy, September 2017.
273. *Publishing Your Manuscript: the Editor's Perspective*, J.V. Sweedler, Publication Workshop, Euroanalysis 2017, Stockholm, Sweden, August 2017.
272. *Measuring Endogenous D-Amino Acids in the Brain - From Brain Regions and Individual Cells to Cellular Release - Using CE and LC*, J.V. Sweedler, HPLC 2017, Prague, Czech Republic, June 2017.

271. *High Throughput Single Cell Mass Spectrometry for Profiling Cellular Heterogeneity*, J.V. Sweedler, SECIM Metabolomics Symposium Keynote, Orlando, FL, May 2017.
270. *Mass Spectrometry Imaging and Single Cell Analysis*, J.V. Sweedler, The Lipids School, American Oil Chemists Society, Orlando, FL, April 2017.
269. *High Throughput Single Cell Mass Spectrometry: From New Measurement Tools to New Chemical insights*, J.V. Sweedler, MinnMass Discussion Group, University of Minnesota, St. Paul Campus, St. Paul, MN, April 2017.
268. *D-Amino Acids and D-Amino Acid Containing Neuropeptides as Cell-Cell Signaling Molecules*, J.V. Sweedler, Invited Award Symposium, Pittcon, Chicago, IL, March 2017.
267. *Analytical Tools for the Cell by Cell Characterization of the Brain*, J.V. Sweedler, Invited Symposium, Pittcon, Chicago, IL, March 2017.
266. *Measuring Signaling Peptides One Cell at a Time*. J.V. Sweedler, Keynote lecture, 2017 ASMS Sanibel Meeting, Clearwater Beach, FL, January 2017.
265. *Integrated Multimodal Analysis of Cell and Circuit Specific Processes in Hippocampal Function*, J.V. Sweedler, Third Brain Initiative meeting, North Bethesda, MD, December 2016.
264. *New Technologies for Single Cell Chemical Measurements*, J.V. Sweedler, Brain Initiative Cell Census Consortium, Bethesda, MD, December 2016.
263. *Analytical Measurements of the Cells in the Brain*, J.V. Sweedler, Plenary Talk, ANACHEM / Society of Applied Spectroscopy Symposium, Warren, MI, November 2016.
262. *Chemical Measurements of the Brain in Context*, J.V. Sweedler, opening talk for the NSF-sponsored workshop entitled: Measuring the Brain: From Synapse to Thought, Arlington, VA, October 2016.
261. *The Chemical Characterization of the Brain: From New MS-Based Measurement Tools to New Insights*, J.V. Sweedler, Departmental Colloquia, Arizona State University, Tempe, AZ, October 2016.
260. *Combined Mass Spectrometry Imaging and Vibrational Imaging of the Brain for Enhanced Chemical Information Content*, J.V. Sweedler, ACS National Meeting, Philadelphia, PA, August 2016.
259. *Viewpoint on Open Access by an Editor, Author, Reviewer, and Reader*, J.V. Sweedler, CINF Symposium: The Value of Open, ACS National Meeting, Philadelphia, PA, August 2016.
258. *Heterogeneity in Peptide Processing Measured via High Throughput Single Cell Mass Spectrometry*, J.V. Sweedler, Gordon Research Conference on Protein Processing, Trafficking and Secretion, New London, NH, July 2016.
257. *Neuropeptide Processing Heterogeneity Measured via Single Cell Mass Spectrometry Reveals Regional Differences in Peptide Processing*, J.V. Sweedler, International Conference of Regulatory Peptides, Rouen, France, July 2016.
256. *Measuring Cell to Cell Heterogeneity Using Mass Spectrometry Imaging Combined with Capillary Electrophoresis Mass Spectrometry*, J.V. Sweedler, Keynote Lecture at HPLC 2016, San Francisco, CA, June 2016.
255. *Preparing Your Manuscript and Publishing it from an Editor's Perspective*, J.V. Sweedler, Tutorial at HPLC 2016, San Francisco, CA, June 2016.
254. *Creating Tools for Single Cell Measurements in the Brain*, J.V. Sweedler, Lu Jiaxi Lectureship, University of Xiamen, Xiamen, PR China, June 2016.
253. *High Throughput Single Cell Mass Spectrometry for Profiling Cellular Heterogeneity*, J.V. Sweedler, 2016 International Symposium on Analytical Chemistry Frontiers, Plenary Lecture, Xiamen, PR China, June 2016.

252. *Scientific Dissemination in Analytical Chemistry: Views from an Editor*, Third China-US Analytical Chemistry Workshop, Xiamen, PR China, June 2016.
251. *Measuring D-amino Acids in the Brain*, J.V. Sweedler, International Summer School - Watching at the "D" side: D-Amino Acids and their Significance in Neurobiology, Como, Italy, June 2016.
250. *Creating New Measurement Tools to Study the Brain*, J.V. Sweedler, 2016 Richard Larock Undergraduate Research Conference, Plenary Speaker, University of California at Davis, May 2016.
249. *New Approaches to Characterize Neurochemical Pathways*, J.V. Sweedler, Plenary Speaker, 2016 Canada-China Analytical Chemistry Conference (CCACC2016), Southwest University, Chongqing, China, May 2016.
248. *Looking for Rare Cells via High-throughput Single Cell Mass Spectrometry Profiling*, J.V. Sweedler, Pittcon, Atlanta, GA, March 2016.
247. *The Chemical Characterization of the Brain: From New MS-Based Measurement Tools to New Insights*, J.V. Sweedler, Pittcon, Atlanta, GA, March 2016.
246. *Scientific Writing: From Research Proposals to Publishing*, J.V. Sweedler, BIOTEC: Young Researchers Symposium, Bangkok Thailand, February 2016.
245. *Overview of Biosensing and Measurement Science*, J.V. Sweedler, BIOTEC: Young Researchers Symposium, Bangkok, Thailand, February 2016.
244. *Cellular Heterogeneity Measured via High-Throughput Single Cell Mass Spectrometry Imaging and Profiling*, J.V. Sweedler, Pacifichem, Honolulu, HI, December 2015.
243. *Microfluidic Devices for Controlling the Environment Around Dorsal Root Ganglion Neurons and Collecting Stimulated Release of Transmitters and Peptides*, J.V. Sweedler, Pacifichem, Honolulu, HI December 2015.
242. *Label-Free Platform for Identification and Chemical Profiling of Cell Types in the Brain*, J.V. Sweedler, 2015 BRAIN Investigators Meeting, Rockville, MD, December 2015.
241. *Creating a Cell Census Using Mass Spectrometry Profiling of the Cells in our Brain*, J.V. Sweedler, BRAIN Initiative Cell Census Consortium, Rockville, MD, December 2015.
240. *Measuring the Chemistry in the Cells in our Brains a Cell at a Time*, J.V. Sweedler, Keynote Speaker, Single Cell Analysis meeting, Cold Spring Harbor Laboratories, Long Island, NY, November 2015.
239. *Mass Spectrometry Tools for Probing Cell to Cell Chemical Heterogeneity*, J.V. Sweedler, ANACHEM Award Address, SciX, Providence, RI, September 2015.
238. *Measuring the Chemistry in Tissues, Individual Cells and in Blood*, J.V. Sweedler, Keynote speaker, World Congress for Microcirculation, Kyoto, Japan, September 2015.
237. *Preparing a Scientific Manuscript, the Peer Review Process and Writing a Review: Views from an Editor*, J.V. Sweedler, Keynote speaker, HPLC, Beijing, China, September 2015.
236. *Single Cell Analyses via High-throughput Single Cell Mass Spectrometry Profiling and Capillary-scale Separations*, J.V. Sweedler, Plenary speaker, HPLC, Beijing, China, September 2015.
235. *Miniaturizing a Measurement: From Nanoliter Volume NR to Single Cell Mass Spectrometry*, J.V. Sweedler, Keynote speaker, ACS National Meeting Graduate Student Symposium, Boston, MA, August 2015.
234. *The Cell by Cell Chemical Characterization of the Brain: From New Tools to New Insights*, J.V. Sweedler, Plenary speaker, IUPAC, Busan, Korea, August 2015.

233. *Mass Spectrometry-Based Approaches to Enable the Cell by Cell Chemical Characterization of the Brain*, J.V. Sweedler, Single Cell Analysis Course, Cold Spring Harbor Laboratories, Long Island, NY, June 2015.
232. *High Throughput Single Cell Measurements*, J.V. Sweedler, ABRF, Saint Louis, MO, March 2015.
231. *The Cell by Cell Chemical Characterization of the Brain via Mass Spectrometry*, J.V. Sweedler, Pittcon, New Orleans, LA, March 2015.
230. *Tools to Measure D-Amino Acid Signaling in the Brain*, J.V. Sweedler, Pittcon, New Orleans, LA, March 2015.
229. *The Cell by Cell Chemical Characterization of the Brain: From New MS-Based Measurement Tools to New Insights*, J.V. Sweedler, Chicago Area Mass Spectrometry Discussion Group, Northwestern University, February 2015.
228. *Sensing and Characterizing Complex Living Systems Across Scales -- From the Nano to the Macro*, J.V. Sweedler, Plenary Lecture, International Conference on Nanoenergy and Nanosystems 2014 (NENS2014), Beijing, China, December 2014.
227. *New Tools to Measure D-Amino Acid Signaling in the Brain*, J.V. Sweedler, Plenary Lecture, 14th Asia-Pacific International Symposium on Microscale Separations and Analysis (APCE2014), Kyoto, Japan, December 2014.
226. *Mass Spectrometry Approaches to Characterize Novel Brain Chemistry*, J.V. Sweedler, The Keynote Lecture for the Proteomics Society of Turkey 1st Congress, Antalya, Turkey, November 2014.
225. *Heterogeneity Measured Using High-Throughput Single Cell Characterization with Mass Spectrometry Imaging and Profiling*, J.V. Sweedler, Plenary Speaker, Ourcon II: Mass Spectrometry Imaging Conference, Antalya, Turkey, November 2014.
224. *Mass Spectrometry Imaging and Profiling of the Brain*, J.V. Sweedler, Keynote Speaker, ACS-NJ Mass Spectrometry Discussion Group (MSDG), Somerset, NJ, September 2014.
223. *Using Mass Spectrometry to Characterize Brain Neurochemistry: Assaying Small Brain Regions Down to Individual Cells*, J.V. Sweedler, Japan Analytical Scientific Instrument Show (JASIS), Tokyo, Japan, September 2014.
222. *D-Aspartate is a Neurotransmitter*, J.V. Sweedler, Plenary speaker, The 2nd International Conference on D-Amino Acid Research, Tochigi, Japan, September 2014.
221. *Neurometabolomics: The Cell by Cell Chemical Characterization of the Brain*, J.V. Sweedler, ACS National Meeting, San Francisco, CA, August 2014.
220. Award Address: *Tools to Measure D-Amino Acid Signaling in the Brain*, J.V. Sweedler, ACS National Meeting, San Francisco, CA, August 2014.
219. *Mass Spectrometry-Based Approaches to Enable the Cell by Cell Chemical Characterization of the Brain*, J.V. Sweedler, Single Cell Analysis Course, Cold Spring Harbor Laboratories, Long Island, NY, June 2014.
218. *Industrialization of Biology: A Roadmap to Accelerate Advanced Manufacturing of Chemicals*, J.V. Sweedler, National Academy of Sciences, Arlington, VA, May 2014.
217. *MS-Based Characterization Of The Brain: From Individual Cells To Cellular Release*, J.V. Sweedler, 35th Annual MCF Spring Symposium, Minneapolis, MN, May 2014.
216. *Tools to Measure D-Amino Acid Signaling in the Brain*, J.V. Sweedler, HPLC 2014, New Orleans, LA, May 2014.

215. *The Evolving Frontiers of Analytical Chemistry*, J.V. Sweedler, Analytica 2014, Munich Germany, April 2014.
214. *Neuropeptidomics: Approaches for the Discovery of New Neuropeptides and their Functions*, J.V. Sweedler, Experimental Biology 2104, San Diego, CA, April 2014.
213. *Technologies for Measuring Cell to Cell Signaling in the Brain*, J.V. Sweedler, Plenary lecture, Annual Meeting of the American College of Neuropsychopharmacology, Hollywood, FL, December 2013.
212. *Tools to Measure D-Amino Acid Signaling in the Brain*, J.V. Sweedler, Beijing Conference and Exposition on Instrumental Analysis (BCEIA), Beijing, China, October 2013.
211. *Neurometabolomics: From New Tools to New Insights on Cell to Cell Signaling in the Brain*, J.V. Sweedler, DICP Symposium on New Separation/Analytical Methods and Metabolomics, Dalian Institute of Chemical Physics, Dalian, China, October 2013.
210. *Correlated Molecular Imaging: Hyphenating Mass Spectrometry Imaging and Raman Imaging for Increased Chemical information*, P. Bohn and J.V. Sweedler, World Molecular Imaging Conference, Savannah, GA, September 2013.
209. *Technologies to Enable Single Cell Measurements of Neurons*, J.V. Sweedler, Frontiers of Single Cell Analysis Conference, Stanford, CA, September 2013.
208. *New Measurement Approaches to Studying the Chemical Complexity of the Spine and Dorsal Root Ganglia*, J.V. Sweedler, S.S. Rubakhin, 19th Annual Kentucky Spinal Cord & Head Injury Research Trust Symposium, Louisville, KY, May 2013.
207. *How Have Advances in Measurement Tools Driven Neuroscience Over the Past Decades?* J.V. Sweedler, 40th Anniversary of the Barnett Institute Gala and the 2013 Barnett Lecturer, Northeastern University, Boston, MA, April 2013.
206. *Single Cell Assays: Past, Present and Future Trends*, J.V. Sweedler, Pittcon, Philadelphia, PA, March 2013.
205. *Mass Spectrometry Imaging of Individual Neurons*, J.V. Sweedler, Gordon Conference on Gaseous Ions: Structures, Energetics & Reactions, Galveston, TX, February 2013.
204. *Single Cell Mass Spectrometry*, J.V. Sweedler, 2012 ACS Southeastern Regional Meeting, Raleigh, NC, November 2012.
203. *The Cell by Cell Characterization of the Brain*, J.V. Sweedler, The Second China–US Analytical Chemistry Workshop, Beijing, China, September 2012.
202. *The Cell by Cell Chemical Characterizations of the Brain via Mass Spectrometry: From Profiling to Imaging*, Ourense Conference on Imaging Mass Spectrometry, J.V. Sweedler, Plenary Speaker, Ourense, Spain, September 2012.
201. *High Throughput Single Cell Profiling via Mass Spectrometry Imaging*, J.V. Sweedler, American Chemical Society Annual Meeting, Philadelphia, PA, August 2012.
200. *From Chemical Imaging to Metabolomics: Technologies for Probing the Brain's Chemistry*, J.V. Sweedler, Center for Analytical Instrumentation Development's Annual Meeting, Plenary Lecture, Purdue University, West Lafayette, IN, June 2012.
199. *Measuring Neuropeptides: From Characterization to Function*, J.V. Sweedler, Bioanalytical Sensors Gordon Research Conference, Newport, Rhode Island, June 2012.
198. *Approaches for Single Cell Analysis via Mass Spectrometry*, J.V. Sweedler, First Single Cell Analysis Course, Cold Spring Harbor Laboratories, Long Island, NY, June 2012.

197. *Single Neuron Peptidomics and Metabolomics: From Discovery of Novel Molecules to Understanding Their Functions*, J.V. Sweedler, The NIH Common Fund: Single Cell Analysis Workshop, Washington, D.C., April 2012.
196. *D-Amino Acid Signaling in the Brain: From Formation and Localization to Function*, J.V. Sweedler, Pittcon, Orlando, FL, March 2012.
195. *Neurometabolomics: The Cell by Cell Chemical Characterizations of the Brain*, J.V. Sweedler, Pittcon, Orlando FL, March 2012.
194. *Neuropeptidomics: From Discovery to Function*, J.V. Sweedler, Pittcon, Orlando, FL, March 2012.
193. *Analytical Chemistry: A Vision for the Future*, J.V. Sweedler, ACS Editors meeting, La Jolla, CA, January 2012.
192. *Approaches and Instrumentation for Measuring the Brain's Chemistry a Cell at a Time*, J.V. Sweedler, Brazilian Mass Spectrometry Meeting, Campinas, Brazil, December 2011.
191. *Downscaling Analytical Measurements to the Nanoliter Scale for Probing Individual Cells*, J.V. Sweedler, Eastern Analytical Symposium, Somerset, NJ, November 2011.
190. *Neuropeptidomics: Approaches Enabling the Discovery of New Neuropeptides and the Elucidation of their Functions*, J.V. Sweedler, International Symposium on Enabling Technologies, Boston, MA, October 2011.
189. *Neuropeptidomics: From the Discovery of New Neuropeptides to the Elucidation of their Functions*, J.V. Sweedler, 6th Annual Peptide Therapeutics Symposium, Salk Institute, San Diego, CA, October 2011.
188. *Measuring the Brain's Chemistry a Cell at a Time*, J.V. Sweedler, Single Cell Analysis Summit, San Francisco, CA, September 2011.
187. *Measuring Cell to Cell Differences in the Brain Metabolome*, J.V. Sweedler, 27th Asilomar Conference on Mass Spectrometry, Pacific Grove, CA, September 2011.
186. *Analytical Approaches for Probing Cellular Heterogeneity*, J.V. Sweedler, Plenary, 57th International Conference on Analytical Sciences and Spectroscopy (ICASS) and the 3rd Canada-China Analytical Chemistry Conference (CCACC), Toronto, Canada, August 2011.
185. *D-Aspartate and D-Glutamate in the Brain: From Formation and Localization to Function*, J.V. Sweedler, 12th International Conference on Amino Acids, Peptides and Proteins, Beijing, China, August 2011.
184. *Neuropeptidomics of the Suprachiasmatic Nucleus: From Discovery to Function*, J.V. Sweedler, 9th World Congress on Neurohypophysial Hormones, Boston, MA, July 2011.
183. *Neurometabolomics: Cell by Cell Chemical Characterizations*, J.V. Sweedler, Cold Spring Harbor Workshop on Single Cell Analysis, New York, July 2011.
182. *Probing Molecular Distributions within Neurons* J.V. Sweedler, Annual SIMS Workshop, Baltimore, MD, May 2011.
181. *Metabolome Measurements From Individual Neurons Using Capillary Electrophoresis/Mass Spectrometry*, J.V. Sweedler, Microscale Bioseparations, San Diego, CA, May 2011.
180. *Metabolomics and Chemical Imaging for Probing Cellular Heterogeneity*, J.V. Sweedler, DOE Genomic Science: Systems Biology for Energy and Environment, Crystal City, MD, April 2011 (plenary lecture).
179. *Chemical Imaging Using Mass Spectroscopy and Raman Spectroscopy*, J.V. Sweedler and P.W. Bohn, Pittsburgh Conference, Atlanta, GA, March 2011.

178. *Mass Spectrometry-Based Tools for Probing Neuronal Communication*, J.V. Sweedler, Pittsburgh Conference, Atlanta, GA, March 2011.
177. *Neuropeptides: From Discovery to Function*, J.V. Sweedler, International Peptide Society, J.V. Sweedler, Kyoto, Japan, December 2010.
176. *Approach to Measure Neuropeptides*, J.V. Sweedler, FACSS, Raleigh, NC, October 2010.
175. *Neuropeptide Discovery: From Characterization to Function*, J.V. Sweedler, International Regulatory Peptides Symposium, Belfast, Ireland, September 2010.
174. *Unraveling Cell to Cell Signaling in the Brain with Electrophoretic Separations and Mass Spectrometry*, J.V. Sweedler, ITP2010, Baltimore, MD, September 2010.
173. *Measuring the Chemical Signaling Between Neurons with Separations and Mass Spectrometry*, J.V. Sweedler, 4th International Symposium on Bioanalysis, Biomedical Engineering and Nanotechnology (ISBBN 2010), Hunan University, Changsha, China, June 2010.
172. *Neuropeptidomics: Profiling the Peptides in our Brains*, J. V. Sweedler, 35th International Symposium on High Performance Liquid Phase Separations and Related Techniques (HPLC 2010), Boston, MD, June 2010.
171. *Single-Cell Metabolomics Using Capillary Electrophoresis Electrospray Ionization Mass Spectrometry*, J.V. Sweedler, 34th International Symposium on Capillary Chromatography, Riva del Garda, Italy, June 2010.
170. *Mass Spectrometric Profiling and Imaging Approaches for Understanding the Neuronal Metabolome*, J.V. Sweedler, Pittsburgh Conference, Orlando, FL, March 2010.
169. *Imaging Cell to Cell Signaling Using Mass Spectrometry*, J.V. Sweedler, Imagine, Amsterdam Imaging, The Emerging Role of Ion Mobility MS-Based Molecular Imaging Techniques in the Life Sciences, Amsterdam, Netherlands, February 2010.
168. *From Single Neurons to Brain Regions: Unraveling Novel Cell to Cell Signaling in the Brain*, J.V. Sweedler, Biomolecular and Biomedical Sciences Lecture, FOM Institute/AMOLF, Amsterdam, Netherlands, February 2010.
167. *Understanding Neuropeptide Complexity in the Brain--From Discovery to Function*, J.V. Sweedler, Netherlands Proteomics Centre Progress Meeting, Amsterdam, Netherlands, February 2010.
166. *Chemical Imaging Using Mass Spectrometry*, J.V. Sweedler and P.W. Bohn, Department of Energy Genomic Science Meeting, Breakout Session: Imaging and Technology for Systems Biology, Washington, DC, February 2010.
165. *Spatial Correlation of Confocal Raman Scattering and Secondary Ion Mass Spectrometric Molecular Images of Lignocellulosic Materials*, P.W. Bohn and J.V. Sweedler, BESC Biomass Characterization Workshop, Riverside, CA, January 2010.
164. *Unraveling Cell to Cell Signaling in the Brain with Separations and Mass Spectrometry*, J.V. Sweedler, The Chromatography Forum of Delaware Valley, Media, PA, January 2010.
163. *Combining Cell Culturing, Single Cell Mass Spectrometry and Microfluidics to Study Neuronal Network Formation in Well Defined Networks*, J.V. Sweedler, New Mexico Neural Restoration Workshop, Albuquerque, NM, November 2010.
162. *Measuring the Brain's Chemistry a Cell at a Time*, J.V. Sweedler, Eastern Analytical Symposium and Exposition, Somerset, NJ, November 2009.
161. *Single Neuron Metabolomics Using Capillary Electrophoresis*, J.V. Sweedler, The 24th International Symposium on Microscale Bioseparations, Dalian, China, October 2009.

160. *Unraveling the Brain Peptidome Using New Analytical Techniques*, J.V. Sweedler, 1st Sino–US Symposium on Separation Sciences, Dalian Institute of Chemical Physics, Chinese Academy of Sciences, Dalian, China, October 2009.
159. *Using Mass Spectrometry to Measure the Chemistry of the Brain*, J.V. Sweedler, Greater Boston Mass Spectrometry Discussion Group, Boston, MA, September 2009.
158. *Single Cell Metabolomics*, J.V. Sweedler, Cold Spring Harbor Workshop on Single Cell Analysis, New York, August 2009.
157. *Unraveling the Secrets of the Brain with New Analytical Techniques*, J.V. Sweedler, Center for Analytical Instrumentation Development Annual Meeting, Purdue University, West Lafayette, IN, June 2009.
156. *Measuring the Dynamic and Spatially Resolved Peptidome of the Brain*, J.V. Sweedler, NIDA Workshop on The Hidden Proteome in Health and Disease, Bethesda, MD, May 2009.
155. *Understanding Novel Neurochemical Pathways: Mass Spectrometry and Separations for Neuroscience Research*, J.V. Sweedler, New Jersey ACS and MS Discussion Group, Somerset, NJ, March 2009.
154. *From Single Neurons to Brain Regions: Characterizing Neuropeptide Release*, J.V. Sweedler, Pittsburgh Conference, Chicago, IL, March 2009.
153. *Cell-to-Cell Differences in the Neurometabolome*, J.V. Sweedler, Pittsburgh Conference, Chicago, IL, March 2009.
152. *Mass Spectrometry Imaging of Well-Defined Neuronal Networks*, J.V. Sweedler, Pittsburgh Conference, Chicago, IL, March 2009.
151. *Microseparations for Neuroscience*, J.V. Sweedler, HPLC Kyoto, Kyoto, Japan, December 2008.
150. *Unraveling the Neuropeptidome with New Approaches and Novel Insights*, J.V. Sweedler, Society for Neuroscience, Washington, DC, November 2008.
149. *Using Microfluidics to Control the Extracellular Environment and to Measure Release from Selected Neurons*, J.V. Sweedler, M. Zhong, J.N. Hanson, K. Jo, L. Millet, S.S. Rubakhin, M.U. Gillette, R.G. Nuzzo, MicroTAS 2008, San Diego, CA, October 2008.
148. *Measuring the Brain's Chemistry a Cell at a Time*, J.V. Sweedler, International Chemistry Conference, Taipei: Analytical Chemistry, National Sun Yat-sen University, Kaohsiung, October 2008.
147. *Understanding Neuropeptide Complexity in the Brain - From Discovery to Function*, J.V. Sweedler, Gordon Conference on Proprotein Processing, Trafficking & Secretion, New London, NH, July 2008.
146. *Neurometabolomics: A Cell at a Time*, J.V. Sweedler, S.S. Rubakhin, ASMS 2008, Denver, CO, June 2008.
145. *From Controlling the Extracellular Environment to Measuring Neuronal Release: Combining Neuronal Cell Culture and Microfluidics*, J.V. Sweedler, HPLC 2008, Baltimore, MD, May 2008.
144. *Unraveling the Secrets of the Brain, Cell by Cell, with New Analytical Techniques*, J.V. Sweedler, Brain Training: Secrets, Drugs and Analysis: RSC Theophilus Redwood Symposium, Cambridge University, Cambridge, UK, April 2008.
143. *Capillary Electrophoresis for Single Cell Neurometabolomics*, J.V. Sweedler, International Symposium on MicroScale Bioseparations, Berlin, Germany, March 2008.
142. *Neurometabolomics: A Cell at a Time*, J.V. Sweedler, in the session Emerging Technologies and Capabilities of Metabolomics, ACS National Meeting, Boston, MA, August 2007.

141. *Measuring the Neurochemistry in the Molluscan Brain*, J.V. Sweedler, Gastropod Neuroscience: Past Successes and Future Prospects, San Juan, WA, June 2007.
140. *How Complex is Peptidergic Signaling in the Brain?* J.V. Sweedler, Understanding Complex Systems, Urbana, IL, May 2007.
139. *Defining the Pain Proteome: Issues and Opportunities*, J.V. Sweedler, Basic Science Dinner at the American Pain Society, Washington, DC, May 2007.
138. *What Future Tools are Needed to Measure the Brain?* J.V. Sweedler, The Grand Challenges for Cognitive Neuroscience, National Science Foundation, Washington, DC, March 2007.
137. *Neurometabolomics Technologies: Measuring Cell-to-Cell Signaling in the Brain*, J.V. Sweedler, Pittsburgh Conference, Chicago, IL, February 2007.
136. *Technologies for Understanding Novel Neurochemistry One Cell at a Time*, J.V. Sweedler, Pittsburgh Analytical Chemistry Award, Pittsburgh Conference, Chicago, IL, February 2007.
135. *Single Cell Imaging in the Brain*, J.V. Sweedler, Sanibel Conference, ASMS, Sanibel, FL, January 2007.
134. *Using Capillary Electrophoresis to Study D-Aspartate and D-Glutamate*, J.V. Sweedler, Plenary Lecture, International Symposium on MicroScale Bioseparations, Vancouver, Canada, January 2007.
133. *Understanding the Brain Cell by Cell*, J.V. Sweedler, Plenary Lecture at the 3rd Münster Conference on Single Cell and Molecule Technologies, Münster, Germany, December 2006.
132. *Technologies for Cellular Neurometabolomics*, J.V. Sweedler, Metabolomic Approaches to Neurological Disorders, A Satellite Meeting to the Society for Neuroscience, sponsored by NINDS, NIH, Atlanta, GA, October 2006.
131. *Mass Spectrometry in the Brain: From Single Cells to Imaging*, J.V. Sweedler, Federation of Analytical Chemistry and Spectroscopy Societies (FACSS), Lake Buena Vista, FL, September 2006.
130. *New Measurement Approaches for Characterizing the Neuropeptides in the Brain*, J.V. Sweedler, Plenary Lecture, The 2006 International Narcotics Research Conference, St. Paul, MN, July 2006.
129. *Neuropeptidomics: Methods for Characterizing the Peptides in a Brain*, J.V. Sweedler, Keynote Lecture, HPLC 2006, San Francisco, CA, June 2006.
128. *Technologies for Cellular Neurometabolomics*, J.V. Sweedler, Metabolomics 2006, The Metabolomics Society, Boston, MA, June 2006.
127. *Profiling and Imaging Neuropeptides in the Brain*, J.V. Sweedler, E.B. Monroe, N. Hatcher, S.S. Rubakhin, ASMS, Seattle, WA, May 2006.
127. *Unraveling the Secrets of the Brain with More Sensitive and Smaller Analytical Techniques*, J.V. Sweedler, Pittsburgh Conference, Orlando, FL, March 2006.
126. *Measuring the Neuropeptides in the Brain Cell by Cell: Massively Parallel Mass Spectrometric Microanalysis*, J.V. Sweedler, Pittsburgh Conference, Orlando, FL, March 2006.
125. *Chirality in your Brain: Detecting D-Amino Acids and D-Amino Acid Containing Peptides in Single Neurons*, J.V. Sweedler, International Symposium on MicroScale Bioseparations, Amsterdam, The Netherlands, January 2006.
124. *Techniques to Study the Nanoenvironment around Neurons*, J.V. Sweedler, Joint National Science Foundation – Thailand Analytical Sciences Workshop, Chiang Mai, Thailand, January 2006.
123. *Metabolomics: Techniques for Studying the Brain's Chemistry Neuron by Neuron*, J.V. Sweedler, S.S. Rubakhin, ACS National Meeting, Washington, DC, August 2005.

122. *Chirality in your Brain: Detecting D-Amino Acids and D-Amino Acid Containing Peptides in Neurons*, J.V. Sweedler, H. Miao, M. Ewing, C. Scanlan, S.S. Rubakhin, ACS National Meeting, Washington, DC, August 2005.
121. *Mass Spectrometry of the Brain: From Single Cells to Imaging*, J.V. Sweedler, J. Jurchen, E. Monroe, S.S. Rubakhin, ACS National Meeting, Washington, DC, August 2005.
120. *Probing Neurons with Separation*, J.V. Sweedler, Plenary Lecture, HPLC, Stockholm, Sweden, June 2005.
119. *Mass Spectrometric Profiling of Neurons*, J.V. Sweedler, American Society of Mass Spectrometry, San Antonio, TX, June 2005.
118. *Understanding Neurochemistry Neuron by Neuron*, J.V. Sweedler, Plenary Speaker at the 7th Central New England Chromatography Council (CNECC) and the Greater Boston Mass Spectrometry Discussion Group Symposium, Boston, MA, May 2005
117. *Approaches for Imaging Peptides in the Brain*, J.V. Sweedler, National Academies Chemical Imaging Workshop, Washington, DC, March 2005.
116. *Technologies for Neuroproteomics*, J.V. Sweedler, Pittsburgh Conference, Orlando, FL, March 2005.
115. *Metabolomics in the Brain*, J.V. Sweedler, Pittsburgh Conference, Orlando, FL, March 2005.
114. *Hybrid Nanofluidic / Microfluidic Devices for Separations*, J.V. Sweedler, MicroScale Bioseparations (MSB) Symposium, New Orleans, LA, February 2005.
113. *Integrated Technologies for Cellular Neurometabolomics*, J.V. Sweedler and S.S. Rubakhin, Metabolomics Technology Development Conference, Washington, DC, January 2005.
112. *Making Measurements Smaller: Adapting Techniques to Follow Neurochemistry in Single Neurons*, Euroanalysis, Salamanca, Spain, September 2004.
111. *Coupling Capillary Separations and NMR Spectroscopy*, J.V. Sweedler, HPLC, Philadelphia, PA, June 2004.
110. *Understanding Neurochemistry Neuron by Neuron: Separation Tools for Single Cell Analysis*, J.V. Sweedler, Delaware Valley Chromatography Discussion Group, Philadelphia, PA, June 2004.
109. *Nanotechnology in Homeland Security Workshop*, CNST, J.V. Sweedler, Urbana, IL, May 2004.
108. *Separations for Single Cell Analysis*, J.V. Sweedler, The Triangle Chromatography Discussion Group, Raleigh, NC, April 2004.
107. *Multiple Microcoil NMR Coupled to Cyclic Separations: Improving the Sensitivity, Throughput and Flexibility of NMR Measurements*, J.V. Sweedler, D.A. Jayawickrama, L. Ciobanu, A.G. Webb, Experimental NMR Conference, Pacific Grove, CA, April 2004.
106. *Interfacing Biological Measurements to Microfluidic Systems Using Nanocapillary Array Interconnects*, J.V. Sweedler, Spring 2004 ACS Meeting, Anaheim, CA, March 2004.
105. *Making Measurements Smaller: Adapting Techniques to Characterize Peptide Vesicles*, J.V. Sweedler, Pittsburgh Conference, Chicago, IL, March 2004.
104. *Protocols for Subcellular Neuronal Profiling with Mass Spectrometry*, J.V. Sweedler, Pittsburgh Conference, Chicago, IL, March 2004.
103. *How Small Can We Go? Measuring the Neuropeptides in Single Cells to Single Organelles*, J.V. Sweedler, Keystone Meeting on Mass Spectrometry in Systems Biology, Santa Fe, NM, February 2004.
102. *Neuroproteomics (A Short Course)*, D.M. Desiderio, L. Fricker, J.V. Sweedler, Winter Conference on Brain Research, Breckenridge, CO, January 2004.

101. *Nanotechnology in the Neurosciences at the University of Illinois*, J.V. Sweedler, The National Nanotechnology Initiative, Arlington, VA, October 2003.
100. *Understanding Neurochemistry Neuron by Neuron: Spectroscopic Tools for Single Cell Analysis*, J.V. Sweedler, Plenary Address, Colloquium Spectroscopicum International XXXIII, Granada, Spain, September 2003.
99. *Coupling Capillary Separations and NMR Spectroscopy*, J.V. Sweedler, 100 Years of Chromatography, Ermelo, The Netherlands, June 2003.
98. *Single Cell Neurochemistry*, J.V. Sweedler, Analytical Gordon Conference, New Hampton, CT, June 2003.
97. *Elucidating Neuropeptide Processing in Individual Neurons and Neuronal Subsections with Mass Spectrometry*, J.V. Sweedler, S.S. Rubakhin, A. Hummon, Pittsburgh Conference, Orlando, FL, March 2003.
96. *Serotonin in the Invertebrate Brain: What Does It Do, and Where Does It Go?* J.V. Sweedler, X. Zhang, J.N. Stuart, N. Hatcher, R. Gillette, K. Potgieter, Pittsburgh Conference, Orlando, FL, March 2003.
95. *Understanding Cellular Communication: Measuring Neurotransmitters in Simple Neuronal Networks*, J.V. Sweedler, J.N. Stuart, B.R. Monroe, Y. Liu, S.S. Rubakhin, HPCE 2003 16th International Symposium on Microscale Separations and Analysis Including Mini Symposia on Genomics, Proteomics and Metabolomics, January 2003.
94. *Discovering New Neuropeptides with Single Cell MS*, J.V. Sweedler, NIDA Emerging Technologies, Rockville, MD, December 2002.
93. *Novel Serotonin Neurochemistry Elucidated Using Single-cell Capillary Electrophoresis*, J.V. Sweedler, 13th Annual Frederick Conference on Capillary Electrophoresis, Frederick, MD, October 2002.
92. *From Single Cells to Single Organelles: Direct MS of the Neuropeptides in a Neural Network*, J.V. Sweedler, FACSS, Providence, RI, October 2002.
91. *Pushing the Limits with Small Volume NMR*, J.V. Sweedler, SMASH, Breckinridge, CO, September 2002.
90. *Characterizing the Neuropeptides in Single Cells to Single Organelles with MS*, J.V. Sweedler, ACS National Meeting, Boston, MA, August 2002.
89. *New Approaches for Measuring the Chemical Microenvironment Around Neurons*, J.V. Sweedler, Analytica, Munich, Germany, April 2002.
88. *On-Line Nanoliter-Volume NMR Detection for Capillary Separations*, J.V. Sweedler, HPCE, Stockholm, Sweden, April 2002.
87. *Molecular Gates for Improved Sample Cleanup and Handling in Microfabricated Devices*, J.V. Sweedler, Ninth DOE Contractors Workshop, Platform presentation, Oakland, CA, February 2002.
86. *Interfacing Biology and Chemical Measurements*, J.V. Sweedler, Analytical Instrumentation for the New Millennium – Special NSF Workshop, Tucson, AZ, December 2001.
85. *How Small Can We Go? Assaying Single Organelles and Release from a Single Cell Using Mass Spectrometry*, J.V. Sweedler, S.S. Rubakhin, B.R. Monroe, L. Li, ASMS, Chicago, IL, May 2001.
84. *New Approaches to Measuring Neurotransmitters and Neuropeptides in Simpler Nervous Systems*, J.V. Sweedler, 23rd MidWest Neurobiology Meeting, West Lafayette, IN, March 2001.
83. *Analytical Chemistry from Genomics to Neuroscience*, J.V. Sweedler, Pittsburgh Conference, New Orleans, LA, March 2001.

82. *Assaying Single Cell to Single Organelles Using Mass Spectrometry*, J.V. Sweedler, ABRF, San Diego, CA, February 2001.
81. *Advances in NMR Detection for Capillary Separations*, J.V. Sweedler, HPCE, Boston, MA, January 2001.
80. *Assaying Single Cells to Single Organelles Using Mass Spectrometry*, J.V. Sweedler, PacificChem, Honolulu, HI, December 2000.
79. *Assaying Neurotransmitters In and Around Cells*, J.V. Sweedler, PacificChem, Honolulu, HI, December 2000.
78. *Measuring Neurotransmitters in Well-defined Neuronal Networks with Chemical, Spatial and Temporal Information*, J.V. Sweedler, Eastern Analytical Symposium, Atlantic City, NJ, November 2000.
77. *Pushing the Limits with Small Volume NMR*, J.V. Sweedler, Eastern Analytical Symposium, Atlantic City, NJ, November 2000.
76. *Smaller Volume NMR Probes for Small Samples*, J.V. Sweedler, Chicago Area NMR Discussion Group, Chicago, IL, October 2000.
75. *The Hyphenation of Capillary Separations to NMR Spectroscopy: Why Smaller is Better*, J.V. Sweedler, Chicago Area Chromatography Discussion Group, Chicago, IL, October 2000.
74. *From Prohormone to Final Peptides: Single Cell Peptide Processing in Aplysia californica as Revealed by Mass Spectrometry*, J.V. Sweedler, Gordon Conference on Hormonal and Neural Peptide Biosynthesis, New London, NH, July 2000.
73. *Assaying Signaling Molecules around Single Neurons*, J.V. Sweedler, The Cell Biology of Addiction, Workshop sponsored by the National Institute of Drug Abuse, Bethesda, MD, July 2000.
72. *Applications of NMR Spectroscopy in the Nanoliter Volume Regime*, J.V. Sweedler, The Gill Symposium, Bloomington, IN, April 2000.
71. *Assaying Single Cells to Single Organelles: Capillary Electrophoresis and Mass Spectrometry*, J.V. Sweedler, Pittsburgh Conference, New Orleans, LA, March 2000.
70. *Nanoliter Volume NMR*, J.V. Sweedler, Chicago Area NMR Discussion Group, Chicago, IL, November 1999.
69. *Measuring the Chemical Microenvironment Around Neurons*, J.V. Sweedler, Eastern Analytical Symposium, Somerset, November 1999.
68. *Peptides in the Stomatogastric Ganglion*, J.V. Sweedler, STG Meeting, Miami, FL, October 1999.
67. *Using Mass Spectrometry to Measure Peptides in Cells*, J.V. Sweedler, Analytical Gordon Conference, New Hampshire, CT, August 1999.
66. *Improving the Performance of Nanoliter Volume NMR Using Microcoils*, M. Lacey, A. Wolters, J. Tan, R. Subramanian, A. Webb, J.V. Sweedler, Royal Society International NMR Conference, Edinburgh, Scotland, June 1999.
65. *Measuring Neurotransmitters in and Around Neurons*, J.V. Sweedler, Measurement for the Next Millennium, Egmonds an zee, The Netherlands, April 1999.
64. *NMR Spectroscopy in the Nanoliter Niche*, J.V. Sweedler, Pittsburgh Conference, Orlando, FL, March 1999.
63. *Assaying Neurotransmitters with Microseparations Combined with Information Rich Detectors*, J.V. Sweedler, Pittsburgh Conference, Orlando, FL, March 1999.

62. *Improving Chemical, Spatial and Temporal Information of Analytical Techniques for the Neurosciences*, J.V. Sweedler, NSF Workshop on Analytical Instrumentation, Orlando, FL, March 1999.
61. *Information Rich Detectors for Capillary Electrophoresis*, J.V. Sweedler, HPCE, Palm Springs, CA, January 1999.
60. *Nanoliter Volume Chemical Assays*, J.V. Sweedler, National Center for Research Resources Integrated Genomic Technologies Workshop, Washington, DC, October 1998.
59. *Multidimensional Detection for Capillary Electrophoresis and Capillary Electrochromatography*, J.V. Sweedler, Parke Davis Pharmaceutical's Annual Analytical Conference, Summit, October 1998.
58. *Multidimensional Detection Modes for Capillary Separations*, J.V. Sweedler, ASMS Meeting on Mass Spectrometry/Chromatography, Asilomar, CA, October 1998.
57. *Nanoliter Volume Spectroscopy Using Ultraviolet to Radiofrequency Photons*, J.V. Sweedler, Analytica Conference, Munich, Germany, April 1998.
56. *Measuring Cellular Communication: New Technical Challenges*, J.V. Sweedler, Pittsburgh Conference, New Orleans, LA, March 1998.
55. *Multidimensional Detection in Capillary Separations*, J.V. Sweedler, HTC, Brugge, Belgium, February 1998.
54. *Smaller Can be Better—Nanoliter Volume NMR*, Eastern Analytical Society, Sommerset, CA, November 1997.
53. *Dynamic Channel Electrophoresis to Monitor Cellular Release*, J.V. Sweedler, Y.M. Liu, Frederick Conference on Capillary Electrophoresis, Frederick, MD, October 1997.
52. *The Distribution and Release of Peptides from Aplysia californica Neurons*, J.V. Sweedler, Packard Foundation Annual Meeting, Monterey, CA, September 1997.
51. *Smaller Can be Better-Nanoliter Volume NMR*, J.V. Sweedler, D.L. Olson, M.A. Lacey, A. Webb, ACS, National Meeting, Las Vegas, NV, August 1997.
50. *Multidimensional Detection in Capillary Electrophoresis*, J.V. Sweedler, HPCE, Kyoto, Japan, July 1997.
49. *Dynamic Channel Electrophoresis*, J.V. Sweedler, Y.M. Liu, Int. Conference on Capillary Chromatography and Electrophoresis, Wintergreen, NC, May 1997.
48. *On-Line NMR Detection for Capillary Separations*, J.V. Sweedler, D.L. Olson, M. Lacey, A.G. Webb, Int. Conference on Capillary Chromatography and Electrophoresis, Wintergreen, NC, May 1997.
47. *Neuropeptide Profiling in Individual Invertebrate Neurons*, J.V. Sweedler, R.W. Garden, L. Li, S.A. Shippy, R. Fuller, T.P. Moroz, L. Moroz, Pittsburgh Conference, Atlanta, GA, March 1997.
46. *Nanoliter Volume NMR*, J.V. Sweedler, D.L. Olson, M. Lacey, A.G. Webb, Pittsburgh Conference, Atlanta, GA, March 1997.
45. *Following Peptide Release from Neurons Using Time-Resolved Electrophoresis*, J.V. Sweedler, S. Shippy, Y. Li., HPCE, Anaheim, CA, January 1997.
44. *Assay of Peptides Using Multidimensional Detection in Capillary Electrophoresis*, J.V. Sweedler, Plenary Lecture at the International Symposium on Capillary Electrophoresis, York, UK, August 1996.
43. *Capillary Electrophoresis*, J.V. Sweedler, Analytical Land O'Lakes Conference, Devil's Head, WI, July 1996.
42. *Nanoliter Volume NMR*, J.V. Sweedler, Ohio Valley Chromatography Symposium, Miami, OH, June 1996.

41. *On-Line NMR Detection for Microseparations*, J.V. Sweedler, D. Olson, T. Peck, A. Webb, Plenary Lecture at the HPLC Symposium, San Francisco, CA, June 1996.
40. *Neuropeptide Distribution and Release from Aplysia californica Neurons*, J.V. Sweedler, Searle Scholars Meeting, Chicago, IL, May 1996.
39. *The Distribution of Peptides in Individual Neurons Using Capillary Electrophoresis*, J.V. Sweedler, 2nd Symposium on Analysis of Peptides, Stockholm, Sweden, January 1996.
38. *Assaying Peptides in Neurons Using Capillary Electrophoresis*, J.V. Sweedler, HPCE, Orlando, FL, January 1996.
37. *Multidimensional Detection in Capillary Electrophoresis*, J.V. Sweedler, Federation of Analytical Chemistry and Spectroscopy Societies, Cincinnati, OH, October 1995.
36. *Nanoliter Volume NMR*, D.L. Olson, T.L. Peck, A.G. Webb, J.V. Sweedler, R. Magin, ACS National Meeting, Chicago, IL, August 1995.
35. *Multichannel Fluorescence Detection in CE*, J.V. Sweedler, K. Oldenburg, Y. Liu, ACS National Meeting, Chicago, IL, August 1995.
34. *Probing the Neuropeptides within a Neuron Using CE*, J.V. Sweedler, S. Tracht, S. Shippy, J. Jankowski, International Symposium On Capillary Chromatography and Electrophoresis, Wintergreen, NC, May 1995.
33. *Multichannel Fluorescence Detection in CE*, J.V. Sweedler, A. Timperman, K. Oldenburg, R. Fuller, Y. Liu, International Symposium On Capillary Chromatography and Electrophoresis, Wintergreen, NC, May 1995.
32. *The Malmstadt Legacy: Toward the Future of Spectroscopy*, H.V. Malmstadt, M.B. Denton, C.G. Enke, G.M. Hieftje, G. Horlick, J.V. Sweedler, J.D. Winefordner, Pittsburgh Conference, New Orleans, LA, March 1995.
31. *Distribution of Neuropeptides in Cellular Processes of Identified Neurons*, J.V. Sweedler, J.A. Jankowski, S.E. Tracht, S.A. Shippy, Pittsburgh Conference, New Orleans, LA, March 1995.
30. *Multichannel Fluorescence Detection in CE: Application to Cellular Analysis*, J.V. Sweedler, A. Timperman, K. Oldenburg, R. Fuller, S. Shippy, L. Cruz, Pittsburgh Conference, New Orleans, LA, March 1995.
29. *Charge-Transfer Devices for Multichannel Detection in Capillary Electrophoresis*, J.V. Sweedler, A. Timperman, K. Oldenburg, Biomedical Optics, San Jose, CA, February 1995.
28. *Multidimensional Detection in Capillary Electrophoresis*, J.V. Sweedler, HPCE, Wurzburg, Germany, February 1995.
27. *Recent Advances in Multidimensional Detection in Capillary Electrophoresis*, J.V. Sweedler, Frederick Conference on Capillary Electrophoresis, Frederick, MD, October 1994.
26. *Trace-Level Derivatization of Peptides for Fluorescence Detection*, J.V. Sweedler, L. Cruz, S. Shippy, A. Timperman, X. Zhang, Federation of Analytical Chemistry and Spectroscopy Societies, St. Louis, MO, October 1994.
25. *NMR Detection in Capillary Electrophoresis Using RF-Microcoils*, J.V. Sweedler, N. Wu, T. Peck, A. Webb, R. Magin, Federation of Analytical Chemistry and Spectroscopy Societies, St. Louis, MO, October 1994.
24. *Analysis of Neuropeptides in Individual Neurons of Aplysia*, J.V. Sweedler, J. Jankowski, S. Tracht, S. Shippy, Federation of Analytical Chemistry and Spectroscopy Societies, St. Louis, MO, October 1994.

23. *Multidimensional Detection Modes in Capillary Electrophoresis*, J.V. Sweedler, ACS National Meeting, Washington, DC, August 1994.
22. *Wavelength-Resolved Fluorescence Detection in Capillary Electrophoresis*, J.V. Sweedler, 2nd Oxford Conference, New Hampton, IA, June 1994.
21. *Subcellular Neuropeptide Distribution and Release*, J.V. Sweedler, Searle Scholars Conference, Chicago, IL, May 1994.
20. *Analysis of Neuropeptides Using Multichannel Capillary Electrophoresis*, J.V. Sweedler, Pittsburgh Conference, Chicago, IL, March 1994.
19. *Postcolumn Radionuclide Detection in Capillary Electrophoresis*, J.V. Sweedler, HPCE, San Diego, CA, January 1994.
18. *Assay of Neuropeptides from Individual Neurons*, J.V. Sweedler, Packard Foundation Meeting, Monterey, CA, September 1993.
17. *Fluorescence and Radionuclide Detection Schemes for Trace-level Peptide Analysis in CE*, J.V. Sweedler, A. Timperman, S. Tracht, R. Fuller, L. Cruz, S. Shippy, X. Zhang, ACS National Meeting, Chicago, IL, August 1993.
16. *Analysis of Neuropeptide Release Using CE/LIF*, J.V. Sweedler, Biomedical Engineering Research Conference, Snowbird, UT, August 1993.
15. *Ultratrace Assay of Neurotransmitters Using Multichannel Detection in Capillary Electrophoresis*, J.V. Sweedler, A. Timperman, S. Tracht, R. Fuller, L. Cruz, S. Shippy, Summer Symposium on Analytical Chemistry, Boston, MA, June 1993.
14. *Novel Detection Schemes for Trace Analysis of Neuropeptides Using CE*, J.V. Sweedler, R. Fuller, S. Tracht, A. Timperman, V. Toma, R. Bolton, K. Khatib, 15th International Symposium on Capillary Chromatography, Riva del Garda, Italy, May 1993.
13. *Multichannel Detection in Capillary Electrophoresis*, J.V. Sweedler, A. Timperman, L. Cruz, S. Tracht, R. Fuller, Pittsburgh Conference, Atlanta, GA, March 1993.
12. *Detection Schemes in Multichannel Capillary Zone Electrophoresis*, J.V. Sweedler, International Conference on Scientific Optical Imaging, Georgetown (GCM), December 1992.
11. *Assay of Neuropeptides Using Capillary Electrophoresis with Multichannel Fluorescence Detection*, J.V. Sweedler, Summer Symposium on Analytical Chemistry, Logan, UT, June 1992.
10. *High Sensitivity Peptide Analysis*, J.V. Sweedler, Pittsburgh Conference, New Orleans, LA, March 1992.
9. *Capillary Electrophoresis of Neuropeptides from *Aplysia californica**, J.V. Sweedler, Federation of Analytical Chemistry and Spectroscopy Societies, Anaheim, CA, October 1991.
8. *New Developments in Multichannel Fluorescence Detection for Capillary Electrophoresis*, J.V. Sweedler, J.B. Shear, H.A. Fishman, R.N. Zare, R.H. Scheller, Federation of Analytical Chemistry and Spectroscopy Societies, Anaheim, CA, October 1991.
7. *Analysis of Neuropeptides Using Capillary Electrophoresis with Multichannel Fluorescence Detection*, J.V. Sweedler, International Workshop on Bioanalytical Chemistry, Lawrence, KS, May 1991.
6. *Capillary Electrophoresis*, J.V. Sweedler, International Conference on Scientific Optical Imaging, Georgetown (GCM), MD, December 1990.
5. *Applications of Capillary Electrophoresis to the Clinical Laboratory*, J.V. Sweedler, R.N. Zare, Symposium on Capillary Electrophoresis, Eindhoven, The Netherlands, September 1990.

4. *Evaluation of a Novel Crossed Dispersive Interferometric UV/Vis Spectrometer*, J.V. Sweedler, M. B. Denton, Federation of Analytical Chemistry and Spectroscopy Societies, Chicago, IL, October 1989.
3. *Spatial Interferometry in the Ultraviolet to Near Infrared*, J.V. Sweedler, M. B. Denton, ACS National Meeting, Miami, FL, September 1989.
2. *A Comparison of CCD and CID Detection for Analytical Spectroscopy*, J.V. Sweedler, R.S. Pomeroy, R.D. Jalkian, M B. Denton, Federation of Analytical Chemistry and Spectroscopy Societies, Boston, MA, October 1988.
1. *Molecular Spectroscopy Using Charge-Coupled Device Detectors*, J.V. Sweedler, R.D. Jalkian, P.M. Epperson, M.B. Denton, 9th Rocky Mountain Regional ACS meeting, Las Vegas, NV, March 1988.

**INVITED DEPARTMENTAL AND INDUSTRIAL SEMINARS
(INCLUDING NAMED, SPECIAL AND ENDOWED LECTURES)**

(NOTE: MOST DEPARTMENTAL AND OTHER SEMINARS THROUGHOUT THE UIUC CAMPUS ARE NOT INCLUDED.)

276. *High Throughput Characterization of Individual Cells*, J.V. Sweedler, Ralph Adams Seminar, University of Kansas, Lawrence, KS, November 2021.
275. *Measuring the Chemical Mosaic of the Brain*, J.V. Sweedler, Miniature Brain Machinery, UIUC, Urbana, IL, October 2021.
274. *Technologies for Probing Brain Chemistry a Cell at a Time*, J.V. Sweedler, ACS Science Talk (to several Indian universities), June 2021 (virtual).
273. *Measurement Approaches to Probe Unusual Neurochemistry*, J.V. Sweedler, Institute d'Alembert at ENS Paris-Saclay (France), June 2021 (virtual).
272. *The High Throughput Single Cell Chemical Characterization*, J.V. Sweedler, Departmental Seminar, Texas A&M University, College Station, TX, October 2020 (virtual).
271. *Single Cell and Small Volume D-Amino Acid Measurements: What Are They Doing and How Did They Get There?* J.V. Sweedler, University of Florida Distinguished Visiting Professor, Gainesville, FL, February 2020.
270. *The Single Cell Chemical Characterization of the Cells in the Brain*, University of Florida, Gainesville, FL, February 2020.
269. *From Single Cells to Subcellular Organelles: the Chemical Characterization of the Brain*, Systems Pharmacology and Translational Therapeutics Seminar, University of Pennsylvania, Philadelphia, PA, January 2020.
268. *From Corals to Humans, the Common Chemicals Connecting Our Brains*, 2020 Walter E. Harris Lecture, University of Alberta, Alberta, Canada, January 2020.
267. *Single Cell and Small Volume D-Amino Acid Measurements: What Are They Doing and How Did They Get There?* J.V. Sweedler, 2020 Walter E. Harris Lectures, University of Alberta, Alberta, Canada, January 2020.
266. *The Single Cell Chemical Characterization of the Cells in the Brain*, 2020 Walter E. Harris Lectures, University of Alberta, Alberta, Canada, January 2020.
265. *Using the Solarix and timsTOF Pro to Follow the Chemistry of the Brain*, J.V. Sweedler, Invited Bruker Seminar, Bremen, Germany, May 2019.
264. *From New Neurochemical Measurements to New Insights into the Brain*, J.V. Sweedler, Stony Brook University, Stony Brook, NY, March 2019.
263. *Publishing and Science Communication*, J.V. Sweedler, Universidad ICESI, Cali, Columbia, March 2019.

262. *Write it, Speak it: Effective Communication. How to Talk and Write about your Research*, J.V. Sweedler, Universidad Columbia de National, Bogotá, Columbia, February 2019.
261. *Publishing and Science Communication*, J.V. Sweedler, Universidad de Los Andes, Bogotá, Columbia, February 2019.
260. *Getting Started: 10 Tips for Scholarly Publishing*, J.V. Sweedler, University of Costa Rica, San Jose, Costa Rica, February 2019.
259. *The Single Cell Chemical Characterization of the Cells in the Brain*, J.V. Sweedler, University of Arizona, Department Colloquia, Tucson, AZ, February 2019.
258. *The Single Cell Chemical Characterization of the Cells in the Brain*, J.V. Sweedler, Newomics, Berkeley, CA, February 2019.
257. *Measuring the Neurochemistry of the Brain*, J.V. Sweedler, Chapman University School of Pharmacy, (student selected), Irvine, CA, January 2019.
256. *The Single Cell Chemical Characterization of the Cells in the Brain*, J.V. Sweedler, Institutional and Glycosciences Lecture Series, Academia Sinica, Taipei, Taiwan, November 2018.
255. *The Single Cell Chemical Characterization of the Cells in the Brain*, J.V. Sweedler, Purdue University, the 2018 Phi Lambda Upsilon Seminar (student selected), West Lafayette, IN, October 2018.
254. *Probing the Brain a Cell at a Time*, Departmental Seminar, Southern Illinois University, Carbondale, IL, October 2018.
253. *Mass Spectrometry Imaging*, J.V. Sweedler, Southern Illinois University Edwardsville, Edwardsville, IL, October 2018.
252. *Probing the Brain a Cell at a Time*, Departmental Seminar, Southern Illinois University Edwardsville, Edwardsville IL, October 2018.
251. *Probing the Brain a Cell at a Time: From New Measurement Tools to New Chemical Insights*, J.V. Sweedler, South Central China University, Changsha, China, May 2018.
250. *Approaches for Characterizing Individual Cells and Brain Regions*, J.V. Sweedler, Eli Lilly, Indianapolis IN, April 2018.
249. *Correlated Molecular Imaging: From Mass Spectrometry Imaging to Raman Imaging for Increased Chemical Information*, J.V. Sweedler, Departmental Seminar, Florida State University, Tallahassee, FL, March 2018.
248. *New Measurement Science Tools for the Cell by Cell Characterization of the Brain*, J.V. Sweedler, The Foster Lecture (graduate student selected), State University of New York Buffalo, Buffalo, NY, March 2018.
247. *Understanding the Brain a Cell at a Time: From New Measurement Tools to New Chemical Insights*, J.V. Sweedler, Departmental Seminar, University of Texas at Arlington, Arlington, TX, February 2018.
246. *D-Amino Acids in our Brain: What Are They Doing and How Did They Get There?* J.V. Sweedler, Fourth Purnendu K. "Sandy" Dasgupta Lecture, Texas Tech, Lubbock, TX, February 2018.
245. *Understanding the Brain a Cell at a Time: From New Measurement Tools to New Chemical Insights*, J.V. Sweedler, Fourth Purnendu K. "Sandy" Dasgupta Lecture, Texas Tech, Lubbock, TX, February 2018.
244. *The Chemical Characterization of the Brain: From New Tools to New Insights*, J.V. Sweedler, Jiangnan University, Wuxi, China, November 2017.

243. *The Chemical Characterization of the Brain: From New Tools to New Insights*, J.V. Sweedler, China Pharmaceutical University, Nanjing, China, November 2017.
242. *Correlated Molecular Imaging: From Mass Spectrometry Imaging to Raman Imaging for Increased Chemical Information*, J.V. Sweedler, China Agricultural University, Beijing, China, November 2017.
241. *The Chemical Characterization of the Brain: From New Tools to New Insights*, J.V. Sweedler, McGovern Institute for Brain Research, Peking University, Beijing, China, November 2017.
240. *New Technologies for Measuring Brain Chemistry*, J.V. Sweedler, Vasser Woolley Distinguished Lecture at Georgia Tech, Atlanta, GA, October 2017.
239. *From Corals to Humans: The Common Chemicals Connecting our Brains*, J.V. Sweedler, the 27th Center for Advanced Study Annual Lecture, UIUC, October 2017.
238. *microMS: A New Approach for Single Cell Measurements*, J.V. Sweedler, Bruker, Bremen, Germany, September 2017.
237. *The Cell by Cell Characterization of the Brain*, J.V. Sweedler, Department of Neurochemistry, Stockholm University, Stockholm, Sweden, August 2017.
236. *New Measurement Tools to Study Cell to Cell Communication in the Brain*, J.V. Sweedler, SciLab, Uppsala University, Sweden August 2017.
235. *Approaches for Small Scale Mass Spectrometry*, J.V. Sweedler, "Feed Your Brain" Seminar, Medtronic, Rice Creek, MN, April 2017.
234. *D-Amino Acids in our Brain: What Are They Doing and How Did They Get There?* J.V. Sweedler, Departmental Seminar Senior Comp Speaker, Carleton College, Northfield, MN, April 2017.
233. *From Corals to Humans, the Common Chemicals Connecting our Brains*, J.V. Sweedler, Abbott Lectureship, University of North Dakota, Grand Forks, ND, April 2017.
232. *New Tools for Single Cell Chemical Characterization of the Brain*, J.V. Sweedler, Abbott Lectureship, University of North Dakota, Grand Forks, ND, April 2017.
231. *Life on the "D" Side: D-Amino Acid Signaling in the Brain*, J.V. Sweedler, SCS Lectureship, ETH, Zurich Switzerland, March 2017.
230. *The Chemical Characterization of the Brain: From New Measurement Tools to New Neurochemical Insights*, J.V. Sweedler, SCS Lectureship, University of Basel, Basel, Switzerland, March 2017.
229. *Life on the "D" Side: D-Amino Acid Signaling in the Brain*, J.V. Sweedler, SCS Lectureship, University of Bern, Bern, Switzerland, March 2017.
228. *The Chemical Characterization of the Brain: From New Measurement Tools to New Neurochemical Insights*, J.V. Sweedler, SCS Lectureship, EPFL Lausanne, Lausanne, Switzerland, March 2017.
227. *Life on the "D" Side: D-Amino Acid Signaling in the Brain*, J.V. Sweedler, SCS Lectureship, University of Geneva, Geneva, Switzerland, March 2017.
226. *The Chemical Characterization of the Brain: From New MS-Based Measurement Tools to New Insights*, J.V. Sweedler, NC State, Raleigh, NC, February 2017.
225. *Analytical Approaches to Characterize the Cells in the Brain*, J.V. Sweedler, University of South Carolina, Columbia, February 2017.
224. *Probing the Gut Peptidome at the Single Cell Level*, J.V. Sweedler, Kallyope Inc., New York, NY, December 2016.

223. *Discovering Novel Neurochemistry Using Mass Spectrometry Imaging and Single Cell Mass Spectrometry Profiling of the Brain*, J.V. Sweedler, Bruker Workshop on MS, University of Illinois at Chicago, Chicago, IL, July 2016.
222. *Single Cell Mass Spectrometry*, J.V. Sweedler, Newomics Inc., Emeryville, CA, June 2016.
221. *D-Amino Acids in the Brain*, J.V. Sweedler, Neuroscience Seminar, Aix-Marseille University, Marseille, France, June 2016.
220. *New Analytical Tools for the Cell by Cell Chemical Characterization of the Brain*, J.V. Sweedler, Lu Jiaxi Lectureship, College of Chemistry, Xiamen University, PR China, June 2016.
219. *New Technologies to Characterize Brain Chemistry*, J.V. Sweedler, Modern Chemistry Lecture Series, College of Chemistry and Molecular Sciences, Wuhan University, Wuhan, PR China, May 2016.
218. *High-throughput Single Cell Mass Spectrometry Profiling*, J.V. Sweedler, George Washington University Department of Chemistry Seminar, April 2016.
217. *Mass Spectrometry Imaging and Correlated Molecular Imaging for Increased Chemical Information from Complex Samples*, J.V. Sweedler, 2016 Lind Lecture, Oak Ridge National Laboratory, Knoxville, TN, February 2016.
216. *New Analytical Tools for the Cell by Cell Chemical Characterization of the Brain*, J.V. Sweedler, The Lind Lecture Award from the Eastern Tennessee ACS, University of Tennessee, Knoxville, TN, February 2016.
215. *Mass Spectrometry for the Cell by Cell Chemical Characterization of the Brain*, J.V. Sweedler, Department Seminar, Montreal, Quebec, January 2016.
214. *Mass Spectrometry in the Brain*, Keynote Lecture, J.V. Sweedler, Advanced Diagnostics & Therapeutics Annual Symposium, Notre Dame, IN, October 2015.
213. *Mass Spectrometry-Based Approaches to Characterize the Cells in the Brain*, J.V. Sweedler, Integrative Cell Biology Graduate Program, Loyola Maywood-Health Science Campus, Chicago, IL, October 2015.
212. *Neurometabolomics: Characterizing the Cell to Cell Signaling Molecules in the Brain*, J.V. Sweedler, Frontiers Lecture Series, Texas A&M, College Station, TX, October 2015.
211. *Preparing a Scientific Manuscript, the Peer Review Process and Writing a Review: Views from an Editor*, J.V. Sweedler, Frontiers Lecture Series, Texas A&M, College Station, TX, October 2015.
210. *Peptidomics: Measuring the Hormones and Neuropeptides that Change Behaviors*, J.V. Sweedler, Frontiers Lecture Series, Texas A&M, College Station, TX, October 2015.
209. *High Throughput Approaches to Characterize Individual Cells via Mass Spectrometry*, J.V. Sweedler, Newomics, Emeryville, CA, July 2015.
208. *Using Mass Spectrometry to Measure Cell to Cell Signaling in the Brain*, J.V. Sweedler, Laboratório ThoMSon, Universidade de Campinas (UNICAMP), Campinas, Brazil, May 2015.
207. *Peer Review: Why, How To, and What Not to Do*, J.V. Sweedler, ACS On-Campus series, Universidade de Campinas (UNICAMP), Campinas, Brazil, May 2015.
206. *Peer Review: Why, How To, and What Not to Do*, J.V. Sweedler, ACS On-Campus series, Universidade Federal de Santa Catarina (UFSC), Florianópolis, Brazil, May 2015.
205. *Peer Review: Why, How To, and What Not to Do*, J.V. Sweedler, ACS On-Campus series, Universidade Federal do Rio Grande do Sul (UFRGS), Porto Alegre Brazil, May 2015.
204. *Mass Spectrometry Approaches to Characterize Novel Brain Chemistry*, J.V. Sweedler, 6th Annual Johannes F. Coetzee Memorial Lecture, University of Pittsburgh, Pittsburgh, PA, April 2015.

203. *The Cell by Cell Chemical Characterization of the Brain*, J.V. Sweedler, University of Washington, Seattle, WA, April 2015.
202. *Measuring D-Amino Acid Signaling in the Brain*, J.V. Sweedler, Max T. Rogers Lectureship, East Lansing, MI, April 2015.
201. *The Cell by Cell Chemical Characterization of the Brain*, J.V. Sweedler, Max T. Rogers Lectureship, East Lansing, MI, April 2015.
200. *The Cell by Cell Chemical Characterization of the Brain: From New MS-Based Measurement Tools to New Insights*, J.V. Sweedler, Bruker Daltonics, Billerica, MA, February 2015.
199. *Getting Started Writing a Manuscript and What is Peer Review?* J.V. Sweedler, Indiana University, an ACS On-Campus event, Bloomington, IN, October 2014.
198. *Developing New Tools to Study the Brain*, J.V. Sweedler, University of Vermont, Burlington, VT, October 2014.
197. *Developing New Analytical Tools to Study the Chemistry of the Brain*, J.V. Sweedler, University of Richmond, Richmond, VA, October 2014.
196. *From Corals to Humans, the Common Chemicals Connecting our Brains*, J.V. Sweedler, Knight Lecture, University of Akron, OH, September 2014.
195. *New Analytical Tools for the Cell by Cell Chemical Characterization of the Brain*, J.V. Sweedler, Knight Lecture, University of Akron, OH, September 2014.
194. *State-of-the-Art and Near-Future-State of Analytical & Physical Chemistry*, J.V. Sweedler, Merck, Rahway, NJ, September 2014.
193. *The Cell by Cell Chemical Characterization of the Brain: From New Measurement To New Insights*, J.V. Sweedler, Merck, Summit, NJ, September 2014.
192. *New Tools to Understand the Chemistry of the Brain*, J.V. Sweedler, 2014 Priestley Lecture, Penn State, University Park, PA, April 2014.
191. *Measuring the Chemistry of Thought*, J.V. Sweedler, 2014 Laird Lecture, University of British Columbia, Vancouver, Canada, February 2014.
190. *The Cell by Cell Chemical Characterization of the Brain: From New Tools to New Insights*, J.V. Sweedler, Eli Lilly, Indianapolis, IN, January 2014.
189. *Unraveling Cell to Cell Signaling in the Brain*, J.V. Sweedler, Washington University, Saint Louis, MO, November 2013.
188. *Increasing the Chemical Information Obtained from Mass Spectrometry Imaging*, J.V. Sweedler, MS Discussion Group, Saint Louis, MO, November 2013.
187. *Mass Spectrometry for Measuring Ultrasmall Volume Samples*, J.V. Sweedler, Bruker User's Group Meeting, Billerica, MA, October 2013.
186. *From Analytical Chemistry to Neuroscience: Interdisciplinary Science*, J.V. Sweedler, Peking University, Beijing, China, October 2013.
185. *Tools to Measure D-Amino Acid Signaling in the Brain*, J.V. Sweedler, Xuetang Lecture to Undergraduates, Tsinghua University, Beijing University, China, October 2013.
184. *Unraveling Cell to Cell Signaling in the Brain*, J.V. Sweedler, Chemistry Department Colloquium, Tsinghua University, Beijing University, China, October 2013.
183. *What is Peer Review?* J.V. Sweedler, ACS on Campus, Zhejiang University, Hangzhou, China, October 2013

182. *Using Mass Spectrometry to Characterize Brain Neurochemistry: Assaying Small Brain Regions Down to Individual Cells*, J.V. Sweedler, Nanjing University, China, October 2013
181. *What is Peer Review?* J.V. Sweedler, ACS on Campus, J.V. Sweedler, Nanjing University, China, October 2013
180. *Unraveling Cell to Cell Signaling in the Brain*, J.V. Sweedler, Departmental Colloquium, Colorado State University, Fort Collins, CO, October 2013.
179. *How Have Advances in Measurement Tools Driven Neuroscience Over the Past Decades?* J.V. Sweedler, 2013 Barnet Lecture, Northeastern University, Boston, MA, April 2013.
178. *Metabolomic Measurements of the Brain*, J.V. Sweedler, McMaster University, Hamilton, ON, Canada, April 2013.
177. *Metabolomic Measurements of the Brain*, J.V. Sweedler, Western University, New London, ON, Canada, April 2013.
176. *The Cell by Cell Chemical Characterization of the Brain: From New Tools to New Insights*, J.V. Sweedler, Simon Fraser University, Vancouver, BC, Canada, March 2013.
175. *The Cell by Cell Chemical Characterization of the Brain: From New Tools to New Insights*, J.V. Sweedler, University of Victoria, Victoria, BC, Canada, March 2013.
174. *Understanding Cell to Cell Signaling in the Brain*, J.V. Sweedler, Department of Pharmacology, University of Texas Medical Branch, Galveston, TX, February 2013.
173. *Mass Spectrometry-Based Metabolomics and Chemical Imaging for Probing the Cellular Heterogeneity in the Brain*, J.V. Sweedler, Frederic LeRoy Conover Lecture in Chemistry, Department of Chemistry, Vanderbilt University, Nashville, TN, February 2013.
172. *Metabolomics to Probe the Cellular Heterogeneity of the Brain*, J.V. Sweedler, A.H. Gordon Lecture #3, University of Toronto, Canada, January 2013.
171. *What Are D-Amino Acids Doing in my Brain?* J.V. Sweedler, A.H. Gordon Lecture #2, University of Toronto, Toronto, Canada, January 2013.
170. *Neuropeptides: From Discovery to Function, from Jellies to Mammals*, J.V. Sweedler, A.H. Gordon Lecture #1, University of Toronto, Canada, January 2013.
169. *The Cell by Cell Chemical Characterizations of the Brain: From New Discovery Tools to New Functional Insights*, J.V. Sweedler, Frontiers Lecture, Lubrizol, Cincinnati, OH, January 2013.
168. *Analytical Methods to Characterize Cell to Cell Signaling*, J.V. Sweedler, Department of Chemistry, University of Alberta, Edmonton, Canada, January 2013.
167. *The Cell by Cell Chemical Characterizations of the Brain: From New Discovery Tools to New Functional Insights*, J.V. Sweedler, Frontiers Lecture, Case Western Reserve University, Cincinnati, OH, January 2013.
166. *Mass Spectrometry-Based Metabolomics and Chemical Imaging for Single Cell Measurements in the Brain*, J.V. Sweedler, Washington–Baltimore Mass Spectrometry Discussion Group, Columbia, MD, October 2012.
165. *Metabolomics and Chemical Imaging for Probing the Cellular Heterogeneity in the Brain*, J.V. Sweedler, Indian Association for the Cultivation of Science, Kolkata, India, October 2012.
164. *Metabolomics and Chemical Imaging for Probing the Cellular Heterogeneity in the Brain*, J.V. Sweedler, Indian Institute of Technology Kanpur, Kanpur, India, October 2012.

163. *Metabolomics and Chemical Imaging for Probing the Cellular Heterogeneity in the Brain*, J.V. Sweedler, Indian Institute of Technology Bombay, Mumbai, India, October 2012.
162. *From a New Analytical Capability to a New Understanding of our Brain: D-Amino Acids*, J.V. Sweedler, Peking University, Beijing, China, September 2012.
161. *Using Analytical Chemistry to Understand How the Brain Works*, J.V. Sweedler, University of Chiang Mai, Chiang Mai, Thailand, July 2012.
160. *New Approaches to Measuring Neuropeptides in the Brain*, J.V. Sweedler, University of Bristol, Bristol, UK, July 2012.
159. *Metabolomics of the Brain*, J.V. Sweedler, Bruker User's Group Meeting, ASMS, Vancouver, Canada, May 2012.
158. *D-Amino Acids and D-Amino Acid Containing Peptides in our Brain*, J.V. Sweedler, University of Hunan Special Lecture, Changsha, China, April 2012.
157. *Metabolomics and Chemical Imaging for Probing the Cellular Heterogeneity in the Brain*, J.V. Sweedler, Student-selected seminar at the University of Minnesota, March 2012.
156. *Combining Analytical Chemistry and Neuroscience to Understand the Brain*, J.V. Sweedler, Indiana State University, Terre Haute, IN, February 2012.
155. *Measuring the Brain's Chemistry a Cell at a Time*, J.V. Sweedler, Perelman School of Medicine Department of Pharmacology, University of Pennsylvania, Philadelphia, PA, January 2012.
154. *Metabolomics and Chemical Imaging for Probing Cellular Heterogeneity*, J.V. Sweedler, Life Sciences Division of Lawrence Berkeley National Laboratory, Berkeley, CA, December 2011.
153. *Instrumentation and Approaches for Neurometabolomics*, J.V. Sweedler, Bruker "Open Day" Workshop on Metabolomics, Fremont, CA, September 2011.
152. *Developing a New Technique and Using it to Advance Biology*, J.V. Sweedler, Frontiers in Chemistry & Biology, Hunan University, Changsha, China, August 2011.
151. *Emerging Analytical Approaches for Unraveling Cell to Cell Heterogeneity in Samples Ranging from Individual Cells to Tissues*, J.V. Sweedler, Dow Agrosiences, Indianapolis, IN, April 2011.
150. *Separations and Mass Spectrometry for Nanoscience*, J.V. Sweedler, Kyoto University, Japan, December 2010.
149. *Understanding Your Brain Chemistry*, J.V. Sweedler, Andrews University, Berrien Springs, MI, October 2010.
148. *What Are D-Amino Acids Doing in our Brain?* J.V. Sweedler, Séminaire INB, The Institute of Neurosciences of Bordeaux, France, May 2010.
147. *Our Brain's Chemistry a Cell at a Time*, J.V. Sweedler, GlaxoSmithKline Lecture, Chapel Hill, NC, March 2010.
146. *Neurochemistry in Disease and Health*, J.V. Sweedler, GlaxoSmithKline, Raleigh NC, March 2010.
145. *Unraveling Cell-to-Cell Signaling in the Brain with New Measurement Approaches*, J.V. Sweedler, Phillip J. Elving Lecture, University of Michigan Chemistry Lectures, Ann Arbor, MI, February 2010.
144. *Unraveling the Peptides in the Brain with New Informatic Tools and Mass Spectrometry-Based Measurements*, J.V. Sweedler, Frontiers in Bioinformatics and Systems Biology Colloquium, UC San Diego, September 2009.
143. *Measuring the Brain a Cell at a Time*, J.V. Sweedler, Alpha Chi Sigma, Zeta Chapter, University of Illinois, Krug Lecture, May 2009.

142. *Understanding Novel Neurochemical Pathways Using Mass Spectrometry*, J.V. Sweedler, Bruker Daltonics User Group's Meeting, Philadelphia, May 2009.
141. *Unraveling the Secrets of the Brain with New Measurement Techniques*, J.V. Sweedler, Queen's University, Kingston, ON, Canada, April 2009.
140. *From Single Neurons to Brain Regions: Using Mass Spectrometry to Probe Cell to Cell Signaling*, J.V. Sweedler, University of Illinois, College of Veterinary Medicine, Translational Biomedical Research Seminar Series, March 2009.
139. *Discovering Novel Cell to Cell Signaling Pathways in the Brain*, J.V. Sweedler, Wake Forest University, Department of Biology and Chemistry Joint Seminar, January 2009.
138. *Mass Spectrometry in the Brain*, J.V. Sweedler, Hamamatsu Medical School, Hamamatsu, Japan, December 2008.
137. *Measuring the Neuropeptides: Creating Techniques with Chemical, Spatial and Temporal Resolution*, J.V. Sweedler, National Tsing Hua University, Hsinchu, Taiwan, October 2008.
136. *Measuring the Brain's Chemistry a Cell at a Time*, J.V. Sweedler, Yonsei University, Seoul, South Korea, October 2008.
135. *Neurometabolomics: a Cell at a Time*, J.V. Sweedler, Korean Institute of Science and Technology, Seoul, South Korea, October 2008.
134. *Measuring the Brain's Chemistry a Cell at a Time*, J.V. Sweedler, Sogang University, Seoul South Korea, October 2008.
133. *Following Chemical Communication in the Brain*, J.V. Sweedler, Department Colloquium, Louisiana State University, Baton Rouge, LA, October 2008.
132. *Developing Methods for Probing Brain Chemistry*, J.V. Sweedler, Frontiers in Science Series, Wayne State University, Detroit, September 2008.
131. *How Neurons Communicate: Uncovering Novel Neurotransmitters*, Mt. Sinai Medical School, Translational Neuroscience Seminar Series, New York, June 2008.
130. *From Single Neurons to Brain Regions: Using Mass Spectrometry to Probe Cell to Cell Signaling*, J.V. Sweedler, Molecular Pharmacology Seminar Series, Albert Einstein College of Medicine, New York, June 2008.
129. *Unraveling the Secrets of the Brain, Cell by Cell, with New Analytical Techniques*, J.V. Sweedler, University of Hull, Hull, UK, April 2008.
128. *Neuropeptidomics: Profiling, Imaging and Predicting Neuropeptides in the Brain*, J.V. Sweedler, University of Edinburgh, Edinburgh, UK, April 2008.
127. *Neuropeptidomics: Profiling, Imaging and Predicting Neuropeptides in the Brain*, J.V. Sweedler, University of Plymouth, Plymouth, UK, March 2008.
126. *Unraveling the Secrets of the Brain, Cell by Cell, with New Analytical Techniques*, J.V. Sweedler, University of Nottingham Trent, Nottingham, UK, March 2008.
125. *Neuropeptidomics: Profiling, Imaging and Predicting Neuropeptides in the Brain*, J.V. Sweedler, University of Manchester, Manchester, UK, March 2008.
124. *From Single Cells to Imaging Tissues: Characterizing the Peptides and Proteins in our Brain Using Mass Spectrometry*, J.V. Sweedler, Bremen, Germany, March 2008.
123. *Making Measurements Smaller: Understanding Cell to Cell Signaling*, J.V. Sweedler, University of California at Riverside, Riverside, CA, December 2007.

122. *Cell to Cell Signaling in the Brain*, J.V. Sweedler, University of Cincinnati, Department Colloquium, Cincinnati, OH, October 2007.
121. *Measuring the Brain's Chemistry a Cell at a Time*, J.V. Sweedler, Society of Analytical Chemists Fall Dinner meeting, Pittsburgh, PA, October 2007.
120. *From Single Cells to Brain Slices, Measuring the Brain with Mass Spectrometry*, J.V. Sweedler, Eli Lilly, Indianapolis, IN, September 2007.
119. *Techniques to Measure Novel Neurochemistry*, J.V. Sweedler, Department Seminar, University of Missouri at Rolla, Rolla MO, September 2007.
118. *From Single Neurons to Brain Regions: Characterizing Cell to Cell Signaling in the Brain*, J.V. Sweedler, University of Alberta, Canada, April 2007.
117. *Methods to Measure Neurotransmitters from Small Samples*, J.V. Sweedler, Northeastern University, Boston, MA, April 2007.
115. *Neuropeptides in the Brain: Methods for Characterizing Peptides*, J.V. Sweedler, College of Pharmacology, Uppsala University, Uppsala, Sweden, March 2007.
114. *Combining Analytical Chemistry and Neuroscience to Understand the Brain's Chemistry*, J.V. Sweedler, Saint Louis University, St. Louis, MO, February 2007.
113. *Sample Preparation Strategies for Analyzing Neuronal Tissues with MALDI TOF MS*, J.V. Sweedler, Bruker Daltonics, Bremen, Germany, December 2006.
112. *Understanding Neurochemistry Neuron by Neuron: New Measurement Technologies for Neuroscience Research*, J.V. Sweedler, Department of Chemistry of the University of Cincinnati, The 2006 Ralph and Helen Oesper Symposium honoring Richard N. Zare of Stanford University, Cincinnati, OH, October 2006.
111. *Examining the Brain's Chemistry at the Single Cell Level*, J.V. Sweedler, Department of Chemistry, Indiana University, Bloomington, IN, October 2006.
110. *Technologies for Probing the Brain's Chemistry Cell by Cell*, J.V. Sweedler, Amgen, Analytical Sciences Colloquium, Thousand Oaks, CA, September 2006.
109. *Profiling, Imaging and Predicting Neuropeptides in the Brain*, J.V. Sweedler, Amylin Pharmaceuticals, San Diego, CA, April 2006.
108. *Techniques to Measure Cell to Cell Communication in Networks of Neurons*, J.V. Sweedler, Distinguished Speakers in Bioengineering 2005–2006, Institute of Biomaterials and Biomedical Engineering, University of Toronto, Canada, April 2006.
107. *Techniques for Probing the Brain's Chemistry One Cell at a Time*, J.V. Sweedler, Department of Chemistry, University of Virginia, Charlottesville, VA, March 2006.
106. *Techniques for Studying the Brain's Chemistry Neuron by Neuron*, J.V. Sweedler, Hopkins Marine Station, Stanford University, Pacific Grove, CA, March 2006.
105. *Techniques for Studying the Brain's Chemistry Neuron by Neuron*, J.V. Sweedler, Department of Molecular & Cellular Neurobiology, Vrije Universiteit Amsterdam, The Netherlands, January 2006.
104. *Profiling the Brain with Imaging Mass Spectrometry*, J.V. Sweedler, Colloquium at the Institute for Atomic and Molecular Physics (AMOLF), Amsterdam, The Netherlands, January 2006.
103. *Probing the Brain's Chemistry at Cellular Resolution*, J.V. Sweedler, Kasetsart University, Department of Chemistry, Bangkok, Thailand, January 2006.

102. *Measuring Neurochemistry a Cell at a Time*, J.V. Sweedler, Brandeis University, Waltham, MA, December 2005.
101. *Understanding Neurochemistry Neuron by Neuron: Mass spectrometry and Separations for Neuroscience Research*, J.V. Sweedler, Purdue University, Department of Chemistry, West Lafayette, IN, November 2005.
100. *Measuring Chemical Communication in the Brain: Technologies for Neuropeptide Analysis*, J.V. Sweedler, Duquesne University, Department of Chemistry & Biochemistry, Pittsburgh, PA, October 2005.
99. *Mass Spectrometry in the Brain: Techniques for Uncovering New Neuropeptides*, J.V. Sweedler, Department of Physiology, Katholieke Universiteit Leuven, Leuven, Belgium, September 2005.
98. *Mass Spectrometry Imaging Approaches*, J.V. Sweedler, Applied Biosystems, Framingham, MA, April 2005.
97. *Neurometabolomics*, J.V. Sweedler, Washington University in St. Louis, St. Louis, MO, April 2005.
96. *Mass Spectrometry in the Brain: Technologies for Neuropeptide Analysis*, J.V. Sweedler, St. Louis Mass Spectrometry Discussion Group, St. Louis, MO, April 2005.
95. *Measuring Neurochemistry a Cell at a Time*, J.V. Sweedler, McElvain Seminar (student selected), University of Wisconsin, Madison, WI, February 2005.
94. *Technologies for Neurochemistry Measurements*, J.V. Sweedler, (student selected speaker), Truman State University, Kirksville, MO, December 2004.
93. *Measuring Cell to Cell Signaling in the Brain: From Microfluidic Sampling Capillary Separations and Mass Spectrometry*, J.V. Sweedler, Nanotechnology Seminars, University of Washington, Seattle, WA, November 2004.
92. *Understanding the Brain Neuron by Neuron: New Analytical Tools for Single Cell Measurements*, J.V. Sweedler, Departmental Seminar, University of West Virginia, Morgantown, WV, October 2004.
91. *Probing Neurochemistry Neuron by Neuron Using Microfabrication, Capillary Separations and Mass Spectrometry*, ISAS – The Institute for Analytical Sciences, J.V. Sweedler, Dortmund, Germany, September 2004.
90. *Making Measurements Smaller: Analytical Methods for Measuring the Chemical Environment Around Single Cells*, J.V. Sweedler, Indiana State University, Terre Haute, IN, September 2004.
89. *How Small Can We Go? Scaling Measurement Technologies for Single Cell Analysis*, J.V. Sweedler, Eli Lilly Analytical Chemistry Seminar Program, September 2004.
88. *Understanding Neurochemistry Neuron by Neuron: Techniques for Single Cell Analysis*, J.V. Sweedler, University of Texas at Austin IGERT Program, Austin, TX, September 2004.
87. *Single Cell Neurochemistry: How Complicated Is It?* J.V. Sweedler, The National Science Foundation: Workshop on the Chemistry of Thought, Arlington, VA, June 2004.
86. *Microcoil NMR*, J.V. Sweedler, University of California at Berkeley, Berkeley, CA, April 2004.
85. *Neuropeptides in the Brain: Techniques for Single Cell Peptide Measurements*, J.V. Sweedler, Boston University, Boston, MA, April 2004.
84. *New Techniques and New Challenges for Understanding Serotonin Neurochemistry*, Penn State University, University Park, PA, April 2004.
83. *Techniques to Study the Single Cell Neurochemistry*, J.V. Sweedler, University of Illinois at Chicago, Emerging Technologies Series, Chicago, IL, December 2003.

82. *Understanding Neurochemistry Neuron by Neuron: New Techniques to Study the Nanoenvironment in and Around Single Cells*, J.V. Sweedler, University of Texas Southwestern Medical Branch, Emerging Technologies Series, Dallas, TX, September 2003.
81. *Measurement Strategies for the Nervous System*, J.V. Sweedler, Southern Illinois University, Carbondale, IL, August 2003.
80. *Understanding Neurochemistry Neuron by Neuron: New Techniques to Study the Nanoenvironment In and Around Single Cells*, J.V. Sweedler, National Institute of Standards and Technology, Gaithersburg, MD, April 2003.
79. *Understanding Neurochemistry Neuron by Neuron: New Techniques to Study the Nanoenvironment In and Around Single Cells*, J.V. Sweedler, East Carolina University, Greenville, NC, March 2003.
78. *New Approaches to Measuring Neurotransmission in Simpler Nervous Systems*, J.V. Sweedler, Anderson Cancer Center, Houston, TX, December 2002.
77. *Neurochemistry in the Simpler CNS*, J.V. Sweedler, University of Texas Medical Branch, Galveston, TX, December 2002.
76. *Hyphenating Capillary Separations to NMR*, J.V. Sweedler, SACP, Pittsburgh, PA, September 2002.
75. *New Approaches for Measuring the Chemical Microenvironment Around Neurons*, J.V. Sweedler, Merck Darmsdadt, April 2002.
74. *New Approaches to Measuring the Neurotransmitters in Simpler Nervous Systems*, J.V. Sweedler, University of Wisconsin, Madison, WI, March 2002.
73. *Developing Methods to Measure the Neurotransmitters In and Around Single Neurons*, J.V. Sweedler, Bradley University, Peoria, IL, March 2002.
72. *Pushing the Limits with Small Volume NMR*, J.V. Sweedler, Departmental Seminar, University of Minnesota, March 2002.
71. *From Cells to Organelles: New Techniques to Measure Neuropeptides and Neurotransmitters*, J.V. Sweedler, Department Colloquium, Michigan State University, East Lansing, MI, November 2001.
70. *Neuropeptides in the Invertebrate CNS*, J.V. Sweedler, Department Colloquium, Arizona State University, Tempe, AZ, October 2001.
69. *From Single Neurons to Single Organelles: Elucidating the Neuropeptides in Well-Defined Neuronal Networks of Aplysia*, J.V. Sweedler, Neurobiology Institute of the University of Puerto Rico, San Juan, July 2001.
68. *New Technologies for Measuring Neuropeptides*, J.V. Sweedler, Pfizer Analytical, Ann Arbor, MI, June 2001.
67. *Assaying Neurotransmitters Around Individual Neurons*, J.V. Sweedler, Virginia Commonwealth University, Medicinal Chemistry, Richmond, VA, March 2001.
66. *Pushing the Limits with Nanoliter-Volume NMR Spectroscopy*, J.V. Sweedler, Virginia Commonwealth University, Chemistry Department, Richmond, VA, March 2001.
65. *Scaling Techniques to Smaller Volumes*, J.V. Sweedler, Eastman Chemical, February 2001.
64. *Techniques to Characterize Nanoliter Volume Biological Samples*, J.V. Sweedler, UC Irvine Departmental Colloquium, Irvine, CA, February 2001.
63. *Assaying Neurotransmitters in and Around Neurons*, J.V. Sweedler, Jackson State University, Jackson, MS, December 2000.
62. *Nanoliter Volume NMR*, J.V. Sweedler, SKB, November 2000.

61. *Measuring the Chemical Microenvironment Around Neurons*, J.V. Sweedler, SUNY Buffalo, New York, NY, October 2000.
60. *New Approaches to Measuring Neurotransmitters and Neuropeptides in Simpler Nervous Systems*, J.V. Sweedler, Sloan Kettering Cancer Institute, New York, NY, June 2000.
59. *Using Mass Spectrometry to Probe Neuropeptides in Single Cells and Cellular Organelles*, J.V. Sweedler, The Milwaukee, Chicago and Madison Mass Spectrometry Discussion Group, May 2000.
58. *Developing Spectroscopic Techniques for the Nanoliter Niche: Studies of Chemical Communication Between Identified Neurons*, J.V. Sweedler, University of California at Berkeley, Berkeley, CA, April 2000.
57. *Measuring the Chemical Microenvironment Around Neurons*, J.V. Sweedler, University of Kansas, Lawrence, KS, March 2000.
56. *Techniques to Measure Neurotransmitters in Neural Networks*, J.V. Sweedler, University of Tennessee, Knoxville, TN, February 2000.
55. *Methods to Probe Transmitters on Single Cells*, J.V. Sweedler, Mt. Sinai School of Medicine, New York, NY, November 1999.
54. *Measuring the Chemical Environment Around Neurons*, J.V. Sweedler, Northern Illinois University, DeKalb, IL, November 1999.
53. *Chemically Characterizing the Cellular Environment*, J.V. Sweedler, Oshkosh, WI, September 1999.
52. *Measuring Neurotransmitters in Cells*, J.V. Sweedler, GlaxoWellcome, London, UK, June 1999.
51. *NMR in the Nanoliter Niche*, J.V. Sweedler, GlaxoWellcome, London, UK, June 1999.
50. *Neurotransmitters in Simple Networks*, J.V. Sweedler, Iowa State University, Ames, IA, April 1999.
49. *FT-ICR in Single Neuron Assays*, J.V. Sweedler, Pacific Battelle FT-ICR Meeting, Washington, DC, November 1998.
48. *Signaling Molecules in Single Neurons*, J.V. Sweedler, University of Texas at Austin, Austin, TX, September 1998.
47. *Techniques to Measure Neurotransmitters in Single Neurons*, J.V. Sweedler, Eastern Illinois University, Charleston, IL, September 1998.
46. *Signaling Molecules in Molluscs*, J.V. Sweedler, Hopkins Marine Station, Stanford, CA, April 1998.
45. *Measuring Neurotransmitters Around Cells*, J.V. Sweedler, University of Arizona, Tempe, AZ, March 1998.
44. *Assaying Signaling Molecules in Cells*, J.V. Sweedler, Salk Institute, January 1998.
43. *Neuropeptides in Cells Using MALDI-TOF*, J.V. Sweedler, PerSeptive Biosystems, December 1997.
42. *Assaying Neurotransmitters in Cells*, J.V. Sweedler, The Ohio State University, Columbus, OH, December 1997.
41. *Signaling Molecules in Cells: Analytical Challenges*, J.V. Sweedler, Florida State University, Tallahassee, FL, November 1997.
40. *Characterizing Signaling Molecules Using Mass Spectrometry and Capillary Electrophoresis*, J.V. Sweedler, Truman State University, Kirksville, MO, October 1997.
39. *Probing Cellular Peptides with MALDI*, J.V. Sweedler, Pacific Northwestern Laboratories, July 1997.

38. *Characterizing Peptides Using Capillary Electrophoresis and Mass Spectrometry*, J.V. Sweedler, University of Toledo, Toledo, OH, April 1997.
37. *Peptide Analysis with Capillary Electrophoresis*, J.V. Sweedler, Wabash College, February 1997.
36. *Neuropeptide Release*, J.V. Sweedler, University of Florida, Gainesville, FL, February 1997.
35. *Microseparations with On-Line NMR*, J.V. Sweedler, Northeastern University, Boston, MA, September 1996.
34. *Assaying Neuropeptides*, J.V. Sweedler, Society of Analytical Chemists of Pittsburgh/University of Pittsburgh, Pittsburgh, PA, September 1996.
33. *Capillary Electrophoresis for Pharmaceutical Analysis*, J.V. Sweedler, Illinois Institute of Technology, May 1996.
32. *Nanoliter Volume NMR*, J.V. Sweedler, Indiana University, student selected seminar, Bloomington, IN, April 1996.
31. *Assaying Neuropeptides from Nanoliter Volumes*, J.V. Sweedler, Indiana University, Bloomington, IN, April 1996.
30. *Analytical Challenges to Assaying Peptides*, J.V. Sweedler, DePauw University, Greencastle, IN, April 1996.
29. *The Distribution of Neuropeptides in Individual Neurons*, J.V. Sweedler, Stanford University, Stanford, CA, April 1996.
28. *Measuring the Distribution and Release of Neuropeptides*, J.V. Sweedler, University of Georgia, Athens, GA, April 1996.
27. *Measuring the Distribution and Release of Neuropeptides from Individual Neurons*, J.V. Sweedler, University of North Carolina, Chapel Hill, NC, March 1996.
26. *Assaying Peptides from Nanoliter Volumes*, University of Illinois in Chicago, Chicago, IL, March 1996.
25. *Capillary Electrophoresis with Two-Dimensional Detection*, J.V. Sweedler, University of Iowa, Ames, IA, February 1996.
24. *Microseparations with Multidimensional Detection*, J.V. Sweedler, ETH Zentrum, Zurich, Switzerland, February 1996.
23. *Assaying Peptides from Nanoliter Volumes*, J.V. Sweedler, University of Michigan, November 1995.
22. *Molecular Information from Nanoliter Volumes*, J.V. Sweedler, Proctor & Gamble, Analytical Colloquium, Cincinnati, OH, October 1995.
21. *Nanoliter Volume NMR*, J.V. Sweedler, Hewlett Packard, Palo Alto, CA, September 1995.
20. *Nanoliter Volume NMR*, J.V. Sweedler, Varian, Palo Alto, CA, July 1995.
19. *Peptide Analysis with Capillary Electrophoresis*, J.V. Sweedler, St. Louis Chromatography Discussion Group, St. Louis, MO, June 1995.
18. *Multidimensional Detection in CE*, J.V. Sweedler, Illinois Institute of Technology, April 1995.
17. *Analysis of Neuropeptides Using Multidimensional Capillary Electrophoresis*, J.V. Sweedler, Pennsylvania State University, State College, PA, March 1995.
16. *Multidimensional Detection Modes in Capillary Electrophoresis*, J.V. Sweedler, Miami University, Miami, OH, November 1994.

15. *Trace Detection of Neuropeptides Using Capillary Electrophoresis*, J.V. Sweedler, Northern Illinois University, DeKalb, IL, September 1994.
14. *Multidimensional Detection Modes in Capillary Electrophoresis*, J.V. Sweedler, Waters, PerSeptive Biosystems; Beckman Instruments, May/June 1994.
13. *Subcellular Neuropeptide Distribution: The Analytical Challenge*, J.V. Sweedler, Neuroscience Program, University of Illinois, Urbana, IL, January 1994.
12. *Analysis of Neuropeptides Using Multichannel Detection in Capillary Electrophoresis*, J.V. Sweedler, SAS Local Section Speaker, Indianapolis, IN, November 1993.
11. *Multichannel Detection in Capillary Electrophoresis*, J.V. Sweedler, University of Utah, Salt Lake City, UT, April 1993.
10. *The Assay of Neuropeptides Using Multichannel Detection in Capillary Electrophoresis*, J.V. Sweedler, Oregon State University, Corvallis, OR, April 1993.
9. *How Little Can We See and Why Do We Want To? The Limits of Detection in Capillary Electrophoresis*, J.V. Sweedler, Waters/Millipore, April 1993.
8. *Multichannel Detection Methods in Capillary Electrophoresis*, J.V. Sweedler, Southern Illinois University, Carbondale, IL, March 1993.
7. *Assay of Neurotransmitters by Capillary Electrophoresis*, J.V. Sweedler, Southern Illinois University at Edwardsville, Edwardsville, IL, January 1993.
6. *Assay of Neuropeptides Using Capillary Electrophoresis with Multichannel Laser-Induced Fluorescence Detection*, J.V. Sweedler, Proctor & Gamble Co., Cincinnati, OH, November 1993.
5. *Analysis of Neuropeptides Using CE with Multichannel Detection*, J.V. Sweedler, Chicago Chromatography Discussion Group, Chicago, IL, February 1992.
4. *Trace Detection of Neuropeptides Using Capillary Electrophoresis with Laser-Induced Fluorescence Detection*, J.V. Sweedler, Central Research Division, Waters/Millipore, October 1991.
3. *Capillary Electrophoresis of Neuropeptides*, J.V. Sweedler, Departmental Seminar, University of Kansas, Lawrence, KS, March 1991.
2. *Holographic Interferometry for Ultraviolet to Near Infrared Spectroscopy*, J.V. Sweedler, with M.B. Denton, Analytical Technologies Division of Eastman Kodak, Rochester, MN, October 1988.
1. *Charge Transfer Device Detectors for Spectroscopy*, J.V. Sweedler, Stanford University, Stanford, CA, July 1988.

ACADEMIC INFORMATION

COURSES TAUGHT

Chemistry 321:	Instrumental Characterization of Chemical Systems, Fall 1994, Spring 1995, Fall 1995. A required junior level lecture course.
Chemistry 322:	Separation Methods, Spring 1993, Spring 1997, Spring 2000, Spring 2001, Spring 2002. A junior/senior level elective laboratory/lecture course.
Chemistry 329:	Instrumental Analysis, Fall 1991, Fall 1992, Spring 1993, Spring 1994. A junior/senior level elective laboratory/lecture course.
Chemistry 420:	Graduate Instrumental Analysis, Fall 1998, Fall 1999, Fall 2000, Fall 2002.

Chemistry 424:	Special Topics in Analytical Chemistry, "Analysis of Microdomains", Spring 1992. An advanced graduate level course emphasizing analytical chemistry of subcellular samples.
Chemistry 425/525:	Analytical Seminar, Fall 1992, Spring 1996, Fall 2016, Fall 2017, Fall 2018.
Chemistry 490:	Graduate Analytical Laboratory, Fall 1996, Fall 1997, Fall 1998.

LABORATORY STAFF**Research Professors**

Elena Romanova (Research Assistant Professor), 2019–current.
Stanislav Rubakhin (Research Associate Professor), 2019–current.

Research Scientists

Elena Romanova, 2009–2019.
Stanislav Rubakhin, 1999–2019.
Richard Milberg, 2003–2006.

Technicians

Xiying Wang, 2007–2021.
Jordan Aerts, 2013–2014.
Elena Romanova, 1998–2000.
Tanya Moroz, 1994–1998.

Program Coordinator

Stephanie Baker, 2006–current.

VISITING SCHOLARS

Huai-Husan Chiu, visiting graduate student, National Taiwan University, 2018–2019.
Hsiao-Wei Liao, Ph.D., School of Pharmacy, National Taiwan University, 2018–2019.
Mizuki Endo, Ph.D., University of Tokyo, 2017–2018.
Meng Qi, Ph.D., Shanghai University of Traditional Chinese Medicine, 2016–2018.
Juan Zhang, Ph.D., Wuhan University, China, 2016–2017.
Sohee Yoon, Ph.D., Korea Research Institute of Standards and Science (KRISS), South Korea, 2014–2015.
Maomao Zeng, Ph.D., Jiangnan University, Jiangsu, China, 2014–2015.
Weiping Wang, Ph.D., Zhejiang Normal University, Jinhua, China, 2013–2014.
Masaki Wakabayashi, Ph.D., Kyoto University, Kyoto Japan, 2013–2014.
Takayuki Kawai, Ph.D., Kyoto University, Kyoto Japan, 2013–2014.
Zhiyong Yang, Ph.D., Pharmacy School, Dali University, Yunnan, China, 2012–2013.
Jingxin Liu, College of Chemistry and Molecular Engineering, Peking University, 2012–2013.
Yi Zhang, Ph.D., Department of Basic Medicine, Tianjin Medicine University, 2012.
Susanne Neupert, Ph.D., Post-Doctoral Scientist, Jena University, Germany, 2010–2011.
Geert Baggerman, Ph.D., Senior scientist, Scientific Research Foundation of Flanders, Belgium, 2007.
Ja-an Annie Ho, Ph.D., Associate Professor, National Tsing Hua University, 2003–2004.
He-Qing Huang, Ph.D., Professor, Xiamen University, P. R. China, 2001–2002.
Cynthia Larive, Ph.D., Professor/Provost, University of California - Riverside, 2001.

POSTDOCTORAL ASSOCIATES

Dharmesh Parmar, 2021–current.
Shuaizhen (Jane) Zhou, 2020–current.
Tian (Autumn) Qiu, 2018–current.

Kevin Clark, 2018–current.

Dong-Kyu Lee, 2019–2021, College of Pharmacy, Chung-Ang University, Seoul, Korea.

Joanna Ellis, 2020–2021, Research Associate, Environmental Medicine and Public Health Department, Icahn School of Medicine at Mt. Sinai, New York, NY.

Yaoyao Zhao, 2019–April 2021, Assistant Professor, Beijing University of Technology, Beijing, China.

James Checco, 2015–2019, Assistant Professor, University of Nebraska-Lincoln, Lincoln, NE.

Tong Si, 2015–2019, Professor, Shenzhen Institutes of Advanced Technology, Chinese Academy of Sciences, Shenzhen, China.

Qiyao Li, 2016–2018, Scientist III, United States Pharmacopoeia (USP), Rockville, MD.

Thanh Do, 2015–2018, Assistant Professor, University of Tennessee, Knoxville, TN.

Qian Wu, 2015–2017, Associate Professor, Central South University, Changsha, China.

Bin Li, September 2014–2017, Professor, China Pharmaceutical University, Nanjing, China.

Lin Wang, February 2014–December 2016, Senior Scientist I, Meril Health, NJ.

Erik Jansson, August 2013–July 2015, Assistant Professor, Uppsala University, Sweden.

David Kissick, June 2012–October 2014, Argonne National Laboratory, Argonne, IL.

Xian Chen, January 2011–September 2012, Research Scientist, Tate & Lyle, Chicago, IL.

Yi Fan, June 2010–August 2012, Scientist, BASF, New York, NY.

Chang Young Lee, January 2010–April 2012, Assistant Professor of Bioengineering at Ulsan National Institute of Science and Technology, Ulsan, Korea.

Peter Nemes, September 2009–February 2011, Associate Professor, University of Maryland, Baltimore County, MD.

Ji Eun Lee, May 2009–May 2010, Senior Research Scientist, Korean Institute of Science and Technology, Seoul, Korea.

Elena Romanova, July 2005–October 2009, Research Assistant Professor, University of Illinois, Urbana-Champaign, IL.

Shifang Ren, January 2008–August 2009, Professor, Shanghai Medical College at Fudan University, China.

Zhen Li, January 2008–August 2009, Associate Professor at China Agricultural University, Beijing, China.

Maojun Gong, September 2006–February 2009, Assistant Professor, Wichita State, Kansas.

Tulika Dalavoy, September 2006–April 2009, Senior Engineer at Bloom Energy, Mumbai, Maharashtra, India.

Suresh Babu Annangudi Palani, October 2005–November 2008, Lead Chemist, Dow Agrosciences, Indianapolis, IN.

Nathan Hatcher, January 2003–August 2008, Principal Scientist, Merck Pharmaceuticals, West Point, PA.

Kyubong Jo, October 2006–February 2008, Associate Professor, Sogang University, Seoul, Korea.

Michael Heien, May 2005–August 2007, Associate Professor, University of Arizona, Tucson, AZ.

Jian Yang, February 2005–October 2006, Scientist, Schering-Plough Corporation (now Merck) Senior Scientist II, Abbott Laboratories, Gurnee, IL.

John Jurchen, August 2003–July 2004, Associate Professor of Chemistry, Department of Natural Science, Concordia University, Seward, NE.

In-Hyoung Chang, August 2002–September 2004, Scientist, Samsung Electro-mechanics, Seoul, Korea.

Luisa Ciobanu, August 2002–2006, postdoctoral associate and scientist joint with Andrew Webb, Head, Ultra-high field micro-imaging at CEA/Neurospin, France.

Carla Swearingen, August 2002–July 2004, Professor of Chemistry, John Brown University, Siloam Springs, AR.

Joseph Tulock, August 2001–June 2004, Senior Scientist, Lead Scientist, Covance, Lansing, MI.

Won-Suk Kim, August 2001–September 2004, Vice President, SDBNI Co. Ltd., Seoul, Korea.
Donald Cannon, November 2000–June 2004, Director of Quality, Frontier Co-Op, Cedar Rapids, IA.
Dimuthu Jayawickrama, August 2000–January 2004, Researcher, Bristol-Myers Squibb, New York, NY.
T.C. Kuo, August 1999–September 2002, Research Scientist, Dow Chemical, Midland, MI.
Stanislav Rubakhin, November 1997–August 2003, Senior Research Scientist, University of Illinois at Urbana-Champaign, IL.
Wenju Feng, August 1999–August 2001, Reading, MA.
Jessica Tan, August 1998–September 1999, Principal Scientist, Amylin Pharmaceuticals, Thousand Oaks, CA.
Young Hun Park, June 1998–July 1999, Korea.
Leonid Moroz, December 1996–December 1998, Professor of Neuroscience, Biology and Chemistry, University of Florida, Whitney Laboratory for Marine Bioscience, FL.
Dean Olson, December 1995–November 1998, Director, NMR Laboratory, School of Chemical Sciences, University of Illinois, Urbana-Champaign, IL.
Yi-Ming Liu, December 1995–August 1997, Professor of Chemistry, Jackson State University, Jackson, MI.
Jeffrey Jankowski, July 1993–March 1995, Associate Professor of Chemistry; Chairperson of Chemistry, Physics, and Biochemistry, North Central College, Naperville, IL.
Nian Wu, June 1993–August 1994, Head of Drug Delivery Technology, LipoSeuticals, Princeton, NJ.

PH.D. STUDENTS

David H. Mast, Ph.D., Analytical Chemistry, Methods for Stereochemical Analysis of Endogenous Cell-Cell Signaling Peptides in Animals, August 2020, Postdoctoral Research Associate, Pacific Northwestern National Laboratory, Richland, WA.
Krishna Dwaipayana Bharadwaj Anapindi, Ph.D. in Chemical Biology, Liquid Chromatography and Mass Spectrometry Based Characterization to Understand the Roles of Neuropeptides in Various Physiological Conditions and Disease States, May 2020, Senior Scientist, AbbVie, North Chicago, IL.
Marina C. Philip, Ph.D. in Analytical Chemistry, Hyphenation of Analytical Techniques to Single Cell Capillary Electrophoresis-Mass Spectrometry, May 2020, AAAS Mass Media Fellow at the Las Vegas Review Journal, Las Vegas, NV.
Joanna F. Ellis, Ph.D. in Analytical Chemistry, Exploring Chemical Communication and Chemical Heterogeneity in Biological Systems with Mass Spectrometry Imaging, May 2020, Research Associate, Environmental Medicine and Public Health Department, Icahn School of Medicine at Mount Sinai, New York, NY.
Elizabeth K. Neumann, Ph.D. in Analytical Chemistry, Exploring Single Cell Neurochemistry with Multimodal MALDI MS, March 2019, Postdoctoral Associate, Vanderbilt University, Nashville, TN.
Emily G. Tillmaand, M.D./Ph.D. in Neuroscience, Neurochemical Characterization of the Rodent Primary Sensory System, May 2018, University of Illinois College of Medicine, Urbana, IL.
Hua-Chia Tai, Ph.D. in Molecular and Integrative Physiology, Analysis of Enzymatic L/D-Peptide Isomerization in Animals, May 2018, Scientist, Bristol-Myers Squibb, New York, NY.
Amit Patel, Ph.D. in Analytical Chemistry, Methodological Advances for the Measurement of the D-Amino Acids Across the Metazoa: From Mollusks to Man, May 2018, Senior Scientist, Waters, Framingham, MA.
Sage Dunham, Ph.D. in Analytical Chemistry, Secondary Ion Mass Spectrometry Imaging of Surface Bound Microbial Communities, May 2018.
Troy Comi, Ph.D. in Analytical Chemistry, Development of Enabling Technologies for Single Cell Analysis with Mass Spectrometry, May 2017, Research Software Engineer, Princeton University, NJ.

- Itamar Livnat, M.D./Ph.D. in Molecular and Integrative Physiology, Analysis of D-Amino Acid Containing Neuropeptides in Mollusks and Rodents, December 2016, Resident Physician, UC Irvine, CA.
- Ning Yang, Ph.D. in Chemical Biology, Mass Spectrometry-Based Characterization of Cell-to-Cell Signaling Molecules in the Nervous System, August 2016, Scientist, Amgen, Boston, MA.
- Sarah E. Dowd, Ph.D. in Analytical Chemistry, Mass Spectrometry-Based Identification and Quantitation of Endogenous Peptides in Complex Biological Matrices, October 2015, Applications Chemist, Waters, Framingham, MA.
- Ta-Hsuan Ong, Ph.D. in Analytical Chemistry, Method Development for Investigating Chemical Distributions in the Nervous System Using Mass Spectrometry Imaging, July 2015, Scientist, Lincoln/MIT Laboratories, Lexington, MA.
- Eric J. Lanni, Ph.D. in Analytical Chemistry, Molecular Imaging with Mass Spectrometry: Instrumental and Methodological Advances for Biological Applications, June 2014, Process Analyzer Engineer, ExxonMobil Research & Engineering, Spring, TX.
- Agatha Maki, M.D./Ph.D. in Neuroscience, Analyzing Peptide Release Using Mass Spectrometry, December 2013, Lead Coordinator, Federal Programs, Andelyn Biosciences, Columbus, OH.
- Callie (Croushore) Kindt, Ph.D. in Analytical Chemistry, Using Microfluidics and Mass Spectrometry to Study Peptide Release from Neurons, December 2013, Visiting Professor of Chemistry, Thomas More College, Crestview Hills, KY.
- Nobutoshi Ota, Ph.D. in Analytical Chemistry, Analysis of Endogenous D-amino Acids in the Central Nervous System and Endocrine Systems via Capillary Electrophoresis with Biochemical Sample Treatments, May 2013, Research Scientist, RIKEN Center for Biosystems Dynamics Research, Osaka, Japan.
- Cong Wu, Ph.D. in Biochemistry, Development and Application of OMP-T-Based Middle Down Proteomics, joint with Neil Kelleher, August 2012, Scientist, Amgen, Thousand Oaks, CA.
- Christopher Dailey, Ph.D. in Analytical Chemistry, Capillary Electrophoresis Instrumentation and Applications for the Analysis of Neural Systems, August 2012, Director of Commercial Development, Novilytic, West Lafayette, IN.
- Xiaowen Hou, Ph.D. in Biophysics, Liquid Chromatography-Mass Spectrometry-Based Neuropeptide Characterizations Across Neuronal Models, January 2012, Senior Research Chemist, AkzoNobel Chemicals, New York, NY.
- Ming Zhong, Ph.D. in Analytical Chemistry, Characterization of Peptide Release from Neuronal Cells with Microfluidics and Mass Spectrometry, December 2011, Process Engineer, Intel Corporation, Hillsboro, OR.
- Ting Shi, Ph.D. in Chemical Biology, Measuring D-Amino Acids in the Central Nervous System Using Capillary Electrophoresis, December 2011, Scientist, Bristol-Meyers Squibb, New York, NY.
- Lu Bai, Ph.D. in Molecular and Integrative Physiology, Characterization of D-Amino Acid-Containing Neuropeptides from Metazoa, December 2011, Senior Research Chemist, Dow Chemical, Philadelphia, PA.
- Christine Cecala, Ph.D. in Physical Chemistry, Instrument Development for the Analysis of Low Abundance Analytes in Single Cells and Small Volume Samples, November 2011, Senior Research Scientist–Optics, Corning Incorporated, New York, NY.
- Kevin Tucker, Ph.D. in Analytical Chemistry, Mass Spectrometry Imaging for Probing Molecular Distributions within the Nervous System, July 2011, Assistant Professor of Chemistry at Southern Illinois University, Edwardsville, IL.
- Liping Wang, Ph.D. in Neuroscience, Amino Acid Racemases Responsible for the Biosynthesis of D-Aspartate and D-Serine Signaling Molecules in the *Aplysia californica* Central Nervous System, June 2011, Lab Manager, Agronomy, University of Florida, Gainesville, FL.

- Ann Knolhoff, Ph.D. in Analytical Chemistry, Mass Spectrometry-Based Investigations to Characterize Specific Cell Types within the Brain, June 2011, Chemist, Food and Drug Administration, Washington, DC.
- Tyler Zimmerman, Ph.D. in Analytical Chemistry, Characterizing Neural Tissues with Mass Spectrometry Imaging via Enhanced Computational Approaches, October 2010, Staff Research Engineer, Collins Aerospace, CA.
- Ping Yin, Ph.D. in Analytical Chemistry, Neuropeptidomics: MS-Based Peptide Identification and Quantitation, September 2010, Scientist, Vertex Pharmaceuticals, Boston, MA.
- Adriana Bora, Ph.D. in Neuroscience, Sampling Strategies for Characterization of Neuropeptides and Functional Implications into Cell-Cell Signaling Using Mass Spectrometry, October 2009, Medical Science Liaison – Neurology, Sanofi Genzyme, Washington, DC.
- Fang Xie, Ph.D. in Analytical Chemistry, Neuropeptidomics Across Metazoan Life, August 2009, Pharmacokinetics and Drug Metabolism Group, Amgen, Thousand Oaks, CA.
- Theodore Lapainis, Ph.D. in Analytical Chemistry, Capillary Electrophoretic Technologies for Single Cell Metabolomics, July 2009, Interdisciplinary Scientist-Chemist, FDA, Bothell, WA.
- Bo Young Kim, Ph.D. in Analytical Chemistry, Biofunctionalization of Submicrometer Pores and Mass-Limited Sample Manipulations in Three-Dimensional Hybrid Microfluidic/ Nanofluidic Devices, August 2008, Manager, Samsung Fine Chemicals, Seoul, Korea.
- Andinet (Amare) Wadhams, Ph.D. in Chemical Biology, Bioinformatics and Mass Spectrometry for Neuropeptide Characterization, May 2008, Instructor at Arizona Western College, Yuma, AZ.
- Jamie (Iannacone) Spomer, Ph.D. in Analytical Chemistry, Hybrid Micro/Nanofluidic Sampling Schemes for Mass Spectrometry, April 2008, Senior Manager, Acceptance Program, American Dental Association, Chicago, IL.
- Eric Monroe, Ph.D. in Analytical Chemistry, Profiling and Imaging the Nervous System with Mass Spectrometry, April 2008, Preservation Research and Testing Division, Library of Congress, Washington, DC.
- Leah Squires, Ph.D. in Analytical Chemistry, Investigations of Serotonin Metabolism in Mammalian and Other Deuterostome Model Systems, July 2007, Senior Scientist, Idaho National Laboratory, Idaho Falls, ID.
- Xiaoying Ye, Ph.D. in Chemical Biology, Measuring Nitric Oxide Production and Nitric Oxide Synthase Metabolite Levels in Single Neurons, February 2007, Scientist, National Cancer Institute, Frederick, MD.
- Timothy Richmond, Ph.D. in Analytical Chemistry, Sampling, Detection and Characterization of Endogenous Peptides, January 2007, Associate Professor, Southwest Baptist University, and now Customer Support Engineer, PerkinElmer, Springfield, MO.
- Cory Scanlan, Ph.D. in Analytical Chemistry, Analysis of D-Aspartate as a Signaling Molecule in the *Aplysia californica* Central Nervous System Using Capillary Electrophoresis and Radioisotopic Labeling, November 2006, Field Service Engineer, Waters, Madison, WI.
- Elena Romanova, Ph.D. in Chemical Biology, Immunocytochemistry, Mass Spectrometry and Microengineering for the Study of Cell Signaling, July 2005, Senior Scientist, University of Illinois at Urbana-Champaign, IL.
- Jennifer A. Jakubowski, Ph.D. in Analytical Chemistry, From Small Molecules to Neurotoxins: Characterizing Neuromodulatory Compounds Using Liquid Chromatography Coupled to Mass Spectrometry, April 2005, Principal Research Chemist, Merck and Co., Inc., West Point, PA.
- Hai Miao, Ph.D. in Analytical Chemistry, Neurotransmitter and Neuromodulator Analysis Using Capillary Electrophoresis with Laser-Induced Fluorescence Detection, November 2004, Senior Scientist/Group Leader, Vertex Pharmaceuticals, Boston, MA.

- Jeffrey N. Stuart, Ph.D. in Analytical Chemistry, Characterization of Novel Serotonin Metabolites in Selected Model Neuronal Systems, September 2004, Director, Regulatory Affairs, Oncology at Novartis, New York, NY.
- Sarah A. Sheeley, Ph.D. in Analytical Chemistry, Novel Approaches for the Measurement of Unusual Post-Translational Modifications in Neuropeptides, July 2004, 2007, Chemistry Learning Center Specialist, Department of Chemistry, University of Illinois at Urbana-Champaign, IL.
- Amanda B. Hummon, Ph.D. in Analytical Chemistry, From Prohormones to Neuropeptides: Mass Spectrometric and Bioinformatic Approaches, July 2004, Associate Professor, Ohio State University, Columbus, OH.
- Wayne Kelley, Ph.D. in Analytical Chemistry, Characterization of Neuromodulatory and Neurotoxic Marine Natural Products Using Microseparation NMR and Mass Spectrometry, October 2002, Manager, BioPharmaceutical Analytical Strategy, GlaxoSmithKline, Philadelphia, PA.
- Xin Zhang, Ph.D. in Analytical Chemistry, Wavelength-Resolved Fluorescence Detection in Capillary Electrophoresis: Application to Single-Cell Analysis of Monoamine Neurotransmitters, September 2002, Scientist, Amgen Pharmaceuticals, Thousand Oaks, CA.
- Rebecca A. (Kruse) Vincent, Ph.D. in Chemical Biology, Novel Mass Spectrometric and Sampling Strategies for Investigating Neuropeptide Processing and Distribution, July 2002, Program Director, National Science Foundation, Washington, DC.
- Andrew Wolters, Ph.D. in Physical Chemistry, Enhanced NMR Detection of Mass-limited Samples with Microcoil Probes: Increasing Sample Throughput and Improved On-line Coupling to Microscale Separations, July 2002, Analytical Manager, GlaxoSmithKline, Raleigh, NC.
- Jason Page, Ph.D. in Analytical Chemistry, Off-Line CE / MALDI MS: Sampling and Deposition Techniques to Incorporate Complementary Analyses for Cellular Assays, June 2002, Chemist, Washington River Protection Solutions, Richland, WA.
- Robin Dahlgren, Ph.D. in Analytical Chemistry, Measures of NO in the Invertebrate CNS, May 2002, Portfolio Manager - IT, Eli Lilly, Indianapolis, IN.
- Michael Lacey, Ph.D. in Analytical Chemistry, Nanoliter-Volume NMR for Mass-Limited Analysis and Capillary Separations, June 2001, Market Development Manager, Exxon-Mobil, Sao Paulo, Brazil.
- Lingjun Li, Ph.D. in Analytical Chemistry, Following Neuropeptide Processing, Distribution, Transport and Release Using Novel Mass Spectrometric Approaches, May 2000, Professor of Pharmacy, University of Wisconsin at Madison, WI.
- Philip Floyd, Ph.D. in Analytical Chemistry, Microseparation Strategies for the Assay of Neuronal Samples, August 1999, Head, Analytical Development, GlaxoSmithKline, Philadelphia, PA.
- Rebecca (Garden) Corbin, Ph.D. in Analytical Chemistry, Mass Spectrometric Characterization of Peptides in Neurons, August 1999, Professor and Chair of Chemistry, Ashland College, OH.
- Robert Fuller, M.D./Ph.D. in Analytical Chemistry, Analytical Measurements of Single Cells and Cellular Organelles, May 1998, Clinical Associate Professor, Department of Obstetrics and Gynecology, University of Virginia Medical School, VA.
- Kurt Oldenburg, Ph.D. in Analytical Chemistry, Peptide Analysis Using Capillary Electrophoresis with Fluorescence Detection, November 1997, Advanced Polymer Analysis Specialist, 3M Company, Minneapolis-St. Paul, MN.
- Scott Shippy, Ph.D. in Analytical Chemistry, Development of Assays for Neuronal Peptide Content and Release, August 1997, Associate Professor, University of Illinois-Chicago, IL.
- Loranelle (Schultz) Lockyear, Ph.D. in Analytical Chemistry, Investigation of Chemiluminescence Detection Parameters for Kinetic Analysis and Capillary Electrophoresis, May 1997, Milfred Riddle McKeown Distinguished Professor of Science, Chair of Chemistry Department, Professor of Chemistry, Bethany College, Lindsborg, KS.
- LouAnn Cruz, Ph.D. in Analytical Chemistry, Analysis of Non-Classical Neurotransmitters Using Capillary Electrophoresis, August 1996, Alcon Laboratories. She passed away in 2018.

Scott Tracht, Ph.D. in Analytical Chemistry, Development of Radionuclide Detectors for use in Capillary Electrophoresis, May 1996, Amylin Pharmaceuticals, and now retired.

Aaron Timperman, Ph.D. in Analytical Chemistry, Capillary Electrophoresis with Wavelength-Resolved Fluorescence for Analysis of Peptides, June 1995, Research Professor, University of Pennsylvania.

MASTERS STUDENTS

Susan Pham, Chemistry, May 2020 (joint with Mary Kraft)

Monika Makurath, Physiology, May 2016

Michelle Colombo, Chemistry, May 2016

Mohammad Ehsan, Chemistry, May 2014

Kasia (Cudzilo) Catherman, Chemistry, May 2011

David Shellhammer, Chemistry, May 2010

Michael Ewing, Chemistry, May 2008

Yanning Chen, Chemistry, December 2002

Steven Palmer, Chemistry, June 1999

Garrett Forbes, Chemistry, June 1996

Sara Bergman, Chemistry, June 1996

Jason Pardee, Chemistry, May 1994

CURRENT GRADUATE / PH.D. STUDENTS / AREA

Yanqi Tan / Analytical Chemistry

Shuangshuang Chen / Analytical Chemistry

Romans Grant / Physical Chemistry

Seth Croslow / Materials Science & Engineering

Chen Huang / Neuroscience

Samuel Okyem / Analytical Chemistry

Shannon Berneche / Neuroscience

Keyin Li / Neuroscience

Yuxuan (Richard) Xie / Bioengineering

Daniel Castro / Physiology

Sara Bell / Analytical Chemistry

Eduardo De La Toba / Analytical Chemistry

Harvey Andersen / Physiology

Shannon Murphy / Analytical Chemistry

Cindy Jung Lee / Analytical Chemistry

Kisurb Choe / Biochemistry

Peter Andersen / Analytical Chemistry

Colin Lee / Neuroscience (joint w/ R. Gillette)

UNDERGRADUATE (HONORS) RESEARCH STUDENTS

Carolyn Oh, current

Zoe Huiying Tian, current

Madeline Melzer, current

Alice Huang, May 2021

Erica Hana Joo, May 2020

Kenjana Tyiska, May 2020

Amelia Triplett, May 2020

Aditi Katwala, May 2020

Andrew Lee, May 2020

Josiah Davis, May 2020

Kenjana Tyiska, May 2020

Jack Schnieder, May 2020

Jessica Krebs, December 2019

Shreya Gargya, December 2019

Yanqi Tan (visiting), December 2019

Yujin Lee, May 2019

Andrew Feng, May 2019

Meemie Hwang, May 2019

Larry Lau, May 2019

Madeline Melzer, May 2019

George Rohi, August 2018

Rachel Bullock, May 2018

Nagarkar Tanvi, May 2018

Ghone Srushti, May 2018

Yuquan (Hamish) Tong, May 2018

Ashley Erin Lenhart, May 2018

Joshua Jones, May 2018

Nicole Petrovic, December 2017

Stephanie Lorenzo, December 2017

Dean Baranski, May 2017

Jimmy Wang, May 2017

Sankara Mandalika, May 2017

Lucas Unze, May 2017

Tiffany Chu, May 2017

Laura Tanase, May 2017

Kenjana Tyiska, May 2017

Sahiti Kolli, December 2016

Robert Mowery, December 2016

Kyungwon Ko, May 2016

Alex Mallek, May 2016

Jeongbin Kim, May 2016

Bora Kim, May 2016

Margaret Crotser, May 2016
 Kaitlin Medland, December 2015
 Zachary Daniels, December 2015
 Feng Zhu, December 2015
 Shaowen Shi, September 2015
 Kelsey Winchell, August 2015
 Charles Doktycz, May 2015
 Riddhi Paudel, September 2014
 Robert Swanson, May 2014
 Ahamed Milhan, May 2104
 Katherine Boehle, May 2014
 Kevin Joerger, August 2013
 Shuo Han, August 2013
 Alex Ruby, May 2013
 Michael Nosick, December 2012
 Matthew Philipp, August 2012
 Jennifer Weber, August 2012
 Kelsey Loden, August 2012
 Arnima Bhasin, May 2012
 Son Nguyen Hong, August 2011
 Lee Replogle, May 2011
 William Friesen, August 2010
 Jessica Henion, August 2010
 Leo Serebryanny, May 2010
 Angela Kao, May 2009
 Dohwan Kim, December 2008
 Kristen Talbot, May 2008

Sally Yoon, December 2007
 Teresa Hardison, August 2007
 Amanda Fortman, August 2007
 Christine O'Brien, May 2007
 Jenna Losh, May 2007
 Jane Wang, May 2007
 Beth Anne Koszczuk, June 2006
 Christie Marika, August 2005
 Ashley Copes, May 2004
 Abbey R. Masonbrink, May 2003
 Dalia Dhingra, May 2001
 Jason Niermann, May 2000
 Danielle Danno, August 1999
 Cheryl Sticha, May 1998
 Juliann Gleeson, May 1998
 Xiaoqian Xi, May 1997
 Mike Schneider, May 1996
 Warren Chan, May 1996
 Edward Lin, December 1995
 Carolyn Stobba, May 1995
 Kerri Seggebruch, May 1994
 Kharim Khatib, May 1994
 Verna Toma, May 1993
 Ricky Bolton, May 1993
 Kristen Konency, December 1992
 Lane Ohliemer, May 1992

SERVICE AND COMMITTEES

UNIVERSITY OF ILLINOIS

Department

Trustee, UIUC Chemistry Trust, 2015–current
 Budget and Operations, Analytical Area, 2016–2018
 Staff Committee, 2005–2012
 Awards Committee, 2001–2003, 2008–2012
 Chemical Biology Admissions, 1999–2001
 Chemical Biology, Area head, 1999
 Courses and Curricula, 1996–1997
 Biomolecular Admissions, 1996–1997
 Analytical Admissions, 1993–1996
 Undergraduate Advising, 1991–1997

School

Director, School of Chemical Sciences, 2012–2021

Note: as SCS Director, I am on many school committees including Chair of the SCS Executive Committee; Chair, Conflict Management and Oversight Committee; Chair, Information Systems Services Committee, and others.

Board of Directors, Zeta Corporation (AXΣ), 1993–2009

Executive Committee, 2001–2003

Chair, Steering Committee for Mass Spectrometry, 1999–2002

Department Head Search Committee, 1999

NMR Advisory Committee, 1996

AXΣ Advisor, 1993–1995

Cumulative Exams Committee, 1991–1993, 1998

Campus

Internal Advisory Council for the Cancer Center at Illinois, 2019–22

Beckman Institute Executive Committee, 2017–2022

Co-PI and Executive Committee, NSF NRT-UtB: Training the Next Generation of Researchers in Engineering and Deciphering of Miniature Brain Machinery, 2017–2022

Diving Board, 1999–2020

UIUC Campus Budget Oversight Committee, 2017–2020

Beckman Institute MRT Intelligent Systems Co-chair, 2017–2019

UIUC 150 Celebration Committee, 2017–2018

DBS Faculty Development Program, 2012–2019

UIUC Classified Research Policy Committee, 2015

UIUC Research Safety Council, 2014–2015

Chair for the Genomic Ecology Theme Review, IGB, 2012–2013

UIUC Named Faculty Appointment Committee, 2011–2014

UIUC Council of Center Directors, 2008–2013

Internal Advisory Board, Institute for Advanced Computing Applications and Technology, 2007–2011

NeuroIGERT Executive Committee, 2009–2011

Neuroscience Executive Committee, 2009–2010

Department Head of Bioengineering Search Committee, 2007–2008

Chair, Fluorescence Spectroscopy/Microscopy Facility Committee Meeting, 2005–2006

Advisory Committee for the Institute for Advanced Computing Applications and Technologies, 2005–2006

Faculty representative on the UIUC Infomercial on Interdisciplinary Research, 2003–2004

Co-chair, PharmaEngineering Initiative, 2002–2004

Chair, Cell as a Micromachine Initiative, 2002–2004

How Do Faculty Spend Their Time? A special report to the Board of Trustees of the University of Illinois, May 2003

Chancellor's Cross Campus Initiatives Advisory Board, 2002

Chancellor's Conference on New Initiatives, 2002

Vice Chancellor Search Committee, 2001–2002

Graduate College Area Subcommittee for Engineering and Physical Sciences, 1998–2000

Head, Biological Sensors Group, Beckman Institute, 1997–2002

U of I Presidents Retreat on Research of Graduate Education, December 1997

Chancellor's Conference on Undergraduate Advising, Faculty Presenter, 1997
Bioengineering Degree Program, 2000–2001
Executive Committee, Neuroscience Program, 1997–98, 1999–2000, 2000–2001
Graduate Admission Committee, Neuroscience Program, 1996–1997
Research and Technology Management Office, University Liaison Committee, 1996–1997
Chair, Search Committee for Technology Manager/Assistant Vice Chancellor for Research, 1995–1996
Nalbandov Symposium: Inside the Single Cell, Organizer and Co-chair, 1993
School of Life Sciences/Chicago Community Colleges short course at Truman College, 1993

NATIONAL

American Chemical Society (ACS)

ACS Peer Review Advisory Group: 2015–2019
ACS Chair of three Editor-in-Chief Search Committees: 2014–2017
ACS Editors' Managed Support Steering Committee, 2014–2017
ACS Publications Taskforce on Mass Spectrometry Data, 2014–2016
Analytical Division Executive Committee, 2011 to present
Jury member for Division Awards, including:
ACS Analytical Division Instrumentation Award, 1996–1999, 2011, 2012
ACS Findeis Award, 2002–2004, 2007
Analytical Chemistry Young Innovator Award, 2009–2011
Secretary, Central Illinois Section of the ACS, 1992–1994

Organized sessions and symposia:

Kavli BRAIN Initiative symposium, ACS National Meeting, organized and presided, 2018
The Emerging Technologies and Capabilities of Metabolomics, ACS National Meeting, organized and presided, 2007
Techniques for Metabolomics Measurements, organized and presided, ACS National Meeting, 2007
Studying the Metabolome, organized and presided, ACS National Meeting, 2005
Arthur Findeis Award for Achievements by a Young Analytical Scientist, presided, ACS National Meeting, 2005

American Society for Mass Spectrometry (ASMS)

Peptidomics, Sanibel Island Conference, Organizer and Co-chair, 2017

Association of Biomolecular Resource Facilities (ABRF)

Single Cell Mass Spectrometry, symposium organized and presided, ABRF 2015

CASSS (Separation Society)

Associate Director, 2010–2020
Academic/Graduate Fellowship Awards Committee, 2015–2019
Portfolio Development Committee, 2011–2012
International Conference on Microscale Bioseparations (MSB)
Scientific Advisory Board, 2007, 2008, 2009, 2010
Conference Chairman, 2009

Center for Top Down Proteomics: Northwestern University

External Advisory Board Chair, P41 Center for Top Down Proteomics Measurement, 2017–2021

China Mass Spectrometry Imaging Conference

Co-organizer (with Prof. Bin Li), China Pharmaceutical University, Nanjing, China

Cold Spring Harbor Laboratories

Lecturer/instructor, Single Cell Analysis course, 2012–2016, 2019

Prepared and helped teach a unit on single cell measurements via MS

Eastern Analytical Symposium

Session: Small Techniques in Analytical Chemistry, organized and presided, 2000

Euroanalysis

Session: Meet the Editors of Analytical Chemistry, co-organized/presided (with A. Ewing), 2017

Faculty of 1000

Contributing member, 2003–2008

Federation of Analytical Chemistry and Spectroscopy Societies (FACSS/SciX)

Single Cell Mass Spectrometry, organized and presided, 2002

Capillary Electrophoresis, presided, 1995

Gordon Research Conference/Seminars

Mentor/Discussion leader, GRS, Protein Trafficking, 2018

Presider/Discussion leader, Analytical Chemistry, 1995

Presider/Discussion leader, Analytical Chemistry, 1993

Heinrich Emanuel Merck Award for the Analytical Sciences (sponsored by Merck)

International Jury member, 2015-2019

HPLC

Scientific Advisory Board 2005, 2008, 2015

Workshop organizer: Preparing Your Manuscript and Publishing it from an Editor's Perspective, HPLC 2018 (Washington, D.C.)

Workshop organizer: How to Publish your Work, Views from Editors, HPLC 2019 (Kyoto)

Workshop organizer: How to Publish your Work, Views from Editors, HPLC 2016 (San Francisco)

Workshop organizer: How to Publish your Work, Views from Editors, HPLC 2015 (Beijing)

International Conference on Scientific Optical Imaging

Organizing Committee, 1992

International Conference on D-Amino Acids

3rd IDAR meeting: Scientific Committee, Como, Italy, 2017

Organized session on Analytical methods for D-AA research

4th IDAR meeting: Scientific Committee, Tokyo Japan, 2019

Organized session on D-amino acid containing peptides

5th IDAR meeting: Chair, Urbana IL, 2022

International Research Center on D-Amino acids (IDAAR)

Inaugural Scientific Advisory Board, 2019-2021

Organized under the auspices of Fondazione Istituto Insubrico Ricerca per la Vita

International Symposium on Bioanalysis, Biomedical. Engineering and Nanotechnology

International Advisory Board, 2018

Metaspace (European Mass Spectrometry Imaging)

Inaugural International Advisory Board, 2014–2019

Ourcon (Conference on Imaging Mass Spectrometry)

Scientific Committee, Antayla, Turkey, October 2014

Scientific Committee, Ourense, Spain, September 2012

Pittsburgh Conference on Analytical Chemistry and Applied Spectroscopy

Analytical Chemistry and ACS ANYL - New Measurement Approaches for Single Cell Analysis, organized and presided, 2019
Analytical Chemistry and ACS ANYL - New Measurement Approaches for Environmental Sampling and Measurement, organized (with X. Chris Le), 2018
Ralph Adams Award Symposium to Robert Kennedy, organized and presided, 2016
Measuring the Brain: From the Synapse to Thought, Symposium, organized and presided, 2016
Pittcon Achievement Award symposium to Ryan Bailey, presided, 2015
Emerging Technologies for Metabolomics, organized and presided, 2007
A Molecular Portrait of a Characterized Neuron, Symposium, co-organized and co-presided, 2005
Imaging Mass Spectrometry: Combining Mass Spectrometry and Microscopy, Symposium, organized and presided, 2004
The Hyphenation of NMR to Separations, Symposium, organized and presided, 2003
Single Cell Assays, Symposium, organized and presided, 2000
Advances in NMR, Symposium, organized and presided, 1997
New Development in Fluorescence Detection, Symposium, organized and presided, 1995
Inside the Single Cell, Symposium, organized and presided, 1993

Regpep

Symposium: Neuropeptidomics, organized and presided, 2016
(2016 was a special joint meeting with the International Regulatory Peptide Society, the Summer Neuropeptide Conference, the European Neuropeptide Club and the Groupe Français des Peptides et des Protéines Spectroscopy.)

Society of Applied Spectroscopy

Budget Committee, 1993–1995
Publication Committee, 1992–1995, Chairman 1993
Tour Speaker, 1993

Society for Neuroscience

Symposium: Unraveling the Neuropeptidome: New Approaches and Novel Insights, organized and presided, 2008

The World Microcirculation Society

Symposium: What can Mass Spectrometric Analysis Offer: A Bridge between Local Metabolism and Microvascular Functions, co-organized and presided, 2015