

Roxanne Auck Vaughan, Ph.D.
Curriculum Vitae

Department of Biochemistry and Molecular Biology
University of North Dakota School of Medicine and Health Sciences tel: 701-777-3419
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Grand Forks, ND 58202-9037 roxanne.vaughan@med.und.edu

PERSONAL

Address: 402 Grassy Hills Lane, Grand Forks, ND 58201
Date of Birth: November 2, 1954
Place of Birth: Minot, North Dakota, USA
Marital Status: Married, Jefferson Archer Vaughan, Ph.D., two daughters

EDUCATION

Ph.D. Zoology	1985	Virginia Polytechnic Institute and State University
M.A. Zoology	1980	University of California at Davis
B.S. Biology	1976	Colorado State University

PROFESSIONAL EXPERIENCE

1985-1989	Postdoctoral Fellow, Department of Biological Chemistry Johns Hopkins University School of Medicine
1990-1998	Staff Fellow/Senior Staff Fellow, NIDA Intramural Research Program Neuroscience and Molecular Neurobiology Branches
1998-2002	Assistant Professor, Department of Biochemistry and Molecular Biology University of North Dakota School of Medicine and Health Sciences
2002-2007	Associate Professor, Department of Biochemistry and Molecular Biology University of North Dakota School of Medicine and Health Sciences
2007-present	Professor, Department of Biochemistry and Molecular Biology University of North Dakota School of Medicine and Health Sciences

PROFESSIONAL MEMBERSHIPS

American Society for Biochemistry and Molecular Biology
Society for Neuroscience

HONORS AND AWARDS

1972	Valedictorian, Harrison High School Colorado Springs, CO
1972	Colorado State University President's Scholarship
1976	<i>Phi Beta Kappa</i> National Honor Society
1984	<i>Phi Kappa Phi</i> National Honor Society
1995	National Institute on Drug Abuse Intramural Research Program Director's Award
1997	National Institutes of Health, Fellows Award for Research Excellence
2002	<i>Sigma Xi</i> National Honor Society
2004	UND Foundation/McDermott Award for Excellence in Research, Service and Teaching
2004	H. David Wilson Academic Award in Neuroscience
2006	UND Presidential Lecture
2010	UND Spirit Award for Faculty Achievement
2011	Chester Fritz Distinguished Professor
2012	UND Spirit Award for Faculty Achievement
2012	Reverend Elmer and Min West Memorial Award for Excellence in Teaching

TEACHING

BC 301	Undergraduate Biochemistry
BMB 401	The Biochemistry of Proteins and Information Flow
BMB 403	Advanced Biochemistry Laboratory
BC 501	Principles of Biochemistry, Graduate Biochemistry
BC 530	Advanced Topics Biochemistry Membrane Transport. Course Coordinator
BMB 533	Advanced Graduate Biochemistry
BMB 514	Current Literature, Course Coordinator
BMB 521	Biochemistry Seminar, Course Coordinator
BIMD 500	Foundations of Biomedical Sciences, Graduate Biomedical Sciences
PPT 527	Neurophysiology of Synaptic Transmission (guest lecture 2004, 2006)
BIOL 451	Neurobiology of Addiction (guest lecture 2006)
Medical School	Facilitator for Patient-Centered Learning, Blocks 4, 5, and 8
Medical School	Lecturer, Block 1, Block 4

Students and Fellows

Graduate Committee Chair

Benchaporn Pananusorn	M.S.	1998-2001
Identification of Protein Kinase C-Mediated Phosphorylation sites on the Dopamine Transporter		
Jon D. Gaffaney	Ph.D.	1999-2005
Ligand-Induced Conformational Changes of Extracellular Loop Two of the Dopamine Transporter NRSA Predoctoral Fellowship		
Mark A. Cervinski	Ph.D.	2000-2006
Regulation of Dopamine Transporter Activity and Phosphorylation by Psychostimulant Substrates and Protein-Protein Interactions NRSA Predoctoral Fellowship, UND Distinguished Dissertation Award		
M. Laura Parnas	Ph.D.	2001-2007
Exploring the Ligand Binding Site on the Dopamine Transporter by Photoaffinity Labeling and Site-Directed Mutagenesis ND EPSCoR Doctoral Dissertation Fellowship		
Balachandra K. Gorentla	Ph.D.	2003-2008
Molecular Characterization of Dopamine Transporter Phosphorylation and Regulation ND EPSCoR Doctoral Dissertation Fellowship		
Amy E. Moritz	Ph.D.	2006-2011
Post-translational Regulation of the Dopamine Transporter		
Rewji Acharya	Ph.D.	2010-2014
Attachment Sites of Irreversible Cocaine Analogs on the Dopamine Transporter		
Sathya Challa	Ph.D.	2010-2014
Regulation of Dopamine Transporter Thr53 Phosphorylation Site ND EPSCoR Summer Doctoral Fellowship		
Danielle Rastedt	Ph.D. Student	2011-2015
ND EPSCoR Doctoral Dissertation Fellowship		

Michael Tomlinson Ph.D. Student 2011-

Graduate Committee Member

Eduard Tyapochik	Ph.D. Department of Chemistry	1999-2005
Robert Bianco	Ph.D. Biochemistry and Molecular Biology	2001-2004
Kristen Tews	Ph.D. Biochemistry and Molecular Biology	2001-2004
Clay Comstock	Ph.D. Biochemistry and Molecular Biology	2001-2004
Chris Patterson	M.S. Biochemistry and Molecular Biology	2001-2004
Sugato Banjeree	M.S. Pharmacology Physiology & Therapeutics	2004-2006
Lei Ding	Ph.D. Biochemistry and Molecular Biology	2004-2007
Dagmar Hajkova	Ph.D. Biochemistry and Molecular Biology	2005-2006
Dhananjay Sakrikar	Ph.D. Student Biochemistry and Molecular Biology	2005-2006
Vikram Palamalai	Ph.D. Biochemistry and Molecular Biology	2005-2007
Shibi Kannan	Ph.D. Biochemistry and Molecular Biology	2005-2008
Sunitha Bollimuntha	Ph.D. Biochemistry and Molecular Biology	2005-2009
Sunitha Sharma	Ph.D. Pharmacology Physiology & Therapeutics	2006-2008
Laurel Grisanti	Ph.D. Pharmacology Physiology & Therapeutics	2008-2011
Tracey Ystesund	M.S. Biochemistry and Molecular Biology	2009-2010
Sherine Talaat	M.D./Ph.D. Biochemistry and Molecular Biology	2010-2012
Justin Burum	Ph.D. Biology	2010-
Lei Guo	Ph.D. Biology	2011-
Bruce Felts	Ph.D. Pharmacology Physiology & Therapeutics	2011-2015
Danielle Pinsonneault	Ph.D. Pharmacology Physiology & Therapeutics	2011-
Madhur Shetty	M.S. Biochemistry and Molecular Biology	2012
Daniel Stanislawski	Ph.D. Biochemistry and Molecular Biology	2012-

Postdoctoral/Faculty

Margaret Lowe, Ph.D.	Postdoctoral Fellow	1999-2001
James D. Foster, Ph.D.	Research Assistant Professor	2000-2011

Undergraduate and Medical Students

Isaac Marsolek	St. John University, Biology Major	2001-2002
Krista Olsen	University of North Dakota, Medical Student	2002
Alexa Zink	University of Mary, Biology Major	2002
Brian Clemetson	University of North Dakota	2003
Brian Dahl	Concordia College, MN	2003
Diane Johnson	ND EPSCoR Science Bound Student	2003-2004
Jill Porter	University of Kansas, PreMed Major	2006
Katherine Vogt	University of North Dakota, Biology Major	2008
Kyle Wilebski	University of North Dakota, Medical Student	2009-2012

Technicians

Heather Holden	Research Specialist	1999-2003
Steven Adkins	Research Specialist	2003-2009
Margaret Smith	Research Specialist	2010-

GRANT ACTIVITY

Active

Title:	<i>Computational and Biochemical Docking of Dopamine Transporter Antagonists</i>	
Source:	NIH, National Institute on Drug Abuse	1 R01 DA027845
Amount:	\$1,355,000	Award period: 01/07/10-12/31/14

PI: RA Vaughan and LK Henry

Title: *Pharmacology of Dopamine Release by Amphetamine*

Source: NIDA 2R01 DA011697-10

Award Period: 4/1/12-2/15/15

PI: ME Gnegy

Co-PI: Vaughan RA, Jones SR

Amount: \$155,714 (Vaughan subcontract)

Title: *Affinity Labeling of Antidepressant and Substrate Binding Sites on the Serotonin Transporter*

Source: UNDSMHS Seed Grant

Amount: \$50,000

Award period: 03/01/13-02/28/14

PI: **RA Vaughan**, LK Henry

Title: *Epigenomics of Development and Disease*

Source: NIH NCRR COBRE

Amount: \$7,800,000 (direct) \$10,650,000 (total)

Award period: 10/01/12-9/30/17

PI: **RA Vaughan**

Title: *Dopamine Transporter Antibody Development and Commercialization*

Source: COBRE Pathophysiology of Neurodegenerative Disorders Pilot Grant

Amount: \$43,211 (direct and total)

Award period: 10/01/15-5/30/16

PI: JD Foster **and RA Vaughan**

Pending

Title: *Cholesterol Regulation of Secondary Active Transporters*

Source: National Science Foundation

Amount: \$688,338 (total)

Award period: 07/01/16-06/30/19

Previous

Title: *Phosphorylation and Regulation of Dopamine Transporters*

Source: NIH, National Institute on Drug Abuse

5R01 DA 13147-10

Amount: \$2,566,203

Award period: 7/01/99-7/31/12

PI: RA Vaughan

Title: *Ligand Binding Sites on the Dopamine Transporter*

Source: NIH, National Institute on Drug Abuse

RO1 DA 11176

Amount: \$50,846 (subaward)

Award period: 11/01/00-10/31/03

PI: JB Justice

Co-I RA Vaughan

Title: *Phosphorylation of Human Dopamine Transporters*

Source: National Science Foundation, ND EPSCoR

Amount: \$37,500

Award period: 7/01/02-4/30/04

PI: RA Vaughan

Title: *Affinity Labeling the Dopamine Transporter Active Site*

Source: NIH, National Institute on Drug Abuse

R01 DA 15175

Amount: \$831,818

Award period: 4/01/03-3/31/07

PI: RA Vaughan

Co-I JB Justice, AK Dutta, JR Lever

Title: *Pharmacology of Dopamine Release by Amphetamine*

Source: NIH, National Institute on Drug Abuse

1R01 DA 11697

Amount: \$9,111 Award period: 12/01/05-06/30/07
 PI: M Gnegy CoPI RA Vaughan

Title: *MAP Kinase and the Dopamine Transporter*
 Source: National Science Foundation, ND EPSCoR Infrastructure Improvement Grant
 Amount: \$20,000 Award period: 10/01/06-6/30/07
 PI: RA Vaughan

Title: *Regulation of the Dopamine Transporter by Syntaxin 1A*
 Source: UND Faculty Seed Money
 Amount: \$40,000 Award period: 6/01/08-5/31/09
 PI: RA Vaughan

Title: *Structure and Function of Dopamine Transporters*
 Source: NIH, National Institute on Drug Abuse 1R01 DA026530-01
 Amount: \$95,524 (subaward) Award period: 07/01/09-06/30/12
 PI: CK Surratt Co-PI RA Vaughan, D Lapinski, JR Lever

Title: *Phosphorylation and Regulation of Dopamine Transporters*
 Source: NIH, National Institute on Drug Abuse 5R01 DA 13147-10
 Amount: \$521,739 Award period: 08/01/2009-7/31/2012
 PI: RA Vaughan

Title: *Protein palmitoylation in α -synuclein models of Parkinson's disease*
 Source: COBRE Pathophysiology of Neurodegenerative Disorders Pilot Grant
 Amount: \$40,000 Award period: 08/01/11-05/30/12
 PI: RA Vaughan, JD Foster, EJ Murphy

Title: *Potential Cholesterol Interaction Motifs in the Dopamine Transporter*
 Source: COBRE Pathophysiology of Neurodegenerative Disorders Pilot Grant
 Amount: \$50,000 Award period: 10/01/12-05/30/13

Trainee Fellowships Mentored

Title: *Regulation of the Dopamine Transporter by ERK*
 Source: ND EPSCoR Doctoral Dissertation Assistantship
 Amount: \$39,390 Award period: 08/01/07-07/31/09
 PI: Balachandra Gorentla Sponsor: RA Vaughan

Title: *Dopamine Transporter Phosphorylation and Membrane Raft Localization*
 Source: Parkinson's Disease Foundation Award period: 7/01/07-6/30/08
 Amount: \$50,000 PI: James D Foster

Title: *Palmitoylation, Trafficking, and Regulation of the Dopamine Transporter*
 Source: UND Seed Money Grant Award period: 7/01/07-6/30/08
 Amount: \$10,570 PI: James D Foster

Title: *Cocaine Binding Sites on the Dopamine Transporter*
 Source: ND EPSCoR Doctoral Dissertation Assistantship
 Amount: \$35,286 Award period: 8/16/05-8/15/07
 PI: M Laura Parnas Sponsor: RA Vaughan

Title: *Monitoring Conformations Within the Dopamine Transporter*
Source: NIDA, NRSA Predoctoral Fellowship F31DA 14857
Amount: \$71,640 Award period: 11/01/01-10/31/04
PI: Jon D Gaffaney Sponsor: RA Vaughan

Title: *Psychostimulant-Regulated DAT Phosphorylation*
Source: NIDA, NRSA Predoctoral Fellowship F31 DA17520
Amount: \$71,904 Award period: 9/17/03-9/16/06
PI: Mark A Cervinski Sponsor: RA Vaughan

Title: *Graduate Student Research Assistantship*
Source: ND EPSCoR EPS-0814442
Amount: \$52,000 Award period: 9/17/10-12/31/12
PI: Michael Tomlinson Sponsor: RA Vaughan

Title: *Identification of Dopamine Transporter Palmitoylation Enzymes*
Source: ND EPSCoR Doctoral Dissertation Assistantship
Amount: \$42,830 Award period: 8/16/13-8/15/15
PI: Danielle Rastedt Sponsor: RA Vaughan

Equipment Grants

Title: *Acquisition of LC/MS/MS System for Chemistry and Medical School Departments*
Source: National Science Foundation, Major Research Instrumentation
Amount: \$225,445 Award period: 9/01/02-8/31/04
PI AJ Borgerding Co-I Picklo, Smoliakova, Vaughan

Title: *Dopaminergic Transmission Systems and Their Roles in Drug Addiction*
Source: Office of National Drug Control Policy
Amount: \$3,800,000 Award period 01/01/03-12/31/06
PI M Ebadi Co-I: Carr, DeLorme, Doze, Porter, Krause, Lee, Sharma, Vaughan

Title: *Acquisition of a TIRF/Widefield fluorescence microscope for cell biology and neuroscience*
Source: NIH NCRR
Amount: \$341,070 (direct) Award period: 04/01/13-3/31/14
PI: BD Grove Co-PI: **RA Vaughan**, BB Singh, JD Geiger, O Ghribi

PATENTS AND LICENSES

2012	Abcam	Dopamine transporter monoclonal antibody License
2012	Novus	Dopamine transporter monoclonal antibody License
2012	Millipore	Dopamine transporter monoclonal antibody License
2012	ImmunQuest	Dopamine transporter monoclonal antibody License

SERVICE ACTIVITIES

Departmental

2001-2003 Faculty Search Committee (3 positions)

2002-2004	Department Research Committee
2002-present	Promotion and Tenure Committee (Chair 2010- present)
2003-2004	Committee on Promotion and Tenure Guidelines
2004-2005	Strategic Planning Committee
2005-2011	Comprehensive Examination Committee
2005-2006	Faculty Search Committee
2008-2009	Faculty Search Committee
2011	Faculty Search Committee
2014	Faculty Search Committee (4 positions)
2015	Internal Study Section Member

School of Medicine

2000-2002	Search Committee, Pathology Chair
2001	Search Committee, Biochemistry and Molecular Biology Chair
2001-2004	Research Committee
2001-2006	Graduate Curriculum Committee, (Chair 2001-2004)
2002-2003	Search Committee, Pharmacology, Physiology and Therapeutics Chair
2003-2009	Promotion and Tenure Committee
2003-present	Internal Advisory Committee, COBRE Pathophysiology of Neurodegeneration
2003-2004	Search Committee, Pharmacology, Physiology & Therapeutics (2 positions)
2004-2010	Medical School Block IV Design Team
2004	Organizer, Graduate Retreat
2004-2006	LCME Research/Graduate Education in the Sciences Basic to Medicine
2007	Pharmacology, Physiology and Therapeutics Faculty Search Committee
2007-2008	Search Committee, Associate Dean for Research
2007-2012	Nominating Committee
2007-2009	Task Force on Women Faculty Issues
2008-2011	Search Committee, Pharmacology, Physiology and Therapeutics (2 positions)
2008-2009	Search Committee, Microbiology Chair
2008-2009	Mentor, Keith Henry K01 and NARSAD awards
2010-2011	COBRE Pilot Grant Review Board
2010-present	Medical Student Academic Performance Committee (Vice Chair 2012-2015)
2011-2013	Research Committee
2011-2012	Search Committee, Director of Master of Public Health Program
2011-2012	Search Committee, Associate Dean of Student Affairs
2011-2013	Search Committee, Founding Chair, Department of Geriatrics
2011-2013	Search Committee, Founding Chair Basic Biomedical Sciences Department
2013-2014	LCME Faculty Self-Study Committee

University

2003	Alice T. Clark/UND Foundation Scholars Mentoring Program
2004	Red River Neuroscience Initiative
2005	Committee to Review NSF Major Instrumentation Preproposals
2008	UND Promotional Television Commercial
2009-2010	Search Committee, Vice President for Health Affairs and Dean, School of Medicine and Health Sciences
2010-2012	Outstanding Faculty Awards Committee
2015	REAP Program Faculty Mentor

Profession

Manuscript Reviews

1999-present ACS Chemical Neuroscience, Biochemical Pharmacology, Brain Research, Drug and Alcohol Dependence, European Journal of Biochemistry, European Journal of Neuroscience, FEBS Letters, Future Neurology, Journal of Pharmacology and Experimental Therapeutics, Journal of Neurochemistry, Journal of Neuroscience, Journal of Neuroscience Research, Molecular Brain Research, Molecular Biology of the Cell, Molecular Pharmacology, Nature, Neuropharmacology, Neuroscience Letters, Neuropsychopharmacology, PLoS One, Proceedings of National Academy of Science, U.S.A., Protein Science, Synapse

2004-present Handling Editor, Journal of Neurochemistry

2006 Book Proposal Review “Dopamine Transporter: Biology, Chemistry, and Pharmacology”, John Wiley & Sons, Inc.

2012-2013 Organizing Committee ISN Satellite Meeting Proposal

Grant Reviews

2000 NDSU Research Development Support Program

2001 NIDA R15 CEBRA Program

2002-2004 University of Missouri Research Board Application

2004 ND EPSCoR AURA/Science Bound Applications

2004 NIDA R15 CEBRA Program

2004-2007 VA Merit Review Neurobiology A Subcommittee Study Section

2005 NIH, Molecular Neuropharmacology and Signaling Study Section

2005 NIH, Neurotransmitters, Receptors, and Calcium Signaling Study Section

2006 NIH, F03B Fellowship Study Section

2007 NIH, Special Emphasis Group, ZRG1 MDCN-J(02)

2008-2010 VA Merit Review Neurobiology A Special Emphasis Group

2009 NIH Challenge Grants in Health and Science Research (RC1)

2009 NIH, Molecular Neuropharmacology and Signaling Study Section

2010 NIH, ZRG1 MDCN-G(51) Program Project Grants

2011 Deutsch Forschungsgemeinschaft (German Research Foundation)

2011-2017 NIH, Molecular Neuropharmacology and Signaling Study Section

2012 United States – Israel Binational Science Foundation

Community

2001 Career Fair, Kelly Elementary School “What is a Scientist?”

2002 Research Presentation to State Board of Higher Education

2003 Research Presentations to State and Local Elected Officials

2004 Research Presentation to GFAFB Officer’s Wives

2005 Research Presentation to family of Ralph Englestad

2005-2008 Contributor, Rural Assistance Center Methamphetamine Information Guide

2006 Presentation, ND Legislative Council Budget Committee on Health Care

2007 Presentation to the UNDSMHS Health Sciences National Advisory Council

2007 Interview, Prairie Public Television “The METH Awareness Project”

2012 Interview, The Science of Addiction, UND Television Program

2013 Video: Epigenetics at the University of North Dakota

2015 Osher Life Long Learning Institute at UND “Cocaine’s Hook”

RESEARCH PUBLICATIONS

1. Rutherford CL, Taylor RD, Frame LT, and **Auck RL** (1982) A cyclic AMP dependent protein kinase in *Dictyostelium discoideum*. Biochem Biophys Res Comm 108:1210-1221.

2. Rutherford C, **Vaughan R**, Cloutier M, Ferris D, and Brickey D (1984) Chromatographic properties of a cyclic AMP dependent protein kinase and its subunits from *Dictyostelium*. Biochemistry 23:4611-4617.
3. Klein P, **Vaughan R**, Borleis J, and Devreotes P (1987) The surface cAMP receptor in *Dictyostelium*: levels of ligand-induced phosphorylation, solubilization, identification of primary transcript, and developmental regulation of expression. J Biol Chem 262:358-364.
4. **Vaughan RA** and Rutherford CL (1987) Distribution of cyclic AMP dependent protein kinase during development of *Dictyostelium discoideum*. Dev Biol 121:359-367.
5. **Vaughan RA** and Devreotes PN (1988) Ligand-induced phosphorylation of the cAMP receptor from *Dictyostelium discoideum*. J Biol Chem 263:14538-14543.
6. Johnson RL, **Vaughan RA**, Caterina MJ, Van Haastert PJM, and Devreotes PN (1991) Overexpression of the cAMP receptor 1 (cAR1) in growing *Dictyostelium* cells. Biochemistry 30:6982-6986.
7. Simantov R, **Vaughan R**, Lew R, Wilson A, and Kuhar MJ (1991) Dopamine transporter-cocaine receptor: characterization and purification. Adv Biosci 82:151-154.
8. **Vaughan RA**, Simantov R, Lew R, and Kuhar MJ (1991) A rapid binding assay for solubilized dopamine transporters using [³H]WIN 35,428. J Neurosci Meth 40:9-16.
9. Lew R, **Vaughan R**, Simantov R, Wilson A, and Kuhar MJ (1991) Dopamine transporters in nucleus accumbens and the striatum have different apparent molecular weights. Synapse 8:152-153.
10. Lew R, Patel A, **Vaughan RA**, Wilson A, and Kuhar MJ (1992) Microheterogeneity of dopamine transporters in rat striatum and nucleus accumbens. Brain Research 584:266-271.
11. **Vaughan R**, Uhl G, and Kuhar M. (1993) Recognition of dopamine transporters by anti-peptide antibodies. Mol Cell Neurosci 4:209-215.
12. Patel A, Cerruti C, **Vaughan RA**, and Kuhar MJ (1994) Developmentally regulated glycosylation of dopamine transporters. Dev Brain Res 83:53-58.
13. Hereld D, **Vaughan RA**, Kim JY, Borleis J, and Devreotes P (1994) Localization of ligand-induced phosphorylation sites to serine clusters in the C-terminal domain of the *Dictyostelium* cAMP receptor, cAR 1. J Biol Chem 269:7036-7044.
14. **Vaughan RA** (1995) Photoaffinity-labeled ligand binding domains on dopamine transporters identified by peptide mapping. Mol Pharmacol 47:956-964.
15. Freed CR, Revay R, **Vaughan RA**, Kreik E, Uhl G, and Kuhar MJ (1995) Dopamine transporter immunoreactivity in rat brain. J Comp Neurol 359:340-349.
16. Revay R, **Vaughan R**, and Kuhar MJ (1996) Dopamine transporter immunohistochemistry in median eminence, amygdala and other areas. Synapse 22:93-99.

17. Nirenberg MJ, **Vaughan RA**, Uhl GR, Kuhar MJ, and Pickel VM (1996) The dopamine transporter is localized to dendritic and axonal plasma membranes of nigrostriatal dopaminergic neurons. J Neurosci 16:436-447.
18. **Vaughan RA**, Brown VL, McCoy MT. and Kuhar MJ (1996) Species- and brain-region specific dopamine transporters: immunological and glycosylation characteristics. J Neurochem 66:2146-2152.
19. **Vaughan RA** and Kuhar MJ (1996) Dopamine transporter ligand binding domains: structural and functional properties revealed by limited proteolysis. J Biol Chem 271:21672-21680.
20. Huff RA, **Vaughan RA** Kuhar M, and Uhl G (1997) Dopamine transporters: phorbol esters enhance phosphorylation and decrease V_{max} . J Neurochem 68:225-232.
21. Nirenberg MJ, **Vaughan RA**, Uhl GR, Kuhar MJ, and Pickel VM (1997) Immunogold localization of the dopamine transporter: An ultrastructural study of the rat ventral tegmental area. J Neurosci 17:4037-4044.
22. Nirenberg MJ, **Vaughan RA**, Uhl GR, Kuhar MJ, and Pickel VM (1997) The dopamine transporter: comparative ultrastructure of dopaminergic axons in the limbic and motor compartments of the nucleus accumbens. J Neurosci 17: 6899-6907
23. **Vaughan RA**, Huff RA, Uhl GR, and Kuhar MJ (1997) Protein kinase C-mediated phosphorylation and functional regulation of dopamine transporters in rat striatum. J Biol Chem 272:15541-15546.
24. Agoston GE, **Vaughan RA**, Lever J, Izenwasser S, Terry PD, and Newman AH (1997) A novel photoaffinity label for the dopamine transporter based on N-substituted-4'4'-difluoro-3a-(diphenylmethoxy)tropane. Bioorganic and Medicinal Chemistry Lett. 7:3027-3032.
25. Boja JW, Carroll FI, **Vaughan RA**, Kopajtic T, and Kuhar MJ (1998) Multiple binding sites for [125 I]RTI-121 and other cocaine analogs in rat frontal cerebral cortex. Synapse 30:9-17.
26. Kokoshka JM, **Vaughan RA**, Hanson GR and Fleckenstein AE (1998) Nature of methamphetamine-induced rapid and reversible changes in dopamine transporters. Eur J Pharmacol 361:269-275.
27. **Vaughan RA**, Agoston GE, Lever J, and Newman AH (1999) Differential binding of tropane-based photoaffinity ligands on the dopamine transporter. J Neurosci 19:630-636.
28. Garzon M, **Vaughan RA**, Uhl GR, Kuhar MJ, and Pickel VM (1999) Cholinergic axon terminals in the ventral tegmental area target a subpopulation of neurons expressing low levels of the dopamine transporter. J Comp Neurol 410:197-210.
29. Letchworth SR, Sexton T, **Vaughan RA**, Vrana K, Childers S, and Porrino L (1999) Chronic cocaine administration differentially regulates dopamine transporter mRNA and protein. J Neurochem 73:1982-1989.
30. Bauman AL, Apparsundaram S, Ramamoorthy S, Wadzinski BE, **Vaughan RA**, and Blakely RD (2000) Cocaine and antidepressant-sensitive biogenic amine transporters exist in regulated complexes with protein phosphatase 2A. J Neurosci 20:7571-7578.

31. Thompson AC, Zapata A, **Vaughan RA**, Justice JB, Sharpe LG, and Shippenberg T (2000) Kappa-opioid receptor activation regulates dopamine uptake and opposes the effects of cocaine. J Neurosci 20:9333-9340.
32. Dutta A, Fei X-S. **Vaughan RA**, Gaffaney JD, Wang N, Lever J, and Reith MEA (2001) Design, synthesis, and characterization of 4-[2-(diphenylmethoxy)ethyl]-1-benzyl piperidine, a novel dopamine transporter photoaffinity label. Life Sci 68:1839-1849.
33. **Vaughan RA**, Gaffaney JD, Wang N, Lever J, Reith MEA, and Dutta A (2001) Dual incorporation sites for photoaffinity ligands on the dopamine transporter implicate proximity of labeled domains. Mol Pharmacol 59:1157-1164.
34. Chen N, **Vaughan RA**, and Reith MEA (2001) The role of conserved tryptophan and acidic residues in the human dopamine transporter as characterized by site-directed mutagenesis. J Neurochem 77:1116-1127.
35. Foster J, Pananusorn B and **Vaughan RA** (2002) Dopamine transporters are phosphorylated on N-terminal serines in rat striatum. J Biol Chem 277:25178-25186
36. Foster J, Pananusorn B, Cervinski M, Holden HE and **Vaughan RA** (2003) Dopamine transporters are dephosphorylated in striatal homogenates and *in vitro* by protein phosphatase 1. Mol Brain Res 110:100-108.
37. Chagkutip J, **Vaughan RA**, Govitrapong P, Ebadi M (2003) 1-Methyl-4-phenylpyridinium-induced down-regulation of dopamine transporter function correlates with a reduction in dopamine transporter cell surface expression. Biochem Biophys Res Commun. 311:49-54.
38. Gaffaney JD and **Vaughan RA** (2004) Uptake inhibitors but not substrates induce protease resistance in extracellular loop two of the rat dopamine transporter. Mol Pharmacol 65:692-701.
39. Lever J, Zou MF, Parnas ML, Duval RA, Wirtz SE, Justice JB, **Vaughan RA**, and Newman AH (2005) Radioiodinated azide and isothiocyanate derivatives of cocaine for irreversible labeling of dopamine transporters: synthesis and covalent binding studies of [¹²⁵I]-MFZ-2-24 AND [¹²⁵I]-MFZ-3-37. Bioconjug Chem 16:644-649.
40. Gorentla BK and **Vaughan RA** (2005) Differential effects of dopamine and psychostimulant drugs on dopamine transporter phosphorylation and regulation. Neuropharmacology 49:759-768. (Special issue on neurotransmitter transporters.)
41. Cervinski MA, Foster, JD and **Vaughan RA** (2005) Psychostimulant substrates stimulate phosphorylation and down regulation of dopamine transporters by transport and protein kinase C dependent mechanisms. J Biol Chem 280:40442-40449.
42. Henry LK, Field JR, Adkins EM, Parnas ML, **Vaughan RA**, Newman AH, and Blakely RD (2006) Antidepressant Recognition by Serotonin Transporters: TMs I And III Interact To Establish High Affinity Citalopram Recognition. J Biol Chem 281:2012-2023.
43. Newman, AH, Cha JH, Cao J, Kopajtic T, Katz JL, Parnas ML, **Vaughan RA** and Lever JR (2006) Design and Synthesis of a Novel and High Affinity Photoaffinity Ligand for the Dopamine and Serotonin Transporters Based on 2β-Carbomethoxy-3β-Biphenyltropane. J Med Chem 49:6621-6625

44. **Vaughan RA**, Sakrikar DJ, Parnas, ML, Adkins, S, Foster, JD, Zou MF, Duval, R., Lever JR, Kulkarni, SS, and Newman AH (2007) Incorporation of the cocaine analog [¹²⁵I]RTI 82 in transmembrane domain six of the dopamine transporter. J Biol Chem 282:8915-8925.
45. Parnas ML, Zou MF, Duval, R, Lever JR, Newman AH, and **Vaughan RA** (2008) Labeling of dopamine transporter transmembrane domain 1 with the tropane ligand N-[4-(4-azido-3-[¹²⁵I]iodophenyl)butyl]-2β-carbomethoxy-3β-(4-chlorophenyl)tropane implicates proximity of cocaine and substrate active sites. Mol Pharmacol 73:1141-1150.
46. Foster JD, Adkins S, Lever, JR, and **Vaughan RA** (2008) Phorbol ester-induced trafficking-independent regulation and enhanced phosphorylation of the dopamine transporter associated with membrane rafts and cholesterol. J Neurochem 105:1683-1699.
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54. Speed N, Saunders C, Davis AR, Owens WA, Matthies HJ, Saadat S, Kennedy JP, **Vaughan RA**, Neve RL, Lindsley CW, Russo SJ, Daws LC, Niswender1 KD, Galli A (2011) Impaired Striatal Akt Signaling Disrupts Dopamine Homeostasis and Increases Feeding. PLoS One. 6:e25169
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56. Lapinsky DL, Yarravarapu N, Nolan TL, Surratt CK, Lever JR, Tomlinson M, **Vaughan RA**, and Deutsch HM (2012) Evolution of a Compact Photoprobe for the Dopamine Transporter Based on (±)-*threo*-Methylphenidate (Ritalin, Concerta). ACS Med Chem Lett 3:378-382.

57. Foster JD, Yang J-W, Moritz AE, Challa S, Smith MA, Holy M, Wilebski K, Sitte HH, and **Vaughan RA** (2012) Dopamine transporter phosphorylation site threonine 53 regulates substrate reuptake and amphetamine-stimulated efflux. J Biol Chem. 287:29702-29712.
58. Moritz AE, Foster JD, Gorentla, BK, Mazei-Robison MS, Yang JW, Sitte HH, Blakely RD and **Vaughan RA** (2013) Phosphorylation of dopamine transporter serine 7 modulates cocaine analog binding. J Biol Chem. 288:20-32
59. Gaffaney JD, Shetty M, Akula-Bala P, Henry LK, Foster JD and **Vaughan RA** (2014) Antagonist-induced conformational changes in dopamine transporter extracellular loop 2 involve residues in a potential salt bridge. Neurochemistry International, 73,16-26.
60. Dahal R, Akula Bala P, Sharma B, Krout D, Foster JD, Cha J-H, Cao J, Newman AH, Lever JR, **Vaughan RA** and Henry LK (2014) Computational and biochemical docking of the irreversible cocaine analog RTI 82 directly demonstrates ligand positioning in the dopamine transporter central substrate-binding site. J Biol Chem. 289:29712-29727. Cover article. Highlighted in ASBMB Today, 11/2014, p. 15
61. Kumar V, Yarravarapu N, Lapinsky DJ, Perley D, Felts B, Tomlinson MJ, **Vaughan RA**, Henry LK, Lever JR, Newman AH Novel Azido-Iodo Photoaffinity Ligands for the Serotonin Transporter Based on the Selective Serotonin Reuptake Inhibitor (S)-Citalopram. (2015) J Med Chem, 58:5609-5619.
62. Moritz, AE, Rastedt DE, Stanislawski DJ, Shetty M, Smith M, **Vaughan RA** and Foster JD (2015) Reciprocal phosphorylation and palmitoylation control dopamine transporter kinetics. In press, J Biol Chem.

INVITED ARTICLES AND BOOK CHAPTERS

1. Rutherford CL, **Vaughan RA**, Cloutier MJ, Naranan V, Brickey DA, and Ferris DK (1985) Compartmentation in *Dictyostelium*. Ann Rev of Microbiol 39:271-289.
2. **Vaughan R**, Pupillo M, Theibert A. Klein P, and Devreotes P (1986) Surface receptor mediated activation and adaptation of adenylate cyclase in *Dictyostelium discoideum*. NATO/ASI Workshop on Desensitization. Series H., Vol. 6. pp.15-22. (T. Konijn, ed.).
3. Lilly P, Klein P, Theibert A, **Vaughan R**, Pupillo M, Saxe C, Kimmel A, and Devreotes PN (1988) Receptor-G protein interactions in the development of *Dictyostelium*. Botanica Acta 101:123-127.
4. **Vaughan RA**, Johnson R, Caterina M, and Devreotes P (1989) Adaptation of chemoattractant elicited responses in *Dictyostelium discoideum*. NATO Conference on Sensing and Response, The Netherlands, Transducing Pathways: Activation and Desensitization. (T. Konijn, et al., Eds.).
5. Johnson R, Gundersen R, Lilly P, Pitt G, Pupillo M, Sun T, **Vaughan R**, and Devreotes P (1989) G-protein linked signal transduction systems control development in *Dictyostelium*. British Soc. Dev. Biol., St. Andrews, Scotland, Development (Supplement) 107:75-80.
6. Gundersen R, Johnson R, Sun T, Pupillo M, Lilly P, **Vaughan R**, and Devreotes P (1989) Reversible phosphorylation of G protein-coupled receptors controls cAMP oscillations in *Dictyostelium*. Theoretical Models for Cell to Cell Signaling. (A. Goldbeter, Ed.). Academic Press London, pp.477-486.

7. Pupillo M, Klein P, **Vaughan R**, Pitt G, Lilly P, Sun J, Devreotes P, Kumagagai A, and Firtel R (1989) cAMP receptor and G-protein Interactions control development in *Dictyostelium*. Cold Spring Harbor Symp. on Quant.Biol. Vol LII, 657-665.
8. Pitt GS, Gundersen RE, Lilly PJ, Pupillo MB, **Vaughan RA**, and Devreotes PN (1990) G Protein-linked signal transduction in aggregating *Dictyostelium*. Soc Gen Physiol Ser 45:125-131.
9. Boja JW, **Vaughan RA**, Patel A, Shaya E, and Kuhar MJ (1994) The Dopamine Transporter. Dopamine Receptors and Transporters. (H. Niznik, Ed.) Marcel Dekker, Inc., New York, pp. 611-644.
10. **Vaughan RA** (1998) GBR and Cocaine Photoaffinity Ligands as Probes for Dopamine Transporter Structure. Methods in Enzymology, Neurotransmitter Transporters. (S. Amara, Ed.). vol. 296, pp. 219-230.
11. Kuhar MJ, **Vaughan RA**, Uhl G, Cerruti C, Revay R, Freed C, Nirenberg M, and Pickel V. (1998) Localization of the dopamine transporter protein by microscopic histochemistry. In, "Catecholamines: Bridging basic science with clinical medicine." Adv Pharmacol (D. Goldstein, Ed.), vol. 42, pp. 168-170.
12. **Vaughan RA**, Huff RA, Uhl GR, and Kuhar MJ (1998) Phosphorylation of dopamine transporters and rapid adaptation to cocaine. In, "Catecholamines: Bridging basic science with clinical medicine." Adv Pharmacol (D. Goldstein, Ed.), vol. 42, pp. 1042-1045.
13. **Vaughan RA** (2000) Regulation of the dopamine transporters by phosphorylation and impact on cocaine action. Cerebral Signal Transduction: From First to Fourth Messengers (M.E.A. Reith, Ed.), Humana Press, Totowa, N.J. pp. 375-400.
14. Lowe MJ, Gaffaney JD and **Vaughan RA** (2002) Substrate recognition and interactions at the dopamine transporter. Receptor Biochemistry and Methodology Wiley Publishers, (David Sibley, Ed.). pp.161-177.
15. **Vaughan RA** (2004) Phosphorylation and Regulation of Psychostimulant-Sensitive Neurotransmitter Transporters. Perspectives in Pharmacology. J Pharmacol Exp Therap 310:1-7. (Cover Article).
16. **Vaughan RA**, Parnas ML, Gaffaney JD, Lowe MJ, Wirtz S., Pham A, Reed B, Dutta SM, Murray KK, and Justice JB (2005) Affinity labeling the dopamine transporter ligand binding site. J Neurosci Methods 143:33-40.
17. Sakrikar DS and **Vaughan RA** (2005) Norepinephrine transporter. XPharm database, Elsevier. D.Bylund, Ed.
18. Parnas ML and **Vaughan RA** (2005) Dopamine transporter. XPharm database, Elsevier. D. Bylund, Ed.
19. Foster JD, Cervinski MA, Gorentla B, and **Vaughan RA** (2006) Regulation of dopamine transporter by phosphorylation. Handb Exp Pharmacol 175:197-214 Michael Freissmuth, ed.

20. Parnas ML and **Vaughan RA** (2008) Molecular Structure and Organization of Dopamine Transporters. In “Dopamine Transporters: Chemistry, Biology, and Pharmacology” Wiley Series in Drug Discovery and Development (ed. S. Izenwasser and M. Trudell). pp. 73-95. (Cover article).
21. **Vaughan RA** and Foster JD (2013) Mechanisms of dopamine transporter regulation in normal and disease states. Trends Pharmacol Sci 34:489-496.
22. Foster JD, Rastedt D, ChallaSivaKanaka S, and **Vaughan RA** (2014) Analysis of Neurotransmitter Transporter Posttranslational Modifications: Phosphorylation and Palmitoylation. In press, Neuromethods Ed. H. Bonisch and H. Sitte.
23. Foster JD, Henry LK, and Vaughan RA and (2016) RTI 82 and ligand protein interactions. In “The Neuroscience of Cocaine: Mechanisms and Treatments” Academic Press, Ed. Victor R. Preedy. In preparation.

MANUSCRIPTS IN PREPARATION

1. ChallaSivaKanaka S., Sitte HH, Foster JD, **Vaughan RA** (2015) Psychostimulant substrates stimulate phosphorylation of dopamine transporter proline directed site threonine 53.
2. Rastedt D, **Vaughan RA**, Foster JD (2015) Multiple palmitoyl acyltransferases modify DAT palmitoylation. In preparation.
3. Zhen J, Moritz AE, Foster JD, Reith MEA, **Vaughan RA** (2015) Phosphorylation of dopamine transporter serine 13 drives amphetamine-stimulated DA efflux via complex interactions with intracellular domains. In preparation.
4. Oh, R., Moritz AE, Foster JD, Sitte H, **Vaughan RA**, Shippenberg TS, Ramamoorthy S., Kappa opioid regulation of dopamine uptake via ERK-dependent phosphorylation of dopamine transporter Threonine 53. (2015) In preparation.
5. Pramod AB, Dahal RA, Sharma B, Krout D, Foster JD, Zou M-F, Boatang C, Amy Hauck Newman AH, Lever JR, Henry LK*, and **Vaughan RA*** (2015) Adduction of the Photoactive Azide of Irreversible Cocaine Analog, [¹²⁵I] MFZ 2-24 Elucidates the Cocaine Binding Site in the Dopamine Transporter. *co-corresponding authors.
6. Singer BF, Guptaroy B, Austin CJ, Wohl I, **Vaughan RA**, Gnegy ME, Robinson TE, and Aragona BJ (2015) Individual Variation in Incentive Salience Attribution and Accumbens Dopamine Transporter Expression and Function. In review, J Neurosci

INVITED SEMINARS AND PRESENTATIONS

1. NIH Research Festival, Workshop on Recent Advances in Transporter Biology (1994) “Immunohistochemical Localization of the Rat Dopamine Transporter.” Bethesda, MD
2. Washington State University, Department of Biochemistry and Biophysics (1994) “Biochemistry and Molecular Biology of the Rat Dopamine Transporter.” Pullman, WA
3. University of North Texas Health Science Center, Department of Pharmacology (1996) “Phorbol-Ester Stimulated Phosphorylation of Dopamine Transporters and Proteolytic Analysis of Ligand Binding Domains.” Fort Worth, TX

4. Emory University, Department of Chemistry (1996) "Proteolytic Analysis of Dopamine Transporter Ligand Binding Domains." Atlanta, GA
5. Eighth International Catecholamine Symposium (1996) "Phosphorylation of Dopamine Transporters and Rapid Adaptation to Cocaine." Asilomar, CA
6. National Institute on Drug Abuse, Intramural Research Program Seminar Series (1997) "Structure-Function Analysis of Dopamine Transporters." Baltimore, MD
7. Meharry Medical College, Department of Pharmacology (1997) "Dopamine Transporter Structure-Function Properties: Antagonist Binding Domains and *In Vivo* Phosphorylation." Nashville, TN.
8. Oklahoma State University, Department of Pharmacology (1997) "Phosphorylation and Regulation of Dopamine Transporters." Tulsa, OK
9. University of North Dakota, Department of Biochemistry and Molecular Biology (1997) "Structure-Function Properties of the Rat Dopamine Transporter." Grand Forks, ND
10. University of Connecticut, Department of Pharmaceutical Science and Medicinal Chemistry (1998) "Dopamine Transporter Antagonist Binding Domains Identified by Peptide Mapping." Storrs, CT
11. University of North Dakota School of Medicine, Department of Anatomy (1999) "Structure, Function, and Anatomy of the Dopamine Transporter." Grand Forks, ND
12. University of North Dakota Medical School Retreat (2001) "Mapping the Dopamine Transporter Active Site with Irreversible Ligands" Grand Forks, ND
13. College on the Problems of Drug Dependence (2001) "Elucidation of dopamine transporter structure-function properties using irreversible ligands and peptide mapping." Scottsdale, AZ
14. Gordon Research Conference on Catecholamines (2001) "Regulation and Properties of Dopamine Transporter Phosphorylation." Proctor Academy, NH
15. LSU Health Sciences Center, Department of Pharmacology and Therapeutics (2001). "Phosphorylation and Regulation of Dopamine Transporters" Shreveport, LA
16. ND EPSCoR State Convention (2002) "Building a Competitive Research Program" Grand Forks, ND
17. Officials of the Office of National Drug Control Policy (2002) "Functional Regulation of Dopamine Transporters". University of North Dakota School of Medicine.
18. University of Kentucky College of Pharmacy (2002) "Regulation of Dopamine Transporter Activity by Phosphorylation" Lexington, KY.
19. University of North Dakota School of Medicine and Health Sciences Foundations of Biomedical Sciences, (2003) "Analysis of the cocaine binding site on the dopamine transporter using irreversible ligands" Grand Forks, ND

20. University of North Dakota School of Medicine and Health Sciences, Department of Biochemistry and Molecular Biology (2003) "Regulation of dopamine transporter phosphorylation and function by kinases, phosphatases, and psychostimulants" Grand Forks, ND
21. National Institute of Environmental Health Sciences, Laboratory of Signal Transduction (2004) Second messenger and psychostimulant dependent phosphorylation and regulation of dopamine transporters. Raleigh, NC.
22. Emory University Department of Chemistry (2004) Mapping the cocaine binding site on the dopamine transporter. Atlanta, GA.
23. University of Wisconsin Medical School, Neuroscience Series. (2005) "Phosphorylation and Trafficking of Dopamine Transporters". Madison, WI
24. National Institute on Drug Abuse Intramural Research Program Seminar Series (2005) "Affinity Labeling the Cocaine Binding Site on Dopamine Transporters". Baltimore, MD
25. Wayne State University, Cellular and Clinical Neurobiology Program (2005) "Molecular Mechanisms of Dopamine Transporter Phosphorylation and Regulation" Detroit, MI.
26. Fifteenth Neuropharmacology Conference: New Perspectives in Neurotransmitter Transporter Biology (2005) "Dopamine Transporter Phosphorylation and Trafficking" Washington D.C.
27. University of North Dakota Department of Anatomy and Cell Biology (2005) "Phosphorylation and Trafficking of Dopamine Transporters" Grand Forks, ND
28. University of Texas Medical Branch, Center for Addiction Research and Department of Pharmacology (2006) "Phosphorylation and Regulation of Dopamine Transporters" Galveston, TX
29. Department of Physiology and Biophysics, State University of New York (2006) Protein Kinase C Regulated Phosphorylation and Trafficking of Dopamine Transporters. Buffalo, NY.
30. University of North Dakota Faculty Lecture Series (2006) "The Dopamine Transporter: What's Regulating the Regulator?"
31. University of North Dakota Department of Anatomy and Cell Biology (2008) "DAT and Fat: Regulation of Dopamine Transport by Lipids" Grand Forks, ND
32. COBRE Symposium (2010) "Homeostatic Mechanisms in Regulation of Dopamine Transport". Grand Forks, ND
33. ASPET Symposium: Location, location, location: The role of membrane microdomains in dopamine transporter function and trafficking. (April 2012) "Modulation of dopamine transporter by phosphorylation and membrane sub-domain localization." San Diego CA
34. Dopamine transporter structure and function in drug abuse and disease. (February 2013) North Dakota State University Department of Chemistry. Fargo, ND
35. International Society for Neurochemistry Satellite Conference "Brain in Flux". (April 2013) "Complex control DAT functions by post-translational modifications" Cancun, Mexico.

36. Transmembrane Transporters in Health and Disease. (September 2013) “Regulation of Dopamine Transporter Phosphorylation and Function by the Peptidyl Prolyl Cis-Trans Isomerase Pin1” SFB35 Vienna, Austria

37. Regulation of dopamine transporter functions by membrane microdomains and post-translational modifications. (April 2014) McKnight Brain Institute, University of Florida, Gainesville, FL

MEETING ABSTRACTS AND PRESENTATIONS

1. Simantov. R, Lew R, Boja JW, Grigoriadis DE, Zaczek R, **Vaughan R**, and Kuhar MJ (1990) Dopamine transporter as a cocaine receptor: Pharmacological and biochemical studies. IUPHAR Satellite International Symposium on Presynaptic Receptors and Neuronal Transporters. Rouen, France.

2. Kuhar MJ, Boja JW, Carroll I, Simantov R, Lew R, **Vaughan R**, Cline E. Scheffel U (1991) Dopamine transporter as a cocaine receptor: recent molecular and imaging studies. International Meeting on Strategies for Studying CNS Active Compounds: Models, Screens and Clinical Syndromes. Crete, Greece.

3. Boja JW, Patel A, Carroll FI, Rahman MA, Philip A, Lewin AH, **Vaughan R**, Kopatjic TA, and Kuhar MJ (1991) [¹²⁵I]RTI-55: A high affinity ligand for the dopamine transporter. Society for Neuroscience, New Orleans, Louisiana.

4. Patel A, Boja JW, Lever J, Lew R, Simantov R, Carroll FI, Lewing AH, Philip A, Gao Y, **Vaughan R**, and Kuhar MJ (1991) [¹²⁵I]RTI-82: A high affinity iodinated photoaffinity ligand for the dopamine transporter. Society for Neuroscience, New Orleans, Louisiana.

5. Lew R, **Vaughan R**, Simantov R, and Kuhar MJ (1991) Comparison of the structural characteristics of the dopamine transporter in rat nucleus accumbens and striatum. College for the Prevention of Drug Dependence. Palm Beach, FL.

6. **Vaughan RA**, McCoy M, and Kuhar MJ (1992) Charge isoforms of dopamine transporters. Society for Neuroscience, Anaheim, CA.

7. Boja JW, Carrol FI, Wong D, Dannals R, Scheffel U, **Vaughan R**, Cline E, Patel A, and Kuhar MJ (1992) Dopamine transporter as a cocaine receptor: recent imaging and molecular studies. Behavioral Pharmacol 3:27-28.

8. Kuhar MJ, **Vaughan R**, Pilotte N, and Boja J. (1992) Dopamine Transporter: Molecular Properties and Recent Research. Catecholamine Symposium 1992.

9. Kuhar MJ, Lew R, **Vaughan R**, Patel A, and Boja J (1992) Dopamine Transporter: Recent research and Molecular Properties. Dopamine Symposium '92.

10. **Vaughan R**, Mitchell WM, Freed CR, Uhl G and Kuhar MJ (1993) Dopamine transporter antibodies. Society for Neuroscience, Washington, D.C.

11. Revay R, **Vaughan RA**, Freed C, Uhl G, and Kuhar MJ (1994) Dopamine transporter immunoreactivity in rat brain. Society for Neuroscience, Miami, FL.

12. **Vaughan RA** (1994) Photoaffinity-labeled ligand binding domains on dopamine transporters identified by peptide mapping. Society for Neuroscience, Miami, FL.

13. **Vaughan R**, Kreik E, Freed C, Revay R, Uhl G, and Kuhar M (1994) Dopamine transporter immunoreactivity in rat brain. Dopamine '94, Quebec City, Canada.
14. **Vaughan R**, Carroll FI, Boja J, Freed C, Uhl G, Scheffel U, Wong D, Kuhar M (1994) Neuroimaging Cocaine Binding Sites in Brain. NIH Research Festival.
15. **Vaughan RA**, McCoy MT, and Kuhar MJ (1995) Localization of dopamine transporter ligand binding domains to transmembrane segments. Society for Neuroscience, San Diego, CA.
16. McCoy MT, Brown VL, **Vaughan RA**, and Kuhar MJ (1995) Species- and brain-region specific dopamine transporters: Immunological and glycosylation characterization. Society for Neuroscience, San Diego, CA.
17. Huff RA, **Vaughan RA**, Kuhar MJ, and Uhl G (1995) Protein kinase activity modulates dopamine transporter function. Society for Neuroscience, San Diego, CA.
18. Nirenberg MJ, **RA Vaughan**, GR Uhl, MJ Kuhar, and VM Pickel. (1995) The dopamine transporter is prominently localized to plasma membranes of nigrostriatal dopaminergic neurons. Society for Neuroscience, San Diego, CA.
19. **Vaughan RA**, Huff RA, Uhl GR, and Kuhar MJ (1996) Phorbol ester-induced phosphorylation of dopamine transporters in rat striatum. Society for Neuroscience, Washington, D.C.
20. Huff RA, **Vaughan RA**, Kuhar MJ, and Uhl GR (1996) Enhancement of dopamine transporter phosphorylation by phorbol esters: parallels with phorbol-induced decreases in transport. Society for Neuroscience, Washington, D.C.
21. Nirenberg MJ, **Vaughan RA**, Uhl GR, Kuhar MJ, and Pickel VM (1996) The cocaine-sensitive dopamine transporter: ultrastructural immunogold localization in mesolimbic dopaminergic neurons. Society for Neuroscience, Washington, D.C.
22. Huff RA, **Vaughan RA**, Kuhar MJ, and Uhl GR (1996) Phorbol esters enhance dopamine transporter phosphorylation and decrease transport V_{max} . Eighth International Catecholamine Symposium, Asilomar, CA.
23. Nirenberg MJ. **Vaughan RA**, Uhl GR, Kuhar MJ, and Pickel VM (1996) Ultrastructural immunogold localization of the cocaine-sensitive dopamine transporter in mesolimbic dopaminergic neurons. Eighth International Catecholamine Symposium, Asilomar, CA.
24. **Vaughan R**, Huff RA, Uhl GR, and Kuhar MJ. (1996) Phorbol-ester induced phosphorylation of rat striatal dopamine transporters. NIH Research Festival, '96, Bethesda, MD.
25. **Vaughan R**, Huff R, Uhl G, and Kuhar M (1996) Phosphorylation of dopamine transporters in rat striatum. Experimental Biology '96, Washington, D.C.
26. Uhl GR, Huff RA, **Vaughan RA**, Kuhar MJ, Zhang L, McKin S, Weight FF, Yu YK, and Wang JB (1996) Dopamine transporter and μ opioid receptor phosphorylation and rapid functional alterations. College on the Problems of Drug Dependence, San Juan, Puerto Rico.

27. **Vaughan RA** and Uhl GR (1997) Protein kinase C stimulates dopamine transporter serine phosphorylation. Society for Neuroscience, New Orleans, LA.
28. Fleckenstein AE, Metzger RR, Wilkins DG, **Vaughan RA**, Gibb JW and Hanson GR (1997) methamphetamine and reactive oxygen species: Effects on dopamine transporter activity. Society for Neuroscience, New Orleans, LA.
29. Xu C, **Vaughan RA** and Reith MEA (1997) Dopamine transporters form dimers under non-reducing conditions. Society for Neuroscience, New Orleans, LA.
30. Fleckenstein AE, Kokoshka JM, Metzger RR, Wilkins DG, Gibb JW, Hanson GR, and **Vaughan RA** (1997) Rapid and reversible effects of methamphetamine on dopamine transporters. American College of Neuropsychopharmacology, Kamuela, Hawaii.
31. **Vaughan RA**, Huff RA, Uhl GR and Kuhar MJ (1997) Protein kinase C-mediated phosphorylation of dopamine transporters. FASEB Summer Research Conference on Transporters of amino acids, peptides and bioactive monoamines: Structural, functional and regulatory aspects. Copper Mountain, CO.
32. **Vaughan RA** and Kuhar MJ (1997). Binding domains on dopamine transporters for GBR and cocaine analog photoaffinity labels. FASEB Summer Research Conference on Transporters of amino acids, peptides and bioactive monoamines: Structural, functional and regulatory aspects. Copper Mountain, CO.
33. **Vaughan RA**, Huff RA, Uhl GR, and Kuhar MJ (1997) Protein kinase C-mediated phosphorylation of dopamine transporters and regulation of transport activity. Gordon Research Conference on Catecholamines. Andover, N.H.
34. **Vaughan RA**, Wang JB, Yu Y, Huff RA, and Uhl GR (1997) Phosphorylation of mu opiate receptor and dopamine transporter. College on the Problems of Drug Dependence. Nashville, TN.
35. Agoston GE, Newman AH, Izenwasser S, and **Vaughan R** (1997) A 3a-(diphenylmethoxy) tropane based photoaffinity label for the dopamine transporter. College on the Problems of Drug Dependence. Nashville, TN.
36. **Vaughan RA**, Agoston GE, Lever JR, and Newman AH (1998) Differential binding sites of tropane-based photoaffinity ligands on the dopamine transporter. Society for Neuroscience, Los Angeles, CA.
37. Fleckenstein AE, Kokoshka JM, **Vaughan RA**, Metzger RR, Gibb JW, and Hanson GR (1998) Selective and reversible effects of methamphetamine on dopamine transporters. Dopamine, '98 Strasbourg, France
38. Fleckenstein, AE, Kokoshka JM, **Vaughan RA**, Metzger RR, Gibb JW and Hanson GR (1998) Selective and reversible effects of methamphetamine on dopamine transporters. Experimental Biology, '98.
39. **Vaughan RA**, Wang N, Lever J, Reith M, and Dutta A (1999) Photoaffinity labeling of dopamine transporters with a novel 4-[2-(diphenylmethoxy)ethyl]-1-benzyl piperidine derivative. Society for Neuroscience, Miami, FL.

40. Shippenberg TS, Thompson AC, **Vaughan R**, Sharpe L, Justice J, Dersch C, and Rothman R (1999) Interaction of selective kappa opioid receptor agonists with the dopamine transporter. Gordon Research Conference on Catecholamines, Oxford, England.
41. Gaffaney JD, **Vaughan RA**, Reith, M.E.A. Reith and Dutta AK (2000) Dual incorporation of novel dopamine transporter photoaffinity ligand implicates proximity of labeled domains. Society for Neuroscience, New Orleans, LA.
42. **Vaughan RA**, and Pananusorn BP (2000) Dopamine transporters are phosphorylated primarily on the N-terminal tail. Society for Neuroscience, New Orleans, LA.
43. Chen N, **Vaughan RA**, and Reith MEA (2000) Mutational analysis of conserved acidic residues in the human dopamine transporter. Society for Neuroscience, New Orleans, LA.
44. **Vaughan RA** and Pananusorn BP (2001) Dephosphorylation of dopamine transporters by protein phosphatase 1. Society for Neuroscience, San Diego, CA.
45. Gaffaney JD, and **Vaughan RA** (2001) Monitoring conformational changes in the dopamine transporter by western blotting. Society for Neuroscience, San Diego, CA.
46. Reed B, Bhattacharya SH, Lowe MJ, Pham AT, **Vaughan RA**, Murray KK, Carroll FI and Justice JB (2001) Dopamine transporter transmembrane domain 4 is indicated as the site of incorporation of the tropane analogue photoaffinity label RTI-82. Society for Neuroscience, San Diego, CA.
47. Gaffaney JD and **Vaughan RA** Ligand-induced conformational changes in extracellular loop 2 of the dopamine transporter. (2001) Gordon Conference on Catecholamines, Proctor Academy, NH.
48. Cervinski M. and **Vaughan RA** (2002) Psychostimulant-induced phosphorylation of the rat dopamine transporter. Society for Neuroscience, Orlando, FL.
49. Foster JD, Blakely RD, and **Vaughan RA** (2002) Basal and Protein Kinase C-stimulated phosphorylation sites on striatal and recombinant dopamine transporters. Society for Neuroscience, Orlando, FL
50. Gaffaney JD, and **Vaughan RA** (2002) Ligand-induced conformational changes in EL2 of the dopamine transporter suggest differential mechanisms for substrate and antagonist binding. Society for Neuroscience, Orlando, FL.
51. Williams JM, **Vaughan RA** and Steketee JD (2002) Sensitization to cocaine and amphetamine alters plasmalemmal dopamine transporter levels within the medial prefrontal cortex. Society for Neuroscience, Orlando, FL
52. Pham AT, Gaffaney J, Granstrem O, Wirtz S, **Vaughan RA**, Lever J, and Justice J (2002) Enzymatic and Chemical Cleavage of [¹²⁵I]RTI-82 Labeled 3XFLAG6XHISHDAT. Society for Neuroscience, Orlando, FL
53. Foster JD, Blakely RD, and **Vaughan RA** (2003) Mutational Analysis of Potential Phosphorylation Sites in the N-terminal Tail of the Rat Dopamine Transporter. Society for Neuroscience, New Orleans, LA.

54. Gaffaney JD and **Vaughan RA** (2003) Differential Endoprotease Asp-N Sensitivity and Functional Characterization of the N-terminal Region of DAT Extracellular Loop 2. Society for Neuroscience, New Orleans, LA.
55. Cervinski M, and **Vaughan RA** (2003) Psychostimulant-induced phosphorylation of the rat dopamine transporter. Society for Neuroscience, New Orleans, LA.
56. Parnas ML, Gaffaney JD, Newman AH, Zou MF, Lever JR, and **Vaughan RA** (2003) Irreversible Cocaine Analogs Map to Multiple Sites on the Dopamine Transporter, Society for Neuroscience, New Orleans, LA.
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