

# RAYMOND GEORGE BOOTH

## CURRICULUM VITAE [ABBREVIATED]

### RESEARCH SYNOPSIS

#### Drug Discovery and Development for Neuropsychiatric Disorders

The laboratory is on track to an Investigational New Drug (IND) Application regarding drug(s) that target brain serotonin receptors for treatment of neuropsychiatric disorders and neurological disorders, including, autism spectrum disorder, fragile X syndrome (most common known genetic cause of autism), epilepsy, and substance use disorder. Development continues to proceed under the auspices of the National Institutes of Health (NIH) and Boston-based pharmaceutical industry partners, including the Northeastern start-up biotech, Seropeutics. In addition to structure-based design and synthesis of new chemical entities, laboratory drug discovery and development technology includes computational chemistry and molecular modeling, molecular neuropharmacology, pharmacokinetics, and preclinical in vivo behavioral methodologies for development of drug candidates.



### EDUCATION/TRAINING

INSTITUTION AND LOCATION	DEGREE	Year	FIELD OF STUDY
Northeastern University, Boston, Massachusetts	BS	06/1983	Clinical Pharmacy
University of California at San Francisco	PhD	01/1989	Pharmaceutical Chemistry
Harvard Medical School/McLean Hospital, Boston, MA	Postdoc	07/1990	Neuroscience/Psychiatry

### PROFESSIONAL EXPERIENCE

- 1990-1997: Assistant Professor, Medicinal Chemistry, University of North Carolina at Chapel Hill
- 1997-2005: Associate Professor (tenured), Medicinal Chemistry (School of Pharmacy) and Toxicology (School of Medicine), University of North Carolina at Chapel Hill
- 2005-2007: Associate Professor (tenured), Medicinal Chemistry, University of Florida, Gainesville, FL
- 2007-current: Professor (tenured), Medicinal Chemistry (College of Pharmacy) and Pharmacology & Therapeutics (College of Medicine), University of Florida; from 2012 to current, my status at UF is Adjunct Professor in the Department of Medicinal Chemistry;
- 2012-current: Professor (tenured), Department of Pharmaceutical Sciences (Bouvé College of Health Sciences), Interim Chair, Jan-Jun 2017
- Professor (tenured) Department of Chemistry & Chemical Biology (College of Science), and, Center for Drug Discovery (Associate Director), Northeastern University, Boston;

## RESEARCH FUNDING

### *Active*

Source: NIH (National Institute on Drug Abuse, NIDA)  
 Number: T32 DA050564  
 Project Name: Training Program on Medications Development for Substance Use Disorder  
 Role: MPI  
 Funding Period: 07/01/2022–06/30/2027  
 Total Costs: \$3,007,370

Source: NIH (National Institute on Drug Abuse, NIDA)  
 Number: RO1 DA047130  
 Project Name: *Delineating the role of serotonin 5-HT2 receptors in opioid use disorders: Development of novel 5-HT2 modulators with translational studies in rodents and primates*  
 Role: MPI (contact)  
 Funding Period: 10/01/18-11/30/25 (NCE)  
 Total Costs: \$4,019,296.00

### *Pending*

Source: NIH (National Institute of Neurological Disorders and Stroke)  
 Number: 1R01NS134995-01A1  
 Project Name: Development of Serotonin 5-HT1 Receptor Subtype-Selective Agonists to Treat Epilepsy and Anxiety Using a Mouse Model of Fragile X Syndrome  
 Role: MPI (contact)  
 Funding Period: 07/01/2024-06/30/2029  
 Total Costs: \$3,788,909

Source: NIH (National Institute of Neurological Disorders and Stroke)  
 Number: 1R01NS134995; **Percentile Score: 15**  
 Project Name: Development of Serotonin 5-HT1 Receptor Subtype-Selective Agonists to Treat Epilepsy and Anxiety Using a Mouse Model of Fragile X Syndrome  
 Role: MPI (contact)  
 Funding Period: 12/01/2023-11/30/2028  
 Total Costs: \$3,804,104

Source: Department of Defense Congressionally Directed Medical Research Programs Peer Reviewed Medical Research Program  
 Number: 13943864; AR230143  
 Project Name: Development of serotonin 5-HT1 receptor subtype-selective agonists to treat epilepsy and anxiety in autism spectrum disorder  
 Role: MPI (contact)  
 Funding Period: 01/31/2024-01/30/2027  
 Total Costs: \$828,625

### *Completed*

Source: Department of Defense Congressionally Directed Medical Research Programs Peer Reviewed Medical Research Program  
 Number: W81XWH-17-1-0322  
 Project Name: *Development of Novel Drugs Targeting Serotonin Receptors to Treat Motor, Social, Cognitive, and Sensory Domains of Autism Spectrum Disorder Using Mouse Models*  
 Role: MPI (contact)  
 Funding Period: 09/01/2017-08/31/2022

Total costs: \$923,384

Source: Department of Defense Congressionally Directed Medical Research Programs Peer Reviewed Medical Research Program  
 Number: W81XWH-15-1-0247  
 Project Name: *Translation of Novel Serotonin 5-HT<sub>7</sub> Agonist Drug Candidates in Rodent Models of Fragile X Syndrome*  
 Role: MPI (contact)  
 Funding Period: 09/01/2015-08/31/2017  
 Total Costs: \$309,000

Source: NIH (National Institute on Drug Abuse, NIDA)  
 Number: RO1 DA030989  
 Project Name: *Functionally-Selective Serotonin 5HT<sub>2</sub> Drugs for Amphetamines Abuse/Disorders*  
 Role: MPI (contact)  
 Funding Period: 09/01/12-08/31/17  
 Total Costs: \$1,802,016

Source: NIH (National Institute on Drug Abuse, NIDA)  
 Number: T32 DA07312  
 Project Name: Training Program in Medications Development for Drugs of Abuse  
 Role: co-Principal Investigator (Makriyannis, PI)  
 Funding Period: 07/01/1999 - 06/30/2014  
 Total Costs: \$2,396,693.00

Source: NIH (National Institute on Mental Health, NIMH)  
 Number: R01MH081193  
 Project Name: *Serotonin 5HT<sub>2C</sub> Agonist Ligands with 5HT<sub>2A/B</sub> Antagonist Activity*  
 Role: Principal Investigator  
 Funding Period: 04/01/08-02/28/14  
 Total Costs: \$1,841,323

Source: NIH (Rapid Access to Interventional Development, RAID)  
 Number: R01MH081193-W1  
 Project Name: *Novel Anxiolytic Agents Targeting Serotonin 5HT<sub>2A/2C</sub> Receptors*  
 Role: Principal Investigator  
 Funding Period: 10/01/09-02/28/14  
 Total Costs: \$73,250

Source: NIH (NIDA)  
 Number: R01DA023928  
 Project Name: *Novel 5HT<sub>2C</sub> Agonist Drugs with 5HT<sub>2A</sub> Antagonist Activity for Cocaine Addiction*  
 Role: Principal Investigator  
 Funding Period: 09/15/07-09/14/12  
 Total Costs: \$1,475,130

Source: NIH (NIDA)  
 Number: R01DA023928-03S109  
 Project Name: *International Collaborative Research to Develop Cocaine Abuse Pharmacotherapy*  
 Role: Principal Investigator  
 Funding Period: 08/01/09-09/14/12  
 Total Costs: \$91,563

Source: University of Florida Research Foundation Commercialization Fund (Project 100721)  
 Project Name: *Commercialization of Drug Candidate for Schizophrenia*  
 Role: Principal Investigator  
 Funding Period: 03/01/12-09/01/12  
 Total Costs: \$25,311

Source/Number: NIH (Mental Health, NIMH) R01MH068655  
 Project Name: *Functional Probes for Brain Histamine H<sub>1</sub> Receptors*  
 Role: Principal Investigator  
 Funding Period: 04/01/04-03/31/09  
 Total Costs: \$1,055,113

Source/Number: UF Opportunity Fund 65651  
 Project Name: *Preclinical Development of Drugs for Obesity and Cocaine Addiction*  
 Role: Principal Investigator  
 Funding Period: 07/01/07-06/30/09  
 Total Costs: \$81,550

Source/Number: NIH (Neurological Disorders and Stroke, NINDS) R-29-NS35216  
 Project Name: *Novel Sigma Ligands in Neurodegeneration*  
 Role: Principal Investigator  
 Funding Period: 04/01/97-03/31/02  
 Total Costs: \$502,855

Source/Number: Pharmacy Foundation of North Carolina 6-68379-4501  
 Project Name: *Evaluation of NMDA receptor-active compounds using primary glial cell cultures*  
 Role: Principal Investigator  
 Funding Period: 07/01/00-06/30/02  
 Total Costs: \$20,000

Source/Number: Otsuka Pharmaceuticals 6-68347-4281  
 Project Name: *Biochemical Effects of Novel Quinoline Compounds at Brain Sigma Receptors*  
 Role: Co-Principal Investigator (Richard B. Mailman, Co-PI)  
 Funding Period: 09/01/98-12/31/01  
 Total Costs: \$97,0000

Source/Number: Environmental Protection Agency  
 Project Name: *Neurotoxicity of Polychlorinated Biphenyls*  
 Role: Principal Investigator  
 Funding Period: 08/01/97-09/31/99  
 Total Costs: \$45,000

Source/Number: NIMH RO1 MH34006  
 Project Name: *Pharmacology of Dopamine Receptors in CNS*  
 Role: Investigator (Ross Baldessarini, PI)  
 Funding Period: 07/01/95-06/30/99  
 Total Costs: \$1,200,000

Source/Number: Pharmacy Foundation of North Carolina  
 Project Name: *Putative Sigma-3 Receptors in Mammalian Brain*  
 Role: Principal Investigator  
 Funding Period: 01/01/95-12/31/97  
 Total Costs: \$10,000

Source/Number: Environmental Protection Agency 4D-1882  
Project Name: *Polychlorinated Biphenyls Effects on Brain Dopamine Synthesis*  
Role: Principal Investigator  
Funding Period: 08/01/94-07/31/96  
Total Costs: \$5,000

Source/Number: UNC-CH Faculty Research Grant 5-44786  
Project Name: *Adenosine and Sigma Receptor-Mediated Regulation Dopamine Synthesis*  
Role: Principal Investigator  
Funding Period: 07/01/93-06/30/95  
Total Costs: \$2,970

Source/Number: Otsuka Pharmaceuticals 6-68347  
Project Name: *Novel Quinoline Inhibitors of Tyrosine Hydroxylase*  
Role: Co-Principal Investigator (Richard B. Mailman, Co-PI)  
Funding Period: 07/01/93-06/30/97  
Total Costs: \$24,000

Source/Number: NIMH RO1 MH40537  
Project Name: *A Novel Molecular Site for Antidopaminergic Action*  
Role: Investigator (Richard B. Mailman, PI)  
Funding Period: 04/01/93-03/31/97  
Total Costs: \$1,291,981

Source/Number: UNC-CH Faculty Research Grant 5-44339  
Project Name: *Development of Autoreceptor Agonists*  
Role: Principal Investigator  
Funding Period: 12/01/90-06/30/93  
Total Costs: \$2,550

Source/Number: UNC-CH Junior Faculty Development Award-6-69410  
Project Name: *Characterization of Autoreceptors in Mammalian Forebrain*  
Role: Principal Investigator  
Funding Period: 01/01/91-12/31/92  
Total Costs: \$3,000

Source/Number: NIH BSRG RR05967  
Funding Period: 10/01/91  
Total Costs: \$5,800 (instrument purchase)

Source/Number: NIMH MH14275-15  
Project Name: *Neuropharmacology of Presynaptic Dopamine Agonists*  
Role: Investigator (W.H. Morse, PI)  
Funding Period: 11/01/88-08/01/90  
Total Costs: \$39,700

**TEACHING (Northeastern University)****GRADUATE CURRICULUM****PHSC5450 Contemporary Approaches to Drug Design**

3 semester hours, required; ~10 students  
2023-current

**PHSC6222 Chemistry and Biology of Drugs of Abuse**

2 semester hours, required; ~20-25 students  
2016-current (Course Coordinator)

**PHSC5400 Principles of Drug Design**

3 semester hours, required; ~20-25 students  
2016-current (Course Coordinator 2023-current)

**PMCL 6262 Receptor Pharmacology**

2 semester hours, required; ~25 students  
2014-current

**PHSC 5100 Concepts in Pharmaceutical Science**

Drug Metabolism and Drug Design and Development  
2 semester hours, required; ~50-75 students  
2013-current

**CHEM 5676 Bioorganic and Medicinal Chemistry**

3 semester hours, required; ~15 students  
2014-current (Course Coordinator)

**CHEM 5904 and 8504 Seminar and Colloquium in Chemistry**

1 semester hour, required, ~40 students  
2021-2022 (Course Co-Coordinator)

**CHEM 5620 Protein Chemistry**

3 semester hours, required; ~25 students  
2016-2020

**CHEM 4456 Organic Chemistry III**

2 semester hour, elective; ~20 students  
2015 – 2020.

**PROFESSIONAL (PHARM.D.) AND UNDERGRADUATE CURRICULA****HONR 3310-12: Translational Medicine (fall semester)**

1 semester hour, elective; 1~5 students  
2014 – 2021

**HLTH 1555 Honors Special Topics in Healthcare: Drug Discovery and Delivery**

4 semester hours, ~12 students; elective  
2012-2014, 2015 (course coordinator and lecturer)

**GRADUATE STUDENT TRAINEES*****PHD STUDENT TRAINEES***

**Roberto Aponte**, Ph.D., Pharmacology, 2029 (expected)

**Otto Holbrook**, Ph.D., Medicinal Chemistry and Drug Discovery, 2027 (expected)

**Erin Sullivan**, Ph.D., Pharmaceutics and Drug Delivery, 2026 (expected)

**Brittany Brems**, Ph.D., Medicinal Chemistry and Drug Discovery, 2026 (expected)

**Bryce Johnson**, Ph.D., Pharmacology, 2024 (expected)

**Nicholas Fragola**, Ph.D., 2024.

Dissertation title: Molecular Pharmacology of Novel 2-Aminotetralins Targeting Alpha2-Adrenergic G Protein-Coupled Receptors

First position: Avania medical technology contract research organization, Boston, MA.

**Ryan McGlynn**, Ph.D., Pharmacology, 2023.

Dissertation title: Insights Into the Molecular Pharmacology of Novel Aminotetralins and Known Drug Candidates at Serotonin 5-HT1-type Receptors

First position: Regulatory Affairs Fellow, Vertex Pharmaceuticals, Boston.

**Austen Casey**, Ph.D., Medicinal Chemistry and Drug Discovery, 2021

Dissertation title: Molecular and behavioral pharmacology of 2-aminotetralins targeting serotonin G protein-coupled receptors

First position: Postdoctoral Fellow, Stanford University School of Medicine

**Charles Perry**, Ph.D., Medicinal Chemistry and Drug Discovery, 2018

Thesis title: Drug design targeting the serotonin 5-HT7 G protein-coupled receptor

First position: Postdoctoral research fellow, Vanderbilt University Center for Drug Discovery

**Daniel Felsing**, Ph.D, Medicinal Chemistry, 2016.

Thesis title: Drug discovery targeting serotonin G protein-coupled receptors to treat neuropsychiatric disorders.

Position: Scientist, Neurocrine Biosciences, San Diego, CA.

**Krishnakanth Kondabolu**, Ph.D, Medicinal Chemistry 2013.

Thesis title: In vitro and in vivo pharmacology of novel phenylaminotetralin (PAT) analogs at serotonin 5-HT2 receptors: Development of drugs for neuropsychiatric disorders.

First position: Postdoctoral Research Fellow, Dept. Pharmacology, Boston University

**Sean Travers**, Ph.D., Medicinal Chemistry, 2011

Thesis title: Characterization of the molecular determinants for class A G protein-coupled receptors:

Drug discovery targeting the histamine H1 receptor

First position: Technical Research Advisor Rigaku Raman Technologies

**Zhuming Sun**, Ph.D., Medicinal Chemistry, 2010.

Thesis title: "Novel phenylaminotetralin (PAT) analogs: Multifunctional serotonin 5-HT2 receptor drugs for neuropsychiatric disorders".

First position: Research Scientist, Novartis, Shanghai, China

**Dawn Covington**, M.S. Medicinal Chemistry, 2007.

Thesis title: Ligand design targeting histamine H1 G protein-coupled receptor dimers

First position: Staff scientist, GSK, Research Triangle Park, NC.

**Ola Maher Ghoneim**, Ph.D., Medicinal Chemistry, 2006

Thesis title: "Synthesis, analytical, and molecular modeling studies of novel aminophenyltetralin ligands to characterize human histamine and serotonin receptor signaling"

Position: Professor, College of Pharmacy and Health Sciences, Western New England University, Springfield, MA

**Nader Moniri**, Ph.D., Medicinal Chemistry, 2004

Thesis Title: "Histamine H<sub>1</sub> receptor multifunctional signaling characterized using novel tetrahydro-(naphthalene and benzocycloheptane) ligands"

Position: Associate Dean of Research, Mercer University, Atlanta, GA

**Jacqueline Legere**, Ph.D., Medicinal Chemistry, 2004

Thesis Title: "Synthesis and pharmacological activity of 2-dimethylamino-5-(6)-phenyl-1,2,3,4-tetrahydronaphthalenes as novel ligands for the human histamine H<sub>1</sub> receptor"

Position: Director of Biology Research Core, Genzyme, Framingham, MA

**Neepa Choksi**, Ph.D., Medicinal Chemistry, 1999

Thesis Title: "Neuropharmacological Characterization of Brain Receptors Recognized by 1-Phenyl-3-aminotetralins"

First position: Senior Research Scientist, Integrated Laboratory Systems Inc., Research Triangle Park, NC

**Constance E. Owens**, Ph.D., Medicinal Chemistry, 1997

Thesis title: "A Novel Brain Receptor System Linked to Modulation of Catecholamine Synthesis"

Current position: Senior Research Scientist, Endacea, Research Triangle Park, North Carolina

**Anwar Hussain**, Ph.D., Medicinal Chemistry, 1995

Thesis Title: "The Role of Adenosine A<sub>2</sub> Receptors in Stimulation of Brain Dopamine Synthesis"

Last known position: Senior Research Scientist, Bristol-Myers-Squibb, New Brunswick, New Jersey.

### ***MS GRADUATE STUDENT TRAINEES***

**Reikly Reiser**, MS Medicinal Chemistry and Drug Discovery, 2025 (expected)

**Zachary Protich**, MS Medicinal Chemistry, 2018

**Sisy Hu**, M.S., Pharmaceutical Sciences 2017

**Yiming Chen**, MS., Pharmaceutical Sciences 2017

**Hima Patel** M.S., Pharmaceutical Sciences 2017

**Eliza Miller**, M.S., Chemistry and Chemical Biology, 2016

**Yajun Lin**, M.S., Pharmaceutical Sciences 2016

**Yan Zhou**, M.S., Pharmaceutical Sciences 2016

**Laura Purcell**, M.S., Pharmaceutical Sciences 2016

**Daoyang Chen**, M.S., Pharmaceutical Sciences 2016

**Ngyn Tran**, M.S., Pharmaceutical Sciences, 2015

**Rinkal Soni**, M.S., Pharmaceutical Sciences, 2015

**Bryce Suchomel**, M.S., Pharmaceutical Sciences, 2015

**Wanying Zhu**, M.S., Pharmaceutical Sciences, 2014



**UNDERGRADUATE RESEARCH TRAINEES**

**Millenia Waite**, B.S., Biochemistry, 2023

**Alex Yuen**, B.S., Biochemistry, 2023

**Nicholas Farina**, B.S. Pharmaceutical Sciences, 2023

**Jason Gladstone**, B.S., Biochemistry (expected, 2025)

**Dominic Tadio**, BS Biochemistry, 2022

**Anthony Messina**, BS Biochemistry, 2022

**Bassel Abdelbaki**, BS Chemical Engineering 2021

**Christopher Chang**, B.S., Chemistry, 2019 (funded by Northeastern Matz Research Scholarship Award)

**George (Jia Xing) Guo**, B.S., Biochemistry, 2018

**Jessica Mecklosky**, B.S., Neuroscience, 2016.

**Daniel Felsing**, B.S., Chemistry, 2011

**Sean Wimberly**, Pharm.D., Pharmacy 2011

**Roberto Campillo**, Pharm.D., Pharmacy 2007

**Russell Moore**, Pharm.D., Pharmacy 2006

**Christopher Smelick**, B.S., Chemistry 2006

**Tammy Bristow**, B.S., Chemistry, 2004

**Alexandra Calves**; B.S., Pharmacy, 1998

**Kathrinn Fitzpatrick**, B.S., Pharmacy, 1997

**Brenda Aske**, B.S., Pharmacy, 1996

**Kelly Hendricks**; B.S., Pharmacy, 1996

**R. Donald Harvey**; Pharm.D., 1994

**Jonathan Ducar**; B.S., Pharmacy, 1992

**POSTDOCTORAL & RESEARCH ASSISTANT PROFESSOR TRAINEES**

**Munmun Mukherjee**, Ph.D. (2017-current)

**Shan Zhu**, Ph.D. (2014-2016)

**Yue Liu**, Ph.D. (2013-2016); current position is research scientist at Pfizer Inc., Cambridge, MA

**Rajender Vemula**, Ph.D. (2012-2016); current position is research scientist at Harvard University Department of Chemistry, Cambridge, MA.

**Tania Cordova-Sintjago**, Ph.D. (2010-2016); current position is faculty (teaching and research) at Santa Fe College, Gainesville FL

**Dario Ambrosini**, Ph.D. (2012-2015); current position is postdoctoral researcher at University of Milan Department of Chemistry, Milan, Italy.

**Clinton Canal**, Ph.D. (Postdoctoral: 2010-2012; Research Assistant Professor: 2012-2016); current position is Assistant Professor (tenure track) Mercer University, Atlanta, GA.

**Myong Sang Kim**, Ph.D. (Postdoctoral: 2009-2012); current position is research scientist at Firebird Biomolecular Sciences, Alachua, FL 32615-9465, USA.

**Nancy Villa**, Ph.D. (2009-2012); current position is research scientist at University of Florida Department of Oncology, Gainesville, FL

**Jean-Claude Nzimulinda**, Ph.D. (2010-2011); current position is staff pharmacist in Louisville, KY.

**Rajeev Sakhuja**, Ph.D. (2009-2011); current position is faculty (teaching, research) at Birla Institute of Technology & Science, Pilani, Rajasthan 333031, India.

**Adam Vincek**, Ph.D (2008-2011); current position is research scientist in Center for Drug Discover at Mount Sinai School of Medicine, New York, NY 10029, USA.

**Li Fang**, Ph.D. (2006-2009); current position is research scientist at University of Florida College of Medicine Department of Nephrology

**Andrzej Wilczynski**, Ph.D (2006-2008); current position is research scientist at Perkin Elmer, Boston, MA

**Sashi Sivendran**, Ph.D. (2006-2008); current position is Dow Chemicals, Andover, MA

**Yingsu Huang**, Ph.D. (2004-2005)

**Aaron Meng**, M.D. (1999-2001)

**Bonita L. Blake**, D.V.M., Ph.D. (1997-1999)

## TEACHING AWARDS

- 2006:** BEST PROFESSOR AWARD, University of North Carolina at Chapel Hill School of Pharmacy, Class of 2006
- 2005:** ACADEMIC EXCELLENCE AWARD IN TEACHING  
Nominated by Chair of Medicinal Chemistry – award to be announced July 2005
- 2003:** BEST PROFESSOR AWARD, University of North Carolina at Chapel Hill School of Pharmacy, Class of 2005
- 2002:** BEST PROFESSOR AWARD, University of North Carolina at Chapel Hill School of Pharmacy, Class of 2004
- 2001:** BEST PROFESSOR AWARD, University of North Carolina at Chapel Hill School of Pharmacy Class, of 2003
- 1999:** BEST PROFESSOR AWARD, University of North Carolina at Chapel Hill School of Pharmacy, Class of 2000
- 1998:** DISTINGUISHED TEACHING AWARD FOR POST-BACCALAUREATE INSTRUCTION, *Nominee*, University of North Carolina at Chapel Hill
- 1997:** BEST PROFESSOR AWARD, *Honorable Mention*, University of North Carolina at Chapel Hill School of Pharmacy, Class of 1999

## SERVICE

### National Institutes of Health

- 2023 Appointed to the Programmatic Panel for Autism Research Program, Congressionally Directed Medical Research Programs.
- 2022 NIDA-Career Development and Education Review Panel ZDA1 SKM-D (02)
- 2022 NIDA-Career Development and Education Review Panel ZDA1 MXS-T (M3) S NIDA K Conflict SEP
- 2022 NIDA Extramural Program for Clinical Researchers ZDA1 PXN-F (31)
- 2018-2022 NIDA Extramural Program for Clinical Researchers ZDA1 PXN-F (31)
- 2018-2019 NIDDK: Early-Stage Pharmacological Validation of Novel Targets ZRG1 EMNR R(56)
- 2017-2021 NIDA Board of Scientific Counselors
- 2017 Molecular, Cellular, and Developmental Neuroscience MDCN-F Study Section Ad hoc
- 2017 NIDA: New Molecular Entities to Treat Substance Use Disorder ZDA1 JXR-D (06), Chair
- 2016-2020 Emerging Technologies and Training in Neurosciences (ETTN) Study Section C-11
- 2016 NIDA: Medications Development Program Projects for Substance-Related Disorders ZDA1 JXR-D (09)
- 2010 Molecular, Cellular, and Developmental Neuroscience MDCN-F Ad hoc
- 2008 NIDA Development of Therapeutic Agents Special Emphasis Panel Ad hoc

2008 NIMH Conference to Advance Mental Health Research Special Emphasis Panel Ad hoc

2005-2008 Brain Disorders and Clinical Neuroscience Study Section F-11

2006 Brain Disorders and Clinical Neuroscience Study Section K-15 Ad

1997 Fundamental Neurosciences Study Section

1996-2000 Brain Disorders and Clinical Neuroscience Study Section K-15

1992-1996 Technology and Applied Sciences Study Section

### **Environmental Protection Agency**

Chemical Mixtures in Environmental Health Panel (1997-2000)

Exploratory Research on Environmental Neurotoxicants Panel (1997-2000)

### **Editorial Board**

Journal of Addiction and Prevention (2013-2018)

Obesity Insights (2008-2018)

Medicinal Chemistry: Current Research (2010-2018)

Pharmacology (2010-2016)

### **Northeastern University**

School of Pharmacy Executive Committee (2018-2023)

Pharmaceutical Sciences Interim Chair (2017-2018)

Pharmaceutical Sciences Graduate Committee (2016-current)

Pharmaceutical Sciences Senior Hires (2) Pharmacology Recruitment Committee 2013-2017 (Chair)

Pharmaceutical Sciences Chair Recruitment Committee 2014-2016 (Chair)

University Grievance Committee 2014-15 (member)

Chemistry and Chemical Biology Computational Chemistry Senior Hire Recruitment 2013-14 (Member)

Center for Drug Discovery Senior Hires Recruitment Committee 2012- (co-Chair)

School of Pharmacy Assessment Committee 2012 – (Member)

Bouvé College of Health Sciences Dean's Leadership Team 2013 – (Member)

Northeastern University Committee for Research Policy Oversight 2013- (Member)

Northeastern University Research Awards Administration Advisory Committee 2013- (Member)

**CONSULTING ACTIVITY**

Gowling LLP, Toronto, Canada (2022-current)

Paul Hastings LLP, New York, NY (2021-current)

Sterne, Kessler, Goldstein, Fox, LLP; Washington DC (2007-2013)

Johnson and Johnson Pharmaceutical Research and Development (2008-2010)

Patterson, Belknap, Webb & Tyler, LLP; NYC (2004-2005)

Pitts, Hugenschmidt & Devereux, PA; Asheville, NC (1998-2000)

GlaxoSmithKline, Research Triangle Park, NC (1992-99)

**CURRENT LICENSURE** Registered Pharmacist: Massachusetts #19004; California #PL-038684

**INVITED ORAL PRESENTATIONS**

D<sub>2</sub>-Autoreceptor-Mediated Inhibition of Dopamine Synthesis in Brain. Department of Pharmacology and Experimental Therapeutics, School of Medicine, Boston University, October 16, 1990

Presynaptic Modulation of Brain Dopamine Synthesis. Department of Medicinal Chemistry, School of Pharmacy, University of North Carolina at Chapel Hill, November 1, 1990.

Stimulation of Brain Dopamine Synthesis by Sigma Ligands. Department of Medicinal Chemistry, School of Pharmacy, Medical College of Virginia, Richmond, VA, February 15, 1991

Effects of Novel Dopamine Agonists on Striatal Dopamine Synthesis. Biological Sciences Research Center, School of Medicine University of North Carolina at Chapel Hill, March 15, 1991.

Regulation of Brain Catecholamine Synthesis. Department of Neuropharmacology, Molecular Devices Corporation Menlo Park, CA, Sept. 11, 1992.

Mechanisms of Dopamine Cell Death. Neuroscience Department, Amgen Inc. Thousand Oaks, CA, October 2, 1992

Introduction to Pharmacology. Department of Medicinal Chemistry, Glaxo Pharmaceutical Research, Research Triangle Park, NC, June 2-11, 1992.

Receptor-Mediated Regulation of Dopamine Synthesis. Division of Pharmaceutics, School of Pharmacy, University of North Carolina at Chapel Hill, Nov. 12, 1992.

Principles of Pharmacology with Applications for Medicinal Chemistry. Department of Medicinal Chemistry, Glaxo Pharmaceutical Research, Research Triangle Park, NC, April 19-30, 1993.

A Novel Sigma Receptor Modulates Brain Dopamine Synthesis. Program in Neurobiology, School of Medicine, University of North Carolina at Chapel Hill, March 31, 1994.

Discovery of a Novel Sigma Receptor in Mammalian Brain. Division of Pharmaceutics, School of Pharmacy, University of North Carolina at Chapel Hill, February 1, 1996

Characterization of a Novel Brain Sigma Receptor. University of the Pacific, School of Pharmacy, Stockton, CA, March 22, 1996.

Neuromodulatory Adenosine A<sub>2</sub> receptors. Curriculum in Neurobiology, School of Medicine, University of North Carolina at Chapel Hill, February, 19, 1997.

Environmental Agents Linked to Neurotoxicity and Parkinson's Disease. Environmental Protection Agency, Research Triangle Park, North Carolina, December 11, 1997

Polychlorinated Biphenyl Compounds Inhibit Brain Dopamine Synthesis. Environmental Protection Agency, Research Triangle Park, North Carolina, November 5, 1998

Phenylaminotetralins as Novel Histamine H<sub>1</sub> Ligands. Department of Pharmacochimistry, Vrije (Free) University, Amsterdam, The Netherlands; March 9, 1999.

Novel Phenylaminotetralins Activate Neuromodulatory H<sub>1</sub> Receptors to Stimulate Brain Dopamine Synthesis. Department of Pharmacochimistry, Vrije (Free) University, Amsterdam, The Netherlands; April 11, 2000.

Molecular Mechanisms Regulating Brain Neurotransmitter Synthesis. Cogent Neurosciences Corporation, Durham, North Carolina, September 8, 2000.

Medicinal Chemical Probes Useful to Characterize H<sub>1</sub> Dimer Expression. Department of Pharmacochimistry, Vrije (Free) University, Amsterdam, The Netherlands; March 29, 2001.

Functional Heterogeneity of Histamine H<sub>1</sub> Receptors. Presented at the European Medicinal Chemistry Society Meeting, Noordwijkerhout, The Netherlands; May 7-11, 2003.

Ligand-directed multifunctional signaling of histamine H<sub>1</sub> and related G protein-coupled receptors. Histamine Research Society, Cologne, Germany, April 27-May 2, 2004.

Ligand Functional Selectivity at G Protein-Coupled Receptors: Impact on Compound Selection in Drug Discovery. Gordon Research Conference on Molecular Pharmacology, Barga, Italy, May 8-13, 2005.

Novel Ligands Stabilize Stereo-Selective Conformations of the H<sub>1</sub> Receptor: Functionally-Selective Modulation of Intracellular Signaling Pathways. Histamine Research Society, Delphi, Greece, May 10-14, 2006.

Molecular Determinants of Ligand-Directed Gq versus Gs Signaling for the Histamine H<sub>1</sub> Receptor. Histamine Research Society, Florence, Italy, May 9-13, 2007.

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