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: 10/01/19-11/30/25 (NCE)
Total Costs: $4,019,296.00

Pending

Source: NIH (National Institute of Neurological Disorders and Stroke)
Number: 1R01NS142421-01
Project Name: Probing Activation of Serotonin 5-HT1 Receptor Subtypes to Treat Epilepsy and Anxiety Using a Mouse Model of Fragile X Syndrome
Role: MPI (contact)
Funding Period: 07/01/2025-06/30/2030
Total Costs: $3,788,909

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-HT7 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 5HT2 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 $5HT_{2C}$ Agonist Ligands with $5HT_{2A/B}$ 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 $5HT_{2A/2C}$ Receptors*
Role: Principal Investigator
Funding Period: 10/01/09-02/28/14
Total Costs: $73,250

Source: NIH (NIDA)
Number: R01DA023928
Project Name: *Novel 5HT2C Agonist Drugs with 5HT2A 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_1 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_1 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_1 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 Reseach 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_2 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

2204 DOD Congressionally Directed Medical Research Programs, Appointed to the Programmatic Panel

2023 Autism Research Program Grants Reivewer, DOD 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_2-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 MedicineUniversity of North Carolina at Chapel Hill, March 15, 1991.

Regulation of Brain Catecholamine Synthesis. Department of Neuropharmacology, Molecular Devices CorporationMenlo 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_2 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

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

Phenylaminotetralins as Novel Histamine H_1 Ligands. Department of Pharmacochemistry, Vrije (Free) University, Amsterdam, The Netherlands; March 9, 1999.

Novel Phenylaminotetralins Activate Neuromodulatory H_1 Receptors to Stimulate Brain Dopamine Synthesis. Department of Pharmacochemistry, 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_1 Dimer Expression. Department of Pharmacochemistry, Vrije (Free) University, Amsterdam, The Netherlands; March 29, 2001.

Functional Heterogeneity of Histamine H_1 Receptors. Presented at the European Medicinal Chemistry Society Meeting, Noordwijkerhout, The Netherlands; May 7-11, 2003.

Ligand-directed multifunctional signaling of histamine H_1 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_1 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_1 Receptor. Histamine Research Society, Florence, Italy, May 9-13, 2007.

GPCR Conformations that Activate Phospholipase C vs Adenylyl Cyclase: Stereoselective Stabilization of Histamine H_1 Signaling by Novel Ligands. University of Camerino Medicinal Chemistry Symposium, Camerino, Italy, September 9-13, 2007.

Histamine H_1 Receptor Mutagenesis Studies to Characterize Molecular Determinants for Ligand Activation. Department of Pharmacochemistry, Vrije (Free) University, Amsterdam, The Netherlands; March 13, 2008

New Drug Candidates for Treating Obesity and Neuropsychiatric Disorders. Health Care Ventures. Cambridge, MA, March 20, 2008

Novel Drugs Targeting Serotonin $5HT_{2A/C}$ Receptors: Antipsychotics Devoid of Weight-Gain Effects. Department of Psychiatry, Harvard Medical School and McLean Psychiatric Hospital, Belmont, MA, April 14, 2008.

Drug Discovery Targeting Brain Serotonin $5HT_2$ G Protein-Coupled Receptors: Antiobesity and Antipsychotic Pharmacotherapy. Conference on New Methods in Drug Research, Limassol, Cyprus, May 11 – 14, 2008.

Transmembrane Helix Position 5.48 Involvement in the Dimer Interface of Domain-Swapped GPCRs. 27th Symposium on Trends in Drug Research, Noordwijkerhout, The Netherlands, May 3-7, 2009.

Novel serotonin 5HT2C agonist drugs with 5HT2A/2B inverse agonism for drug addiction. National Institute of Drug Abuse Binational Research Collaboration on Drug Abuse and Addiction. Washington, DC. October 22-23, 2009.

Functionally-Selective Serotonin 5-HT_2 GPCR Drugs: 5-HT_{2C} agonists with 5-$HT_{2A/2B}$ inverse agonist activity for neuropsychiatric disorders. 28th Camerino-Cyprus-Noordwijkerhout International Medicinal Chemistry Symposium. Camerino, Italy, May 16-20, 2010.

Drug Development Targeting Serotonin $5HT_{2A/2C}$ Receptors: Pharmacotherapy for Neuropsychiatric Disorders Without Weight-Gain. University of Florida, College of Medicine, Department of Pharmacology and Therapeutics, October 19, 2010.

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