RAYMOND GEORGE BOOTH

CURRICULUM VITAE

RESEARCH SYNOPSIS:

Drug Discovery and Development for Neuropsychiatric Disorders

The laboratory is on track to an Investigational New Drug (IND) Application regarding novel drug(s) that target brain serotonin receptors for treatment of neuropsychiatric disorders, including, autism spectrum disorder, obsessive-compulsive disorders (binge eating, attention deficit-hyperactivity disorder [ADHD], addiction) and diseases involving cognition impairment (schizophrenia, dementias, psychoses). Development will proceed under the auspices of the National Institutes of Health (NIH) and Boston-based pharmaceutical industry partners. 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 to treat neuropsychiatric disorders.

EDUCATION

1988-90 NIH Postdoctoral Fellow (Psychiatry and Neuroscience)
HARVARD MEDICAL SCHOOL and MCLEAN HOSPITAL
Boston, Massachusetts

1983-88 Ph.D. (Medicinal/Pharmaceutical Chemistry)
UNIVERSITY OF CALIFORNIA at SAN FRANCISCO
San Francisco, California

1978-83 B.S. (Pharmacy)
NORTHEASTERN UNIVERSITY
Boston, Massachusetts

PROFESSIONAL EXPERIENCE

2012- Professor, Department of Pharmaceutical Sciences (interim Chair, 2017-current), Center for Drug Discovery (Associate Director), Department of Chemistry & Chemical Biology, Northeastern University, Boston.

2007-2013 Professor, Department of Medicinal Chemistry (College of Pharmacy), and, Department of Pharmacology & Therapeutics (College of Medicine), University of Florida
Current: courtesy appointment in the Department of Medicinal Chemistry

2005-2007 Associate Professor, Department of Medicinal Chemistry, College of Pharmacy, University of Florida

1997-2005 Associate Professor, Division of Medicinal Chemistry (School of Pharmacy), and, Division of Toxicology (School of Medicine), University of North Carolina at Chapel Hill

1990-1997 Assistant Professor, Division of Medicinal Chemistry, School of Pharmacy, University of North Carolina at Chapel Hill

RESEARCH

Active funding

Source: Department of Defense Congressionally Directed Medical Research Programs Peer Reviewed Medical Research Program
Number: PR160095
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 with Dr. Clint Canal
Funding Period: 09/01/2017-08/31/2019
Total costs: $591,890

Source: Department of Defense Congressionally Directed Medical Research Programs Peer Reviewed Medical Research Program
Number: PR141869
Project Name: *Translation of Novel Serotonin 5-HT7 Agonist Drug Candidates in Rodent Models of Fragile X Syndrome*
Role: MPI with Dr. Clint Canal
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

Completed funding

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

CHEM 5676 Bio-organic and Medicinal Chemistry
3 semester hours, elective; 15 students
2014-current (Course Coordinator)

PHSC 6300 Seminar in Drug Discovery
1 semester hour, required; 12 students
2014-current (Course Coordinator)

PHSC 5100 Concepts in Pharmaceutical Science
Drug Metabolism and Drug Design and Development
2 semester hours, required; 75 students
2013-current

PMCL 6262 Receptor Pharmacology
2 semester hours, required; 25 students
2014-current

CHEM 5620 Protein Chemistry
3 semester hours, elective; 25 students
2016-current

PHSC 6222: Chemistry and Biology of Drugs of Abuse
2 semester hours, elective; 20 students
2013-current

PHSC 5934 Research in Pharmaceutical Science (MS level lab course)
2 semester hours, elective, 5 students
2013-current

CHEM 4456 Organic Chemistry III
2 semester hour, elective; 20 students
2015 – 2016 (3 lecture hours)

PROFESSIONAL (PHARM.D.) AND UNDERGRADUATE CURRICULA

HLTH 1555 Honors Special Topics in Healthcare: Drug Discovery and Delivery
4 semester hours, 12 students; elective
2012-2014, 2015 (course coordinator and lecturer)

HONR 3310-12: Approaches to Drug Therapy in the US.
1 semester hour, elective; 15 students
2014 – current

GRADUATE STUDENT TRAINEES

CURRENT GRADUATE STUDENT TRAINEES

Austen Casey, Ph.D., Medicinal Chemistry, 2020 (expected)

Kirin Gada, Ph.D., Pharmacology, 2020 (expected)

Charles Perry, Ph.D., Medicinal Chemistry, 2018 (expected)

FORMER GRADUATE STUDENT TRAINEES

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

Daniel Felsing, Ph.D, Medicinal Chemistry, 2016.
Thesis title: Drug discovery targeting serotonin G protein-coupled receptors to treat neuropsychiatric disorders.
Current position: Postdoctoral research fellow, Virginia Commonwealth University, Department of Biochemistry and Biophysics

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.
Current 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

Current 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".
Current position: Research Scientist, Novartis, Shanghai, China

Dawn Covington, M.S. Medicinal Chemistry (non-thesis), 2007.

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"
Current position: Assistant Professor (teaching, research, service), Department of Medicinal Chemistry, St. Joseph College, Hartford, Connecticut

Nader Moniri, Ph.D., Medicinal Chemistry, 2004
Thesis Title: "Histamine H_1 receptor multifunctional signaling characterized using novel tetrahydro-(naphthalene and benzocycloheptane) ligands"
Current position: Associate Professo (teaching, research, service)r, Medicinal Chemistry, 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"
Current 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"
Current 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 , M.S., 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.

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); current position is Research Assistant Professor at Northeastern University Department of Pharmaceutical Sciences and Center for Drug Discovery, Boston, MA

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)

UNDERGRADUATE and MS RESEARCH TRAINEES

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

Christopher Chang, B.S., Chemistry and Chemical Biology (expected, 2018)

Jessica Mecklosky, B.S. Neuroscience, 2016.

Daniel Felsing, B.S., Chemistry, 2011

Sean Wimberly, Pharm.D., 2011

Roberto Campillo, Pharm.D., 2007

Russell Moore, Pharm.D. 2006

Christopher Smelick, B.S. 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

THESIS DISSERTATION COMMITTEES

Northeastern University

Chandrashekhar Honrao Ph.D., Pharmaceutical Sciences (Drug Discovery/Medicinal Chemistry), 2016 (expected); Committee Member

Anisha Korde, Ph.D., Pharmaceutical Sciences (Medicinal Chemistry), 2016 (expected), Committee Member

Shashank Kulkarni, Ph.D., Pharmaceutical Sciences (Medicinal Chemistry), 2016 (expected), Committee Member

Pooja Naresh Sabhachandani, Ph.D., Pharmaceutical Sciences (Pharmaceutics) 2016 (expected), Committee Member

Abhijit Kulkarni, Ph.D., Pharmaceutical Sciences (Medicinal Chemistry), 2016 (expected), Committee Member

Mohammed Baradwan, Ph.D., Pharmaceutical Sciences (Drug Discovery/Medicinal Chemistry), 2018 (expected); Committee Member.

Michael Johnson, Ph.D., Pharmaceutical Sciences (Drug Discovery/Medicinal Chemistry), 2014; Committee Member.

University of Florida

Ebrahim Hossein Ghazvini Zadeh, Ph.D., Chemistry, 2015; Committee Member

Harald Messer, Ph.D., Interdisciplinary Program in Biomedical Science, 2015 (expected), Committee

Zheng Zheng, Ph.D., Chemistry, 2014 (expected), Committee Member

James Kasper, Ph.D., Pharmacodynamics, 2012 (expected), Committee Member

Wenjen Li, Ph.D, Medicinal Chemistry, 2011, Committee Member

Jongwoo Park, Ph.D., Chemistry, 2011, Committee Member

Bin Song, Ph.D., Computer Information Science & Engineering, 2010, Committee Member

Jason Kwan, Ph.D., Medicinal Chemistry, 2010, Committee Member

Bettina Proneth, Ph.D., Medicinal Chemistry, 2007

James Sacco, Ph.D., Medicinal Chemistry, 2006

Joshua Thomas, Ph.D., Medicinal Chemistry, 2006

Susruta Majumdar, Ph.D, Medicinal Chemistry, 2006

University of North Carolina at Chapel Hill

Richard Durham, Ph.D., Medicinal Chemistry, 2005

Erin Heinzen, Ph.D., Pharmaceutics Division: Drug Delivery and Disposition, 2004

Yolanda Taylor, M.S., 2001 (Biochemistry)

Erhen Bucholtz, Ph.D., Medicinal Chemistry, 1998
Brian Hoffman, Ph.D., Medicinal Chemistry, 1998
Daphne Da, M.S., Pharmaceutics Division: Drug Delivery and Disposition, 1998
Merril Miller, Ph.D., Medicinal Chemistry, 1996
Andrew Myers, Ph.D., Medicinal Chemistry, 1995
Jin Sung Cho, Ph.D., Medicinal Chemistry, 1995
Ke Chen, Ph.D., 1995
Lynne Canne, Ph.D. Medicinal Chemistry, 1995
Leping Lee, Ph.D., Medicinal Chemistry, 1994
Bruce Burnham, Ph.D., Medicinal Chemistry, 1994
Debra Minor, Ph.D., Medicinal Chemistry, 1994
Christopher Waller, Ph.D., Medicinal Chemistry, 1993

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

NIDA Board of Scientific Counselors (2014 - current).

K25 Award Mentor for Dr. Anna Sromek's project titled, Dextromorphinan Medications for Treating Opioid Addiction (2014-current)

ETTN-M 11 B: Drug Discovery for Aging, Neuropsychiatric and Neurologic Disorders (2012 - current)

EMNR-R (56): PAR Panel NIDDK Translational Research *Ad hoc* (2014)
Emerging Technologies and Training in Neurosciences C-11 (2009 - 2012)
NIA Translational Research in Aging ZAG1 ZIJ-1 B *Ad hoc* (December, 2011)
NIDA Medications Development Program Projects for Substance-Related Disorders (October, 2011)
NIDA New Molecular Entities to Treat Substance Use Disorders, Chairman (May, 2011)
NIDA Clinical Research Training Program *Ad hoc* (March: 2009, 2010, 2011, 2012; 2013; 2014)
Molecular, Cellular, and Developmental Neuroscience MDCN-F *Ad hoc* (February, 2010)
NIDA Development of Therapeutic Agents Special Emphasis Panel *Ad hoc* (December, 2008)
NIMH Conference to Advance Mental Health Research Special Emphasis Panel *Ad hoc* (October, 2008)
Brain Disorders and Clinical Neuroscience Study Section F-11 (2005-2008)
Brain Disorders and Clinical Neuroscience Study Section K-15 *Ad hoc* (March, 2006)
Fundamental Neurosciences Study Section, *Ad hoc* (1997)
Brain Disorders and Clinical Neuroscience Study Section K-15 (1996-2000)
Technology and Applied Sciences Study Section (1992-1996)

Environmental Protection Agency
Chemical Mixtures in Environmental Health Panel (1997-2000)
Exploratory Research on Environmental Neurotoxicants Panel (1997-2000)

Editorial Board
Obesity Insights (2008-current)
Medicinal Chemistry: Current Research (2010-current)
Medicinal Chemistry (open access) (2012-current)
(ISRN) Pharmacology (2010-current)
Journal of Addiction and Prevention (2013-current)

Northeastern University
Pharmaceutical Sciences Interim Chair (2017-current)
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

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.

Drug Development Targeting Serotonin $5HT_{2A/2C}$ Receptors: Pharmacotherapy for Neuropsychiatric Disorders Without Weight-Gain. Northeastern University Department of Pharmaceutical Sciences, April 21, 2011.

Novel Serotonin 5-HT2 Receptor Modulators Demonstrate In Vivo Efficacy for Psychoses. 29th Camerino-Cyprus-Noordwijkerhout International Medicinal Chemistry Symposium., Limassol, Cyprus, October 2-5, 2011.

Novel serotonin 5HT2 drugs for cocaine addiction. National Institute of Drug Abuse Binational Research Collaboration on Drug Abuse and Addiction. The Hague, Netherlands, October 11-14, 2011.

Development of Serotonin $5HT_2$ Modulators to Treat Psychoses and Addiction. University of Florida Department of Psychiatry, November 17, 2011.

Integrating Medicinal Chemistry, Pharmacology, and Behavioral Research Toward Novel Serotonin 5-HT2-based Pharmacotherapy for Neuropsychiatric Disorders. Lowenthal Symposium Keynote Speaker. Virginia Commonwealth University/Medical College of Virginia School of Pharmacy, May 24, 2012.

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Published International Patents Pending for New Chemical Entities and Therapeutic Use

PCT/US15/31523

"Serotonin Receptor Targeting Compounds and Methods"

Abstract: This invention relates to, in part, compositions and methods that are useful for the treatment of various diseases, including those linked to serotonin receptor binding, including, for example, neuropsychiatric diseases or disorders. Accordingly, the present invention provides for compositions and methods that agonize or antagonize one or more serotonin receptors and which find use in the treatment of various neuropsychiatric diseases or disorders including, without limitation, autism spectrum disorder (ASD) or associated symptoms.

Filed: May 19, 2015

Assignee: Northeastern University

Inventor: Raymond G Booth

Patent number: 9024071

"Therapeutic compounds"

Abstract: The invention relates to protein binding interacting/binding compounds and methods of identifying and using them. The invention further relates to pharmaceutical compositions and methods for treating serotonin and/or RSK disorders, including diseases and disorders mediated by GPCRs and/or RSKs.

Type: Grant

Filed: May 5, 2010

Issued: May 5, 2015

Assignee: University of Florida Research Foundation, Inc.

Inventor: Raymond G. Booth

Application number: 20140155490

“Therapeutic compounds”

Abstract: The invention relates to protein binding interacting/binding compounds and methods of identifying and using them. The invention further relates to pharmaceutical compositions and methods for treating serotonin disorders, including diseases and disorders mediated by GPCRs.

Type: Application

Filed: November 19, 2013

Issued: June 5, 2014

Assignee: University of Florida Research Foundation, Inc.

Inventor: Raymond G. Booth

Application number: 20120149693

“Therapeutic compounds”

Abstract: The invention relates to protein binding interacting/binding compounds and methods of identifying and using them. The invention further relates to pharmaceutical compositions and methods for treating serotonin and/or RSK disorders, including diseases and disorders mediated by GPCRs and/or RSKs.

Type: Application

Filed: May 5, 2010

Issued: June 14, 2012

Assignee: University of Florida Research Foundation, Inc.

Inventor: Raymond G. Booth

Application number: 20100305212

“Therapeutic compounds”

Abstract: The invention relates to protein binding interacting/binding compounds and methods of identifying and using them. The invention further relates to pharmaceutical compositions and methods for treating serotonin disorders, including diseases and disorders mediated by GPCRs.

Type: Application

Filed: June 13, 2008

Issued: December 2, 2010

Assignee: University of Florida Research Foundation, Inc.

Inventor: Raymond G. Booth

Therapeutic compounds and methods of use

Application number: 20100227934

Abstract: The invention relates to protein binding interacting/binding compounds and methods of identifying and using them. The invention further relates to pharmaceutical compositions and methods for treating serotonin disorders, including diseases and disorders mediated by GPCRs.

Type: Application

Filed: June 13, 2008

Issued: September 9, 2010

Assignee: University of Florida Research Foundation, Inc

Inventor: Raymond G. Booth