CURRICULUM VITAE

HEIDI ELIZABETH HAMM, Ph.D.

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DATE AND PLACE OF BIRTH

August 26, l950, Loma Linda, California

RESEARCH INTERESTS

Structure and function of GTP binding proteins
Molecular mechanisms of signal transduction
Photoreceptors and visual transduction
Regulatory mechanisms of GTPases
Cellular and molecular neurobiology
G protein regulation of secretion
Mathematical modeling of signaling networks

EDUCATION

1980 - 1983:	University of Wisconsin-Madison, Postdoctoral Traineeship (Advisor: M. Deric Bownds, Ph.D.)
1976 - 1980:	University of Texas-Austin, Ph.D. Zoology, Feb. l980. (Advisor: Michael Menaker, Ph.D.)
1974 - 1976:	University of Florence, Italy, Biology.
1969 - 1973:	Atlantic Union College, Lancaster, Massachusetts, B.A., Foreign Language, June, l973.

RESEARCH AND PROFESSIONAL EXPERIENCE

2012 – present	Aileen M. Lange and Annie Mary Lyle Chair in Cardiovascular Research, Professor of Pharmacology, Vanderbilt University Medical Center.
2000 – 2014	Professor and Chair, Department of Pharmacology, Vanderbilt University Medical Center.

2000 – 2012	Earl W. Sutherland, Jr., Professor of Pharmacology, Vanderbilt University Medical Center.
2006 – present:	Professor, Department of Orthopaedics and Rehabilitation, Vanderbilt University Medical Center.
2001 – present:	Professor, Department of Ophthalmology and Visual Sciences, Vanderbilt University Medical Center.
1996 - 2000:	Professor, Northwestern University Institute for Neuroscience Departments of Molecular Pharmacology and Biological Chemistry and Ophthalmology, Northwestern University School of Medicine.
1994 - 1996:	Professor, Department of Physiology and Biophysics, University of Illinois at Chicago College of Medicine.
1990 - 1994:	Associate Professor, Department of Physiology and Biophysics, University of Illinois at Chicago College of Medicine.
1990 - 1994:	Professore Straordinario, Universita di Sassari, Sassari, Italy.
1984 - 1990:	Assistant Professor, Department of Physiology and Biophysics, University of Illinois at Chicago College of Medicine.
1983 - 1984:	Assistant Professor, Department of Visual Science, School of Optometry, Indiana University.
1980 - 1983:	Postdoctoral research, Institute of Biophysics and Molecular Biology, University of Wisconsin, Madison, WI.
1976 - 1980:	Thesis research, Department of Zoology, University of Texas at Austin.

HONORS

2015 Robert R. Ruffolo Career Achievement Award in Pharmacology given by the American Society for Pharmacology and Experimental Therapeutics (ASPET).

Ariens Award, Dutch Pharmacological Society (NVF), Ariens Society Annual Meeting, Lunteren, The Netherlands, 2012.

Aileen M. Lange and Annie Mary Lyle Chair in Cardiovascular Research, 2012-present.

Fellow, American Association for the Advancement of Science, 2011.

2011 Women to Watch, Nashville Medical News and Nashville Health Care Council.

Earl W. Sutherland, Jr. Chair, Department of Pharmacology, Vanderbilt University Medical Center, 2000-2012.

Stanley Cohen Award *"For Research Bringing Diverse Disciplines, such as Chemistry or Physics, to Solving Biology's Most Important Fundamental Problems"* Outstanding Contributions to Research Awards, Vanderbilt University 2003.

Grable Investigator, 2003 Distinguished Investigator Award, NARSAD.

Lee and Robert Peterson Distinguished Investigator Award, National Alliance for Research in Schizophrenia and Depression, 1998.

Faculty of the Year, University of Illinois College of Medicine, 1996.

Robert H. Mitchel University Scholar, University of Illinois, 1995.

Glaxo Cardiovascular Discovery Award, 1989-1991.

National Science Foundation Research Opportunities for Women Career Development Award, 1987-1989.

DISTINGUISHED LECTURESHIPS

Keynote Address, Gordon Research Seminar on Phosphorylation and G Protein Mediated Signaling Networks, University of New England, June 2, 2018.

2018 John R. Murlin Lecture at the University of Rochester, May 31, 2018

Plenary Lecture at Oak Ridge Biology and Soft Matter Users Group Meeting, August 14, 2013.

Colloquium celebrating the 50th anniversary of the article "Allosteric proteins and cellular control systems" by Jacques Monod, Jean-Pierre Changeux, and François Jacob in the *Journal of Molecular Biology.* May 14, 2013, Pasteur Institute, Paris, France

Spemann lecturer at the "International Symposium – Signaling and Sorting", April 10 – 12, 2013 in Freiburg/Breisgau, Germany.

Plenary Lecturer, TSBMB (Taiwan Society of Biochemistry and Molecular Biology), Taiwan, Nov. 22-24, 2012.

Featured Speaker for the Heartland Undergraduate Biochemistry Forum (HUB) on November 10, 2012, Kansas City, Kansas.

Keynote Lecturer, South American Spring Symposium in Signal Transduction and Molecular

Medicine, Bariloche, Argentina, Nov. 4-8, 2012

28th Ariens Lecture, Figon Dutch Medicines Days, Lunteren, Netherlands. Oct. 1-3, 2012

ASBMB Grad/Postdoc Trainee Keynote Lecture, "Composing a life" April 20, 2012, San Diego.

Keynote speaker for the 50th Annual MIKI (Minnesota, Iowa, Kansas and Illinois) Medicinal Chemistry Meeting, April 13-15, 2012, Iowa City, IA.

Keynote Speaker, EPHAR Symposium on Molecular Pharmacology of G protein coupled receptors and signalling partners, Istanbul Turkey, June 6-7, 2011.

PABMB Plenary Lecturer, Chilean Society for Biochemistry and Molecular Biology. Termas de Chillan, Chile, September 28 - October 1, 2010.

Hyman Niznik Memorial Keynote Lecture, Great Lakes G Protein-Coupled Receptor Retreat, London, Ontario, 2007.

Keynote Lecture, European Conference on Hormones and Cell Regulation, GPCR-complexes and GPCR complexity. Mont Sainte Odile (Alsace), France, 2007.

Keynote Speaker, 2007 FASEB Summer Research Conferences, Proteases in Hemostasis and Vascular Biology, Indian Wells, California, 2007.

Newmark Award Lecture in Biochemistry. "How do receptors catalyze G protein activation?" University of Kansas, Lawrence, Kansas, October 8, 2007.

Harland G. Wood Memorial Lecturer, Case Western University, Cleveland Ohio, May 2003.

Fritz Lipmann Memorial Lectureship "*In recognition of Outstanding Research Contributions*" presented 92nd Annual Meeting ASBMB, Orlando Florida April 2001.

Fudderman Memorial Lecture, Department of Ophthalmology, University of Washington, Seattle, Washington, 1995.

Eli Lilly Lecture, Department of Biochemistry, Michigan State University, East Lansing, Michigan, 1995.

PROFESSIONAL RESPONSIBILITIES

Member, Panel on Early Translational Research Needs in Blood Science Sponsored by the Division of Blood Diseases and Resources, NHLBI. Sept 11, 2017

Member, MIST Study Section Ad Hoc, Oct 2017.

Member, External Review Panel (ERP) for the Translational Research Centers in Thrombotic and Hemostatic Disorders (TRC-THD) Program, NHLBI, 2013-2017.

Member, Scientific Advisory Board, Center of Advanced European Studies and Research, Max Planck Society, 2009-2014

Board of Directors, Keystone Symposia on Molecular and Cellular Biology, 2011-2017

Member, Nominating Committee and Globalization Committee, Keystone Symposia on Molecular and Cellular Biology, 2011-2016

Member, Advisory Council, Center for Scientific Review, 2011-2012

Member, Review Committee, NIH New Innovator Award, 2010

Member, Scientific Advisory Board, Keystone Symposia on Molecular and Cellular Biology, 2008-2017

Peer Review Advisory Committee, National Institutes of Health, 2007-2011

Member, Federation of American Societies for Experimental Biology, Science Policy Committee Peer Review Subcommittee, 2006-2010

Board Advisor, Federation of American Societies for Experimental Biology, Excellence in Science Awards Committee, 2007-08

Ex-Officio Member, U.S. National Committee for the International Union of Biochemistry and Molecular Biology, The National Academy of Sciences, 2007

President, American Society for Biochemistry & Molecular Biology, 2006-2008.

American Society for Biochemistry & Molecular Biology Public Affairs Advisory Committee, Finance Committee, Awards Committee, Nominations Committee, 2006-2009

Member, Association of American Medical Colleges, Panel on Safe and Effective Prescribing Practices, 2007-08

Mount Sinai Medical Center Department of Pharmacology Departmental Review Committee, 2006

Research Focus Group, The National Academies Committee on Prospering in the Global Economy of the 21st Century: An Agenda for American Science and Technology, 2005

HHMI Review Board, 2004, 2008.

University of Pennsylvania Department of Pharmacology Departmental Review Committee, 2003.

Protein Kinase Resource Advisory Board, 2000–2007

Executive Committee, International Conference on Second Messengers and Phosphoproteins, 1998-2004

University of California San Diego Biomedical Sciences Graduate Program Review, 2002

Board of Scientific Councilors, National Heart Lung and Blood Institute, 1997-2002

Program Committee, American Society for Biochemistry and Molecular Biology, 1996, 1999

Chair, Program Committee, American Society of Biochemistry and Molecular Biology Annual Meeting, 1998

Secretary, American Society for Biochemistry and Molecular Biology, 1995-1998

Biophysical Society Councilor, 1993-1997

Chairman, Gordon Conference on Cyclic Nucleotides and Protein Phosphorylation, 1995

Editorial Boards: Mount Sinai Journal of Medicine, 2007-2011
Chemical Biology & Drug Design, 2006-2016
Molecular Pharmacology, 1994-2008
Journal of Biological Chemistry, 1994-1999
Biochemistry, 1994-1998
American Journal of Physiology, Cellular and Molecular Lung Biology, 1999-2002
Molecular Cell Biology Research Communications, 1999-2002
Investigative Ophthalmology and Visual Science, 1993-1997

Reviewer and Chair on many ad hoc and regular study sections: NIH Visual Sciences C Study Section, regular member, 1991-1995; NIH Reviewers Reserve, 1995-1997

Biochemistry Organizing Committee, Association for Research in Vision and Ophthalmology, 1990-1993

PROFESSIONAL SOCIETIES

American Society for Biochemistry and Molecular Biology

American Society for Pharmacology and Experimental Therapeutics

Biophysical Society

Association for Research in Vision and Ophthalmology

Society for Neurosci.

Association of Medical School Pharmacology Chairs

RECENT GRANTS AND AWARDS

2019-2023 NIH -- 1R01 NS111749-01 Research Grant, Title: Regulation of exocytosis by direct Gβγ blockade of fusion. P.I., H. E. Hamm.

2016-2020 NIH-- DK109204-01 Research Grant, Title: GPCR Regulation of insulin secretion by modulation of the release machinery. P.I., H. E. Hamm.

2017-2021 1R01 HL133923-01 Research Grant, Title Targeting PAR4 in Thrombotic Disorders: Pharmacogenomic Approach. P.I., H. E. Hamm.

2014-2018 NIH--MH101679, Research Grant, Title: Optimization of modulators of Gβγ-SNARE interaction. P.I., H. E. Hamm.

2018-2021 NSF DMS-1812601 (Di Benedetto) Title: Bridging Across Scales to Model Cone Phototransduction. P.I. E DiBenedetto

1985 – 2016 NIH-NEI Research Grant, EY06062 Title: Immunological Studies of Visual Transduction Pathways. Years 27-31, P.I., H. E. Hamm.

2013-2016 NIH – NINDS, Research Grant R01 NS081669, Title: Optimization of PAR4 antagonists for thrombotic disorders. P.I., H. E. Hamm.

2013-2016 NIH – NINDS, Research Grant R01 NS082198, Title: Screening for allosteric modulators of the protease activated receptor 4. P.I., H. E. Hamm.

2009 – 2014 NIH-MH08474 Synaptic Plasticity and the Dynamic Interactions Between Calcium and Presynaptic. P.I. Simon Alford.

2010 – 2014 GM095633 Stabilization of membrane protein signaling complexes. PI Tina Iverson, H.E. Hamm Co-P.I.

1997 – 2011 NIH-NEI Research Grant, EY10291 Title: G protein Structure and Function. P.I., H. E. Hamm.

2006 – 2011 NIH-NHLBI Research Grant, HL084388-01, Regulation of Vascular Permeability

by Thrombin Mediated Signaling Pathways.

2006 – 2011 NIH-NHLBI SCCOR in Hemostatic and Thrombotic Diseases. P.I. Doug Vaughan, Project 3 – H.E. Hamm, PI, Role of PAR Receptors in Human Platelet Function.

2006 – 2010 NIH Research Grant, Title: Gα12/13 Signaling in Zebrafish Embryogenesis, P.I. Lilianna I. Solnica-Krezel.

2003 – 2010 NIGMS Research Grant, Title: Mathematical & Computational Modeling of Signal Transduction-NSF/NIH Mathematical Biology Initiative. P.I. Emmanuele DiBenedetto, Co-P.I. H.E. Hamm.

2006 – 2011 NINDS NS052446-01A1 G-Protein Regulation of Exocytotic Transmitter Release. P. I., Kevin Currie, Co-P.I. H.E. Hamm.

PENDING GRANTS

Regulation of a stress-reward circuit by a novel neuromodulatory mechanism 1R01DA044335-01 review group MNPS P.I., H. E. Hamm 2019-2022. impact score of 26, percentile 16.

Regulation of exocytosis by direct Gβγ blockade of fusion, 1R01NS111749-01 P.I. H. E. Hamm/Alford. 2019-2024. Impact score 24, 9%.

OTHER NATIONAL RESPONSIBILITIES

Journal Reviewer: Science, Nature, Proc. Natl. Acad. Sci. USA, EMBO J., Biochemistry, Oncogene, Neuron, Journal of Neurochemistry, Expert Opinion on Therapeutic Targets, Protein Science, BMC Structural Biology, Thrombosis and Haemostasis, J. Cell Biol., many others.

REGIONAL COMMITTEES

American Heart Association of Metropolitan Chicago Peer Review Committee, 1992-1994

Organizing Committee, Chicago Signal Transduction Group

Councilor, Society for Neuroscience Chicago Chapter, MediChem Corp. Scientific Advisory Board Chicago, 2000-2002

UNIVERSITY COMMITTEES

Vanderbilt University Medical Center

Neuroscience Visions Council, 2012

Search Committee for Chair of Biochemistry, 2011

Search Committee for Chair of Cell and Developmental Biology, 2010

Search Committee for Chair of Medicine, Vanderbilt Medical Center, 2010

Search Committee for Chair of Microbiology and Immunology, 2010

Faculty Awards Committee, Annual Faculty and Staff Research Awards, 2009-2011

Internal Advisory Board, Vanderbilt Institute for Clinical and Translational Research, CTSA, 2008-present

Executive Committee of Executive Faculty, 2002-2007

Search Committee for Director of Vanderbilt-Ingram Comprehensive Cancer Center, 2007

Search Committee for Chair of Anesthesiology, 2005

Advisory Committee for the Vanderbilt Building Interdisciplinary Research Careers in Women's Health (BIRCWH) program, 2006-present

Internal Advisory Panel, Program Project Grant "Biology of Arrhythmia Susceptibility," Vanderbilt University, 2006-present.

Faculty Reward Plan Advisory Committee, Vanderbilt University, 2006-2008.

Delbrook Centennial Symposium Planning Committee, 2006

Medical Scientist Training Program Faculty Advisory Committee, 2004–2010

Search Committee for Chair of Biomedical Informatics, 2003-2004

LCME Self Study Internal Advisory Committee for Center for Structural Biology, 2003–2004

Executive Committee of the Bioengineering Research Partnership, 2003–2006

Internal Advisory Committee, Vanderbilt Center for Structural Biology, 2003-present.

Vanderbilt Institute for Chemical Biology Executive Committee, 2002-2010

Drug Discovery Round Table, 2002-2003

Zebrafish Initiative Committee, 2002–2007

Trans-Institutional Bioinformatics Recruiting Team, 2001–2003

Capital Allocation Process Planning Committee, 2002-2003

Centers of Excellence Complex Biomedical Systems Research Committee, 2002-2003

Bioinformatics Executive Steering Committee, 2001-2003

Strategic Trajectory Committee, 2001-2002

Department of Pharmacology Committees

Strategic Planning Committee, 2005-present

Graduate Education Committee, 2000-present

Promotion and Tenure Committee, 2000-present

Mentoring Committee, 2000-present

Curriculum Committee, 2000-present

Northwestern University and Medical School Committees

Medical School Council for Research, 1999-2000

Medical School Genetics Task Force, 1999-2000

MSTP Executive Committee, 1999-2000

Biotech Oversight Committee, 1999-2000

Director of IGP Curriculum on Neurobiology, 1999-2000

Cancer Center Signal Transduction in Cancer Program Co-Leader, 1998-2000

Ad hoc Promotions and Tenure Committee, 1998-2000

Director of IGP Curriculum on Biochemistry and Structural Biology, 1997-2000

Steering Committee, Cancer Signal Transduction Training Program, 1997-2000

Howard Hughes Medical Institute Executive Committee, 1996-2000

Steering Committee, Training Grant in Vision Sciences, 1996-2000

Search Committee, Chair of Pediatrics, 1998-1999

Medical School Council for Planning, 1997-1999

MSTP Admissions Committee, 1997-1999

NUIN Admissions Committee, 1997-1998

Appointments Committee, 1997-1998

Ad hoc committee on Future Plans for New Research Space, 1997

Department of Molecular Pharmacology and Biological Chemistry Committees

Program Review Committee

Executive Committee

Education Committee

Space Committee

Crystallography Search Committee, 1997, recruited Doug Freymann.

University of Illinois at Chicago Committees

Graduate College Executive Committee, 1994-1996

Molecular and Cellular Biology Training Program Founding Committee, 1991-1996; Director, 1993-1996

Neuroscience Strategic Planning Committee, 1993-1996

Pharmaceutical Biotechnology Program Member, 1993-1996

Protein Synthesis/Sequencing Laboratory Advisory Committee, 1989-1996

Task Force on Neuroscience at UIC, 1989-1996

Colloquium on Signal Transduction Organizing Committee, Founding Member, 1988-1996

Search Committee for the Vice Chancellor for Research and Dean of the Graduate School, 1994-1995

Search Committee for Research Director of Illinois State Psychiatric Institute, 1994-1995

Ad Hoc Committee to review the Head of Neurology, 1994-1995

Search Committee to recruit a Protein Chemist to head the Protein Sequencing and Synthesis Facility, 1993-1995

Search Committee for Head of Pharmacology, 1993-1994

Liaison Committee on Medical Education Research Subcommittee, 1993

Structural Biology Program Committee, 1989-1992

UIC Molecular Biology Annual Retreat Planning Committee, 1989-1992

Organizer, UIC Molecular Biology Annual Retreat, 1990-1992

Cell Biology Program Committee, 1988-1992

IACUC Animal Care Committee, 1988-1991

Graduate Divisional Committee for the Life Sciences, 1985-1989

Search Committee, Head/Chief of Ophthalmology, 1989

Facilities Subcommittee of the Animal Care Committee, 1984-1988

COMCOR Committee for medical student summer research fellowships

TEACHING ACTIVITIES
COURSES:

Vanderbilt University Medical Center

2001- present IGP Course: Bioregulation

2001- present Receptor Theory: Cell-Surface Receptors and Signal Transduction Pathways

Northwestern University and Medical School

Macromolecular Structure and Function, course director

IGP Core Course in Biochemistry, 4 lectures

Scientific Basis of Medicine, Ophthalmology section, 1 lecture

NUIN: DO5, Molecular and Cellular Neuroscience Graduate Course, 1 lecture

NUIN E10, Advanced Topics in Visual Science, 1 lecture

MPBC: Ligands and Signal Transduction Graduate Course, 3 lectures

Lectures in the Life Sciences journal club, 1 lecture

University of Illinois at Chicago

1992 - 1996: Synapses Graduate Course in Anatomy and Cell Biology.
Guest lecturer on Signal Transduction at the Synapse

1991 - 1996: Signal Transduction Graduate Course, PHYB596

1987 - 1996: Cell Physiology Graduate Course, PHYB586

1988 - 1996: M1 Medical Physiology: Vision and Visual Processing,
Auditory and Vestibular Physiology, Hypothalamus

1988 - 1996: Pathophysiology (Pharmacy), PHYB331. Sensory and Neurophysiology

1987 - 1996: Dental Physiology, PHYB321. Sensory Physiology and CNS

1985 - 1996: Human Physiology, PHYB303
Physiology Techniques, PHYB569

Organized a Workshop on Animal Research in a Hostile Environment, Society for Neuroscience, Chicago Chapter Annual Symposium

1990 - 1992: Tutorial on Signal Transduction and Oncogenesis
Department of Medicine Cancer Center Oncogene Lecture Series, Rush University

Summer Course on Signal Transduction. Montana State University,
Bozeman, Montana

THESIS ADVISOR

Kyong-Houn Suh "Molecular and Functional Characterization of Cyclic Nucleotide- Dependent Phosphoproteins in Frog Rod Outer Segment." Current position, Professor/Director, Paichai University, Daejeon, Korea.

Helen Maheras Rarick "Mechanisms of Activation and Inactivation of Light-Sensitive Retinal cGMP Phosphodiesterase." 1988-1992. Current position, Professor, Wright College.

Kathrine Warpeha, Department of Biological Sciences, "Investigation of blue light-induced signal transduction in pea." 1987-1990. Current position, Assistant Professor, University of Illinois, Chicago IL.

Hyunsu Bae "Mechanisms of Receptor-Mediated G protein activation." 1993-1997. Current position, Kyung Hee University Professor, Department of Physiology, Kyung-Hee University, Seoul, Korea.

Chii-Shen Yang "Regulation of G protein subunit interaction," 1994-1998. Current Position, Associate Professor, Department of Biochemical Science and Technology, National Taiwan University, Republic of China.

Trillium Blackmer, "Heterotrimeric G protein βγ subunits mediate presynaptic inhibition independently of Ca^{2+} entry and bind the fusion core complex," 1997-2000. Current position, Scientist at Life Technologies, Molecular Probes Labeling, Life Technologies.

Tarita Thomas, MSTP student, "G Protein Signaling Mechanisms in Thrombin Stimulated Endothelial Cells," 1998-2002. Current position, Assistant Professor at Loyola University Chicago.

E.J. Dell, "The βγ Subunit of Heterotrimeric G Proteins Interacts With Three WD Repeat Proteins, Including RACK1," 1998-2003. Current position, International Marketing Director, BMG Labtech, Karlsruhe, Germany.

Anita Preininger, "The Structure and Function of the Myristoylated Amino Terminus of Gα Subunits and its Role as a GTP-Dependent Myristoyl Switch," 1999-2003. Current Position, Secondary School teacher, Nashville, TN.

Laurie Earls, "Signaling Partners of RGS9L in the striatum," 2001-2005. Current position, Postdoctoral fellow, St. Jude's Children Research Hospital, Memphis TN.

Will Oldham, "Mechanisms of Receptor-G protein interaction and G protein activation," 2001-2006. MD PhD student. Defended PhD July, 2006, currently Assistant Professor of Medicine, Harvard/Mass General Hospital, Boston MA.

Eun-Ja Yoon, "Mechanism of G protein βγ subunit interaction with SNARE proteins," 2003-2007. Leave of absence with two young children.

Bryan Voss, "PAR signaling in platelets," 2003-2007. Current position, Research Scientist, Cumberland Pharmaceuticals, Nashville TN.

Xin Li, 2007-2013. "Adhesion GPCRs in zebrafish development". Jointly mentored by Lila Solnica-Krezel. Postdoc at Albert Einstein College of Medicine Bronx, New York, NY.

Summer Young, 2007-2013 "PAR signaling in platelets". Mini-postdoc in lab 2013-2014. Vanderbilt Law School, 2014-2018.

Katherine Betke, 2008-2014, "Mechanism of G protein βγ subunit interaction with SNARE proteins". 2014-2018, Dartmouth Medical School.

Zack Zurowski, 2010-2015, “Mechanism of G protein βγ subunit interaction with SNARE proteins”

Susan Yim, 2012-2017, “Mechanism of G protein βγ subunit interaction with SNARE proteins”

Kendra Oliver, 2012-2016, “PAR signaling in platelets”

Alyssa Lokits, 2013-2017, “ Computational and experimental approaches to regulation of domain interaction in heterotrimeric G proteins” jointly mentored by Jens Meiler and HH

THESIS ADVISOR, UNIVERSITY OF SASSARI

Grazia Galleri, 1992, Regolazione dell'attivita della fosfodiesterasi GMP ciclico da parte di peptidi dalla subunita' α della transducina.

Maria Vittoria Podda, 1993, Struttura e funzione della transducina: Meccanismo di interazione con il suo effettore, fosfodiesterasi GMP ciclico.

Lucia Mura, 1994, Le G proteine in Saccharomyces cerevisiae: La regolazione dell'interazione della subunita' α con la βγ.

Gianluca Cossu, 1995, Ruolo di miristoilazione della subunita' α della transducina e i suoi mutanti.

POSTDOCTORAL AND RESEARCH ASSOCIATE ADVISOR

Dusanka Deretic, Ph.D. “Epitope mapping of monoclonal antibodies against Gαt using synthetic peptides.” Current position, Associate Professor of Cell Biology and Physiology, University of New Mexico.

Maria Mazzoni, M.D. “Regulation of G protein α-βγ subunit interaction and effect of monoclonal antibody binding.” Current position, Professor, Department of Pharmacy, University of Pisa, Italy.

Justine Malinsky, Ph.D. “Intrinsic fluorescence spectroscopy as a kinetic probe for conformational states of G protein subunits.” Current position, Scientist, Group Leader at Life Technologies.

Theresa Schepers, Ph.D. “Molecular basis of receptor activation of G proteins.” Current position, Research Associate, Abbott Laboratories, North Chicago, Illinois.

John Mills, Ph.D. “Fluorescence studies of the kinetics of protein-protein interaction in the signal transduction cascade of vision.” Current position, Assistant Research Professor, Department of Chemistry and Biochemistry, Montana State University.

Nikolai O. Artemyev, Ph.D. “cGMP phosphodiesterase structure-function studies.” Current position, Professor, Molecular Physiology and Biophysics, Department of Physiology, University of Iowa.

Navreena Gill, Ph.D. “Molecular modeling of homologous G proteins based upon the crystal structure of transducin α subunit.” Current position, Senior Engineer at United Airlines, United Airlines, Chicago.

Stephanie Rens-Domiano, Ph.D. “A random peptide library approach to the study of affinity and specificity of receptor-G protein interaction.” Current position, mother of three children.

Carolyn Ford, Ph.D. “Molecular basis of G protein βγ subunit interaction with Gα, rhodopsin, and effectors.” Current position, Assistant Professor, University of Toledo.

Nikolai P. Skiba, Ph.D. “Site-directed mutagenesis and chimeric expression studies of $G\alpha_t$ and cGMP phosphodiesterase.” Current position, Assistant Professor, Ophthalmology, Duke University School of Medicine, Durham, NC.

Annette Gilchrist, Ph.D. “High-affinity competitive antagonists of receptor G protein interaction as tools for the study of signaling pathways.” Current position, Assistant Professor of Pharmaceutical Sciences, Chicago College of Pharmacy, Midwestern University, Downers Grove, IL, and Senior Online Editor for BPS Journals BJP and BJCP

Theresa Vera, Ph.D. “Molecular basis of specificity of receptor-G protein interactions.” Current position, Scientific Associate Director, Takeda Pharmaceuticals .

Jurgen Vanhauwe, Ph.D. “High-affinity inhibitors of thrombin receptor-mediated signal transduction.” Current position, Sales Director - AxiomX.

Anna Anderssen Ph.D. “Regulation of G protein turnoff by RGS proteins.” Current position, Managing Director Astra-Zeneca Pharmaceuticals, Stockholm, Sweden.

Lee Shekter, Ph.D. “G protein βγ subunit interaction with channels.” Current position, Chief Technical Officer, Biostatistical Consulting.

Ramesh Bhatt, Ph.D. “Mechanisms of RGS9 regulation by effectors.” Current position, Executive Director at Rigel Pharmaceuticals Inc. San Francisco CA.

Martina Medkova, Ph.D. “Site-directed Cys mutagenesis for studies of G protein conformational changes.” Current position, Assay/Technology Development Scientist, Daktari Diagnostics, Cambridge, Massachusetts.

Cheryl Bartleson, Ph.D. “G protein βγ subunit interactions with SNAREs.” Current position, Project Director/Principal Research Scientist at Worldwide Clinical Trials Early Phase Services, Austin TX.

Corey Fowler, Ph.D. “Functional selectivity in thrombin receptors.” Current position, Program Manager of Neurosciences at DiagnoSearch Life Sciences, New York, NY.

Bryan Spiegelberg, Ph.D. “Interactions of histone deacetylase with G protein βγ subunits.” Current position, Assistant Professor, Department of Chemistry and Biochemistry, Rider University, Princeton, NJ

Joseph McLaughlin, Ph.D. “Mechanisms of thrombin-mediated gene regulation.” Current position, Medical Student, Univ. Pittsburgh, Pittsburgh PA

John Cleator, M.D., Ph.D. “Mechanisms of thrombin activation of exocytosis of Wiebel-Palade bodies.” Current position, Assistant Professor of Medicine, Cardiology, Vanderbilt University.

Matt Bilodeau, M.D., Ph.D, “Mechanisms of cyclic nucleotide protection from platelet aggregation.” Current position, Assistant Professor, Cardiovascular Research Institute, Cleveland, OH.

Songhai Chen, Ph.D. “Functional roles for G protein βγ subunit interactions with RACK1.” Current position, Associate Professor of Pharmacology, University of Iowa, Iowa City, Iowa.

Fang Lin, Ph.D. “G proteins in zebrafish development.” Current position, Associate Professor, Anatomy & Cell Biology, University of Iowa, Iowa City, Iowa.

Michael Holinstat, Ph.D. “PAR Mediated Rap1 Regulation of Platelet Aggregation.” Current position, Associate Professor of Medicine and Biochemistry, Jefferson University, Philadelphia PA.

Lixin Shen, Ph.D., “Mathematical and computational modeling of visual signal transduction.” Current position, West Virginia University, Morgantown WV.

Anita Preininger, Ph.D. “The Structure and Function of the Myristoylated Amino Terminus of Gα Subunits and its Role as a GTP-Dependent Myristoyl Switch.” Current position, Secondary school teacher, Nashville TN.

Chris Wells, M.D., Ph.D, “Mechanisms of Gβγ interaction with SNARE proteins.” Cardiovascular Fellow, Vanderbilt University 2007-2008, 2010-2011. Currently Physician, American Family Care, Veterans Administration.

Leonardo Lenoci, Ph.D., “Mathematical and computational modeling of visual signal transduction.” Postdoctoral Fellow, Vanderbilt University. Current position, Research Fellow, Univ. of Leiden, Netherlands

Wei Yin, “Expression of GPCRs in E. Coli: refolding and functional studies.” Postdoctoral Fellow, Vanderbilt University. Current position, Research Assistant Professor, Department of Biochemistry, Sun Yat-Sen University, Guangzhou, China

Himabindu Penmatsa, “Molecular basis for racial disparities in resistance to anti-platelet therapies in diabetics.” Researcher, Visakhapatnam, Andhra Pradesh, India

Junho Lee, “Gβγ interaction with SNARE proteins.” Current position, Research Assistant Professor, Department of Neuroscience, Duke University

Ali Kaya, “Rhodopsin-G protein complexes: stabilization and structural studies.” Postdoctoral Fellow, Vanderbilt University, 2005-2007, Research Assistant Professor, 2010-2015, Currently Research Assistant Professor, Tina Iverson’s laboratory, Department of Pharmacology, Vanderbilt University.

Matt Duverney, "Platelet signaling through thrombin receptors." Postdoctoral Fellow, Vanderbilt University. Currently, Research Assistant Professor, Department of Pharmacology.

Zack Zurowski, 2015-2018, "In vivo physiological and behavioral effect of disabling Gbg-SNARE interaction"

Susan Yim, 2017-2018, "Specificity of G protein βγ subunit interactions with receptors and SNARE proteins"

PRECEPTOR FOR MEDICAL STUDENTS

John Ortega, Tom McNanley, Joe Kalisky, Tom Ham, Russ Zwilinsky, Michael Klein, Brian Aldred, John Pietrowski, Joe Mastro, Gary Schaffel, David Roccaforte, Anant Bhave, Daran Maxon, Eric Roundtree, Alan Betensley, Andrew Dice, Richard Boxer, Eric Cuasay, Han-Sue Bae, Ingrid Lim

PRECEPTOR FOR HOWARD HUGHES UNDERGRADUATE FELLOWS

Sima Patel, Amit Garg, Lida Aris

GRADUATE STUDENT PRETHESIS AND THESIS COMMITTEES

Vanderbilt University
Samuel DeLuca, James Hardaway, Xin Li, Mark Jewell, Aliya Frederick, Whitney Cleghorn, Tarjani Thaker, Ron Bruntz, Sarah Nordstrom, Xiaohui Yan, Laurie Earls, Yi Feng, Efrain Garcia, Aaron Hata, Lee Henage, Arlene Kray, Jamie McConnell, Susan Hanson, William Oldham, Daniela Popescu, Bryan Voss, Eun-Ja Yoon, David Andrew Petersen, Sarah Nordstrom, Xiaohui Yan, Zheng Zhou, Tammy Wingo, Eric Ward, David Peterson, Leomar Ballester, Scott Myers, Matthew Mazalouskas, Elizabeth Hackler, Leigh Compton, Summer Young, Ronald Bruntz, Tom Tomesiak, Katherine Betke, Whitney Cleghorn, Aliya Frederick, Tarjani Thaker, Mark Jewell, Zack Zurowski, Mika Garrett, Stacey Lee, Qiuyan Chen, Rene Raphemot, Susan Yim, Kendra Oliver, David Stevens, Sam Deluca, Mica Garrett, Taneisha Gillyard, Erica Preutt Anderson, Brad Bender, Sheridan Carrington, Meagan Quinlan,

Northwestern University and Medical School
Kathy Lee, David Lorber, Rachel Powers, Ann Marie Girvin, Bill Ashley

University of Illinois at Chicago
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213. Witt, P.L., **H.E. Hamm** and M.D. Bownds. Preparation and characterization of monoclonal antibodies to several frog rod outer segment proteins. *J Gen Physiol*. 1984 84:25l.

214. **Hamm, H.E**., J.S. Takahashi and M. Menaker. Light-induced decrease of serotonin N-acetyltransferase activity and melatonin in the chicken pineal gland and retina. *Brain Res*. 1983 266:287-293.

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219. **Hamm, H.E**. and M. Menaker. Retinal rhythms in chicks: Circadian variation in melatonin and serotonin N-acetyltransferase activity. *Proc Natl Acad Sci USA*. 1980 77:4998-5002.

220. **Hamm, H.E**. Circadian rhythms of melatonin synthesis in the avian retina. Ph.D. Dissertation, University of Texas at Austin, l980.

IN REVISION, SUMITTED, AND IN PREPARATION

221. Yim, YY., McDonald, WH., Gilsbach, R. Hyde, K, Hein,L., **Hamm, HE**. Modulation of synaptic transmission by $G_{i/o}$-coupled GPCRs: neuronal Gβ and Gγ specificities to SNARE complex. In preparation, 2018.

BOOKS

Synthetic Peptides as Probes of Protein-Protein Interaction. **H. E. Hamm**, Editor. Methods: *A Companion to Methods in Enzymology, Vol. 5*. Academic Press, San Diego, CA, 1993.

GTPases as Molecular Machines. D. Corda, **H. Hamm** and A. Luini, Editors. Ares-Serono Symposia, Challenges *in Endocrinology and Modern Medicine*, Vol. 6, 1994.

Handbook of Cell Signaling, First and Second Editions. Ralph A. Bradshaw and Edward A. Dennis, Editors. **Heidi Hamm**, Associate Editor on G proteins.

Encyclopedia of Human Biology, Third Edition, Dr. Renato Dulbecco and Dr. John Abelson, Editors. **H.E. Hamm**, Pharmacology Section Editor. Academic Press, San Diego, CA, 2013.

PATENTS

Patent 200301622258 Inhibitors of G protein-mediated signaling, methods of making them, and uses thereof. Inventors: **Heidi E. Hamm**, Annette Gilchrist. **Filed:** January 21, 2000, **Date of Patent:** May 6, 2003 **Assignee:** Northwestern University

Patent US 6559128, Inhibitors of G protein-mediated signaling, methods of making them, and uses thereof. Inventors: **Heidi E. Hamm**, Annette Gilchrist. **Filed:** February 24, 2003, **Publication date:** August 28, 2003, **Applicant:** Northwestern University.

Patent US 11844353, Dendritic molecular intracellular transporters and methods of making and using same. Inventors: Eva M. Harth, James E. Crowe, Kui Huang, Sharon K. Hamilton, **Heidi E. Hamm**, Bryan Voss. Issue Date September 11, 2008. **Filed:** August 23, 2007, **Publication date:** September 11, 2008

Publication number: 20150315174, Dendritic molecular intracellular transporters and methods of making and using same. Inventors: Eva M. Harth, James E. Crowe, Kui Huang, Sharon K. Hamilton, **Heidi E. Hamm**, Bryan Voss. **Filed:** March 3, 2015, **Publication date:** November 5, 2015

Patent US 9572794 B2 Substituted Indoles as Selective Protease Activated Receptor 4 (PAR-4) Antagonists, Inventors: **Heidi E. Hamm**, Shaun R. Stauffer, Craig W. Lindsley, Wandong Wen, Summer E. Young, Matthew T. Duvernay, Kayla J. Temple. **Filed:** August 6, 2015, **Publication date:** March 24, 2016, **Issue Date,** 2-21-2017.

Patent US 2017 0253617 A1. Substituted 5-Membered Heterocyclic Analogs as Protease Activated Receptor 4 (PAR-4) Antagonists. Inventors: **Heidi E. Hamm**, Shaun R. Stauffer, Craig W. Lindsley, Matthew T. Duvernay, Kayla J. Temple. Issue Date 9-27-2017. **Filed:** March 7, 2017, **Date of Patent:** May 8, 2018, **Assignee:** Vanderbilt University

Patent VU16109US1 Substituted and Fused 6-Membered Heterocyclic Analogs as Protease Activated Receptor 4 (PAR-4) Antagonists. Inventors: **Heidi E. Hamm**, Shaun R. Stauffer, Craig W. Lindsley, Matthew T. Duvernay, Kayla J. Temple. Application No. 15/452,686 Filing Date 3-7-2017, Our Docket No. 11672N-16109U SUBSTITUTED AND FUSED 6-MEMBERED PROTEASE ACTIVATED RECEPTOR 4 (PAR-4) ANTAGONISTS. Submission Date 4-17-2017.

RECENT INVITED SYMPOSIA AND MEETING ORGANIZATION

Invited Speaker, Gordon Research Conference on Mol Pharmacol. "Regulation of Exocytosis by inhibitory GPCRs and Gβγ subunits." Ventura CA, Feb 10, 2019.

Invited Speaker, American Diabetes Association, Orlando FL Inhibition of Secretion by GPCR Regulation of the Exocytotic Fusion, talk in Symposium entitled "G-Protein-Coupled Receptors—Structural Insights to Therapeutic Options", June 26, 2018.

Invited Speaker, Discovery on Target, GPCR-Based Drug Discovery, Boston MA, Sept. 21, 2016.

Invited Speaker, Endocrine Society Orlando Fl Session on New Insights into Mechanisms Controlling Endocrine Secretion, GPCR Regulation of Secretion. April 1, 2017.

Invited Speaker, Gordon Research Conference on Mol Pharmacol. "Regulation of Exocytosis by inhibitory GPCRs and Gβγ subunits." Ventura CA, Feb 4, 2015.

Memorial Symposium for Itzhak Parnas "Frontiers in synaptic functions" Jan 11-14, 2014, Jerusalem, Israel. Title: Regulation of Exocytosis by inhibitory GPCRs and Gbg subunits

ORNL Workship on neutrons in membrane biology, UCSD, Jan 18, 19, 2014. "Signaling complexes".

Plenary Talk at Oak Ridge Biology and Soft Matter Users Group Meeting, August 14, 2013.

Colloquium celebrating the 50th anniversary of the article "Allosteric proteins and cellular control systems" by Jacques Monod, Jean-Pierre Changeux, and François Jacob in the *Journal of Molecular Biology*. May 14, 2013, Pasteur Institute, Paris, France

Spemann lecturer at the "International Symposium: Signaling and Sorting,"April 10 – 12, 2013, Freiburg/ Breisgau, Germany.

Plenary Lecturer, TSBMB (Taiwan Society of Biochemistry and Molecular Biology), Taiwan, Nov. 22-24, 2012.

Featured Speaker for the Heartland Undergraduate Biochemistry Forum (HUB) on November 10, 2012, Kansas City, Kansas.

Keynote Lecturer, South American Spring Symposium in Signal Transduction and Molecular Medicine, Bariloche, Argentina, Nov. 4-8, 2012

28th Ariens Lecture, Figon Dutch Medicines Days, Lunteren, Netherlands. Oct. 1-3, 2012

Keynote speaker for the 50th Annual MIKI (Minnesota, Iowa, Kansas and Illinois) Medicinal Chemistry Meeting, April 13-15, 2012, Iowa City, IA.

Keynote Lecture, Symposium in Signal Transduction and Molecular Medicine. "Heterotrimeric G protein activation by G-protein-coupled receptors." San Carlos de Bariloche, Argentina, November 4, 2012.

Invited speaker, ASBMB 2012 Annual Meeting, Keynote Lecture to Graduate and Postdoctoral Travel Awardees. “Composing a Life.” San Diego, California, April 20, 2012.

Platform Speaker, 6th International Conference on Structural Analysis of Supramolecular Assemblies by Hybrid Methods. "Mechanisms of receptor-mediated G protein activation." Lake Tahoe, California. March 14-18, 2012.

Invited speaker, Signaling Networks Conference 2011. "Mechanisms of receptor-mediated G protein activation." Merida, Yucatan, Mexico. October 22-28, 2011.

Invited Speaker, FASEB Summer Research Conference: Biology & Chemistry of Vision Meeting. “New insights into mechanisms of receptor-mediated G protein activation.” Carefree, Arizona, June 19-24, 2011.

Keynote Speaker, EPHAR Symposium on Molecular Pharmacology of G protein coupled receptors and signalling partners, Istanbul Turkey, June 6-7, 2011.

PABMB Plenary Lecturer, Chilean Society for Biochemistry and Molecular Biology. Termas de Chillan, Chile, September 28 - October 1, 2010.

Invited Speaker, WorldPharma 2010. “Heterotrimeric G protein activation by G-protein-coupled receptors.” Copenhagen, Denmark, July 22, 2010.

Invited Speaker, ASBMB Experimental Biology Meeting. “Mechanism of Receptor G-Protein Interaction.” Anaheim, California, April 27, 2010.

Invited Speaker, Keystone Symposium on G Protein-Coupled Receptors. “Mechanism of receptor G protein interactions.” Keystone, Colorado, April 8, 2010.

Invited Speaker, Systems Biology Center Symposium 2009. “Systems biology of thrombin signaling.” New York, New York, December 3, 2009.

Invited Speaker, Signal Transduction Branch, National Meeting. “Structural Basis of G Protein Signaling.” Ixtapan de la Sal, Mexico, September 6, 2009.

Invited Speaker, Gordon Research Conference on Phosphorylation and G-protein mediated signaling networks. “Dynamics of G protein activation by GPCRs.” Biddeford, Maine, June 11, 2009.

Invited Speaker, Keystone Symposium on Protein Dynamics, Allostery and Function. “Allosteric Connections from a G Protein-Coupled Receptor to the Nucleotide-Binding Pocket of a Heterotrimeric G Protein.” Keystone, Colorado, June 7, 2009.

Invited Speaker, ASBMB Experimental Biology Meeting. “How GPCRs Catalyze G Protein Activation.” New Orleans, Louisiana, April 21, 2009.

Plenary Lecture, ASPET G-Protein Targets Colloquium. “G-Protein Effector Interaction: A Target for Drug Discovery?” New Orleans, Louisiana, April 18, 2009.

Invited Speaker, Federation of American Societies for Experimental Biology: Experimental Biology Meeting. "Receptor-catalized activation of heterotrimeric G proteins." San Diego, California, April 5-9, 2008.

Hyman Niznik Memorial Keynote Lecture, Eighth Annual Joint Meeting of the Great Lakes G Protein-Coupled Receptor Retreat. London, Ontario, September 27-29, 2007.

Keynote Lecture, European Conference on Hormones and Cell Regulation, "GPCR-complexes and GPCR complexity." Mont Sainte Odile (Alsace), France, September 13-16, 2007.

Invited Speaker, Shanghai Institutes for Biological Sciences, Chinese Academy of Sciences. "Role in vesicular exocytosis of Gβγ interaction with soluble N-ethylmaleimide-sensitive factor attachment protein receptor (SNARE) complex." Shanghai, China, July 5, 2007.

Invited Speaker, Guangzhou Institute of Biomedicine and Health, Chinese Academy of Sciences, Symposium on Biochemistry and Molecular Biology. "Role of G-Protein Coupled PAR Receptors in Platelets." Guangzhou, China, July 2, 2007.

Invited Speaker, Chinese National Institute of Biological Sciences. "How do receptors catalyze G protein activation?" Beijing, China, June 28, 2007.

Invited Speaker: Gordon Research Conference, Phosphorylation and G Protein Mediated Signaling Networks. "Novel G-beta/gamma Signaling Partners." University of New England, Biddeford, Maine, June 10-15, 2007.

Keynote Speaker, 2007 FASEB Summer Research Conferences, Proteases in Hemostasis and Vascular Biology. "Signaling thru phospholipase D and polyphosphoinositides required for PAR1-mediated human platelet activation." Indian Wells, California, June 2-7, 2007.

Invited Speaker: PreARVO Meeting: Rhodopsin: Advances and Perspectives. "Mechanism of rhodopsin-catalyzed GDP release on G protein alpha subunits." Ft. Lauderdale, Florida, April 28-29, 2006.

Symposium Speaker: 2006 Keystone Symposium. "GPCR Activation: Studies with peptides and antibodies." Keystone, Colorado, February, 2006.

Invited Speaker: 2005 Annual Meeting, Southeastern Pharmacology Society and Southeastern Society of Toxicology. "Differential regulation of platelet activation by PAR-1 and PAR-4." Nashville, Tennessee, October 19-21, 2005.

Invited Speaker: 2005 Annual Meeting, American Society of Bone and Mineral Research, Hormone-Receptor Interactions Workshop. "How receptors activate G proteins." Nashville, Tennessee, September 23, 2005.

Symposium Speaker: 2005 FASEB Summer Research Conference on Receptors and Signal Transduction. "Modeling G protein signaling pathways downstream of PAR receptors." Snowmass, Colorado, July 30 - August 4, 2005.

Symposium Speaker: Gordon Conference 2005 Second Messengers & Protein Phosphorylation. "How do receptors activate G proteins?" Biddeford, Maine, June 13, 2005.

Symposium Speaker: DeLange Conference V. "G protein structure and function." Houston, Texas, March 8, 2005.

RECENT COLLOQUIA

2018 University of Rochester, 2018 John R. Murlin Lecture, May 31, 2018 GPCR modulation of exocytosis through Gβγ

UT Southwestern Sept 25, 2018

Mount Sinai Friedman Brain Institute Translational Neuroscience Seminar Series Oct. 25, 2018

2017 Weill Medical College, Pharmacology Department, GPCR modulation of exocytosis through Gβγ

IDG/McGovern Institute for Brain Research at PKU, Beijing, China, GPCR modulation of exocytosis through Gβγ

iHuman Institute ShanghaiTech University, Shanghai, New insights into mechanisms of receptor-mediated G protein activation.

2016 Vanderbilt University Department of Pharmacology Faculty Feed GPCR modulation of exocytosis through Gβγ.

Vanderbilt University Biophysics Colloquium. How do GPCRs catalyze G protein activation?

Leipzig University Institute of Biochemistry, Leipzig, Germany, Regulation of Exocytosis by inhibitory GPCRs and Gβγ subunits

Max Planck Institute for Heart and Lung Research, Regulation of Exocytosis by inhibitory GPCRs and Gβγ subunits

Neuroscience Institute, University of Bonn, Regulation of Exocytosis by inhibitory GPCRs and Gβγ subunits

Institute for Systems Biomedicine and Department of Pharmacological Sciences, Icahn School of Medicine at Mount Sinai

2014 Emory seminar, BCDB Symposium and the Department of Pharmacology, Regulation of Exocytosis by inhibitory GPCRs and Gβγ subunits

Emory BCDB Mentoring Seminar "Becoming an activist scientist"

Washington University, Department of Anesthesiology, Regulation of exocytosis by inhibitory GPCRs and Gβγ subunits

Diabetes Research and Training Center seminar, Vanderbilt University, April 4, 2014, Regulation of exocytosis by inhibitory GPCRs and Gβγ subunits

UIC Department of Biological Sciences seminar, "Structural Basis of G Protein Signaling"

Vanderbilt University. Women on Track Lecture, Grant Writing Panelist, "Tips and Tools for Grant Writing", Nashville, Tennessee, May 19, 2014.

2013 Vanderbilt University. Women on Track Lecture, "Composing a Life," Nashville, Tennessee, March 7, 2013.

2012 Merck Research Laboratories, Department of Cardiovascular Sciences, "Differential regulation of platelet activation by PAR-1 and PAR-4", Oct 25, 2012.

University of Kansas. Department of Biochemistry and Molecular Biology, "New insights into mechanisms of receptor-mediated G protein activation," Kansas City, Kansas, Nov. 9, 2012.

University of Iowa. Department of Pharmacology, College of Medicine. "Heterotrimeric G protein activation by G-protein-coupled receptors." Iowa City, Iowa, April 16, 2012.

Meharry Medical College. Department of Neuroscience and Pharmacology, 27th Annual Ralph J. Cazort Heritage Lecture. "New insights into mechanisms of receptor-mediated G protein activation." Nashville, Tennessee, March 28, 2012.

2011 University of Kentucky. Department of Molecular and Cellular Biochemistry. "G protein signaling mechanisms." Lexington, Kentucky, November 8, 2011.

David Lipscomb University. College of Pharmacy and Health Sciences, Pharmacy Research Day. "G Protein Signaling Mechanisms." Nashville, Tennessee, October 18, 2011.

University of Freiburg. "Mechanisms of GPCR Modulation of Synaptic Transmission by G Protein βγ Subunits." Freiburg, Germany, May 31, 2011.

University of Bonn. Collaboration Partnership with Institute of Pharmacology and Toxicology. "New insights into mechanisms of receptor-mediated G protein activation." Bonn, Germany, May 30, 2011.

Leipzig University. Partnership: Vanderbilt University and Leipzig University. "New insights into mechanisms of receptor-mediated G protein activation." Leipzig, Germany, May 25, 2011.

Northwestern University. "Mechanism of modulation of synaptic transmission by G protein βγ subunits." Chicago, Illinois, May 6, 2011.

University of California, San Diego. Workshop in Allosteric and Orthosteric Ligands in Drug Action. "New insights into mechanisms of receptor-mediated G protein activation" and "Drug Discovery and Development in Academia." San Diego, California, March 12, 2011.

Vanderbilt University, Molecular Biophysics Training Program Seminar. "Receptor-mediated G protein activation." Nashville, Tennessee, February 1, 2011.

2010 University of Buffalo, Biochemistry Seminar. "G protein signaling mechanisms." Buffalo, New York, April 13, 2010.

Louisiana State University Health Sciences Center, 7th Annual Graduate Student Colloquium: G protein structure and function. "G protein signaling mechanisms." New Orleans, Louisiana, March 2, 2010.

2009 Tulane University. "G protein structure and function." New Orleans, Louisiana, November 20, 2009.

University of California, San Diego. "G Protein Signaling Mechanisms in Platelets." San Diego, California, October 1, 2009.

University of Illinois. "Molecular regulation of G protein function." Champagne-Urbana, Illinois, September 17, 2009.

2008 Iowa State University, Extracellular Proteases in Cell Signaling. "Thrombin-mediated G protein signaling pathways." Ames, Iowa, September 19, 2008.

University of Georgia, "Novel Gbg signaling pathways." Athens, Georgia, April 25, 2008.

University of Virginia, "Novel regulation of synaptic transmission by Gbg subunits." Charlottsville, Virginia, March 14, 2008.

National Institute of Environmental Health Services, National Institutes of Health, Laboratory of Neurobiology. "Novel regulation of synaptic transmission by Gbg subunits." Durham, North Carolina, March 13, 2008.

Vanderbilt University, Molecular Biophysics Training Grant seminar. "How receptors activate G proteins." Nashville, Tennessee, February 5, 2008.

Cincinnati Children's Hospital. "G protein structure and function." Cincinnati, Ohio, January 9, 2008.

2007 Newmark Award Lecture in Biochemistry. "How do receptors catalyze G protein activation?" University of Kansas, Lawrence, Kansas, October 8, 2007.

Comprehensive Neuroscience Seminars, University of Alabama. "Human Platelet Signaling through PAR1 and PAR4." Birmingham, Alabama, May, 2007.

Case Western Reserve University. “Mechanism of rhodopsin-catalized GDP release on G protein alpha-subunits.” Cleveland, Ohio, February, 2007.

2006 Vanderbilt University, Seminar Series in Cardiovascular Research “Role of G-Protein Coupled PAR Receptors in Platelets.” Nashville, Tennessee, July, 2006.

Vanderbilt University, Membrane Biology and Protein Trafficking Seminar. “Gβγ regulation of exocytosis.” Nashville, Tennessee, March 17, 2006.

Visiting Professorship, University of New Mexico. “Thrombin-mediated G protein signaling pathways.” Albuquerque, New Mexico, February 17, 2006.

Department of Pathology, University of Alabama. “Signaling through protease activated receptors in the cardiovascular system.” Birmingham, Alabama, January 17, 2006.