

Tracy L. Bale, Ph.D.

Professor, Departments of Pharmacology and Psychiatry
Director, Center for Epigenetic Research in Child Health and Brain Development
University of Maryland, School of Medicine

CONTACT INFORMATION

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EDUCATION

1987-1992 B.S. Biology/Molecular Biology & Genetics, Washington State University
1993-1997 Ph.D. Neurobiology, University of Washington, Department of Pharmacology

POST GRADUATE EDUCATION AND TRAINING

1998-2003 Postdoctoral Fellow, Peptide Biology Laboratories, The Salk Institute,
Mentor – Dr. Wylie W. Vale

EMPLOYMENT HISTORY

Faculty Appointments

2003-2009 Assistant Professor of Neuroscience, Department of Biomedical Sciences, SVM,
University of Pennsylvania
2006-2009 Assistant Professor of Neuroscience, Department of Psychiatry, (secondary
appointment), Perelman SOM, University of Pennsylvania Tenure awarded in
2009
2009-2013 Associate Professor of Neuroscience, Department of Biomedical Sciences, SVM
(primary), Dept. of Psychiatry (secondary), Perelman SOM, University of
Pennsylvania,
2013-2017 Professor of Neuroscience, Department of Biomedical Sciences, SVM (primary),
Dept. of Psychiatry (secondary), Perelman SOM University of Pennsylvania
2017-present Professor, Departments of Pharmacology and Psychiatry, University of Maryland,
School of Medicine
2017-present Director, Center for Epigenetic Research in Child Health and Brain Development,
University of Maryland, School of Medicine

Administrative and Academic Appointments

2003-2017 Faculty Member, Diabetes Center/Institute for Diabetes, Obesity and Metabolism
2004-2017 Faculty Member, Mahoney Institute for Neural Science (MINS)

2004-2017 Faculty Member, Center for Neurobiology and Behavior
 2004-present Faculty Member, Neuroscience Graduate Group (NGG)
 2004-2017 Faculty Member, Pharmacology Graduate Group (PGG)
 2008-2016 Director, Neuroscience Center, School of Veterinary Medicine
 2009-2011 Vice Chair, Neuroscience Graduate Group
 2013-2017 Co-Director, Center for the Study of Sex and Gender in Behavioral Health
 2015-2017 Scientific Director, BIRCWH K12

Other Employment

1991-1993 Research Fellow, Life Sciences Research Center, Department of Energy, Pacific Northwest Laboratories, Richland, Washington

PROFESSIONAL SOCIETY MEMBERSHIP

1995-present Member, Society for Neuroscience
 1998-present Member, Endocrine Society
 2004-present Member, Society for Behavioral Neuroendocrinology
 2004-2008 Member, North American Association for the Study of Obesity
 2004-2009 Member, Society for the Study of Ingestive Behavior
 2009-present Member, Organization for the Study of Sex Differences
 2015-present Member, American College of Neuropsychopharmacology

HONORS AND AWARDS

1992 **Science and Engineering Research Fellow Award**, Department of Energy
 1996 Molecular and Cellular Biology Training Grant
 1997 **Young Investigator Symposium Speaker**, National Science Foundation
 1998 **Research Fellowship Award**, National Research Service Award (NRSA)
 2001 **Fellowship Award**, American Neuroendocrine Society
 2001 **Research Fellowship Award**, Adler Foundation Grant
 2003 **Bristol-Myers Squibb Award**, American College of Neuropsychopharmacology (ACNP), awarded to distinguished young scientist in the field of neuropsychopharmacology
 2003 **Frank Beach Outstanding Investigator Award**, Society for Behavioral Neuroendocrinology, awarded for exceptional promise in making significant contributions in behavioral neuroendocrinology
 2003 **McCabe Fellow Award**
 2008 **Ziskind-Somerfeld Research Award**, Society of Biological Psychiatry, selected from the top 10 cited articles of the year
 2008 **Career Development Award**, Society for Neuroscience
 2011 **Richard E. Weitzman Memorial Award**, Endocrine Society Laureate Award for an exceptionally promising young investigator who has not reached the age of 43
 2012 **Medtronic Society for Women's Health Research Prize**, for an outstanding scientist in mid-career whose work has led directly to the improvement of women's health

- 2016 **MERIT Award**, NIMH R37MH108286
 2016 **Daniel H. Efron Research Award**, American College of Neuropsychopharmacology, for outstanding research contributions at the interface between basic and clinical research
 2019 **NIH Award and Key Lecture**, International Federation of Placenta Associations
 2019 **Joseph Erlanger Award and Distinguished Lecture**, American Physiological Society

CONFERENCE ACKNOWLEDGEMENTS AND HONORS

- 2007 Society for Neuroscience Press Conference, Sex differences in stress and disease
 2008 Society for Neuroscience Press Conference, Epigenetics: influencing the brain's genetic program
 2009 Society for Neuroscience Press Conference, Maternal diet programming
 2011 Society for Neuroscience Press Conference, Stress and the developing brain
 2013 Special Lecture, Society for Neuroscience
 2015 Society for Neuroscience Press Conference, Gut microbiome and the brain
 2017 Society for Neuroscience Press Conference, Epigenetics and the brain
 2018 Society for Neuroscience Press Conferences, Early life stress; Exosomes

ADMINISTRATIVE SERVICE

Institutional Committees and Service

Department:

- 2004 Mari Lowe Seminar Committee
 2004-2006 Organizer, Animal Biology Department Seminar Committee
 2005 Member, Faculty Search Committee
 2007-2010 Member, Animal Biology Department Seminar Committee
 2008-2014 Member, Executive Committee, Animal Biology
 2010-2012 Chair, Stem Cell/Regenerative Medicine Faculty Search Committee
 2011 Member, Departmental Teaching Review Committee
 2011 Member, Department Review Mentor Committee
 2011-2012 Chair, Department Review Space Committee
 2015 Member, Departmental Retreat Committee
 2018 Member, Assistant Professor Promotion Review Committee

School:

- 2004-2005 Member, Faculty Research Retreat Committee
 2005 Member, Faculty Search Committee – Clinical Studies
 2005 Member, Departmental Review Committee – Clinical Studies
 2005 Member, Long Range Planning Committee
 2005-2006 Member, Committee on Committees
 2006-2007 Chair, Committee on Committees
 2006 Member, Thought Leaders in Neuroscience Committee
 2006-2017 Member, Research Council

2008 Member, Faculty Research Retreat Committee
 2010-2012 Member, Innovations in Teaching Committee
 2011-2013 Member, Future Space Planning Committee
 2014-2016 Member, Penn Vet Bridge Funding Review Committee
 2015 Presenter, Board of Overseers meeting
 2015-2016 Member, Awards Committee
 2015-2016 Member, Long Range Planning Committee
 2015-2016 Chair, Committee to Review Centers and Institutes
 2016 Invited Presenter, New Jersey Metro Penn Alum event
 2016 Invited Presenter, Penn Trustees event NYC
 2019 Inquiry Research Integrity Committee

University:

2004 Member, Student evaluation 10th Annual BBB Student Research Symposium
 2005 Moderator, INS Brain Bee
 2005-2007 Member, Neuroscience of Addiction Research (NARC) Advisory Board
 2006-2009 Neuroscience PIK Committee
 2006-2010 Organizer, Neuroscience of obesity journal club
 2007-2008 Winegrad thesis award committee
 2009-2013 Comprehensive Neuroscience Center, PIK Advisory Committee
 2009-2016 Organizer, Epigenetic Mouse Club, journal club
 2010 Departmental Review Committee, Dept. of Pharmacology, SOM
 2010-2012 Ad hoc dossier review, COAP, SOM
 2010-2015 Executive Committee, MINS
 2010-2011 Seminar Selection Committee, MINS
 2011-2013 Search Committee, Department of Neuroscience Chair, SOM
 2011-2017 Member, University APAC (Animal Program Advisory) Committee
 2011-2017 Behavioral and Cognitive Training Grant Advisory Committee
 2012 Penn Medicine Neuroscience Center (PMNC) Research Pilots Study Section
 2012 Brain Research Foundation selection reviews
 2012 Member, University Animal Review Committee
 2012-2013 Chair, Seminar Selection Committee, MINS
 2013-2015 Dossier review, COAP, SOM/CHOP
 2014 Organizer, MINS Annual Retreat
 2015-2016 Dossier review, COAP, SOM
 2015-2017 PMNC grant review committee
 2016 Search Committee, Department of Pharmacology Chair, SOM
 2016-2017 University Neuroscience Advisory Committee, MINS
 2016 Pew Scholar nomination review committee
 2016-2017 Neuroscience PIK Advisory Committee
 2018-present Director, Center for Epigenetic Research in Child Health and Brain Development

Graduate Group Service:

2003-2005 Member and Chair, NGG Rotation Talks Committee
 2004-2005 Speaker, NGG new student faculty research talks
 2004-2013 Interviewer and Member, NGG Admissions Committee

2005 Speaker, NGG recruitment overview
 2005 Interviewer, PGG Admissions
 2006-2008 Speaker, NGG Preliminary Prep Course
 2009-2011 Vice Chair, NGG
 2009-2012 Member, NGG Academic Review Committee
 2011 Interviewer, PGG Admissions
 2011 Faculty Presentation Panel, NGG
 2011-2012 Chair, Membership Committee, NGG
 2014 Speaker, Penn Neuroscience Public Lecture Series
 2015 Admissions Faculty Presentation, NGG
 2015-2016 Interviewer, NGG Admissions
 2015-2016 Interviewer, PGG Admissions
 2018-2019 Interviewer, PiN Admissions
 2018 Faculty Presentation Panel, PiN

Local and National Service

Editorial Boards and Journal Positions:

2007 Reviewing Editorial Board, *Frontiers in Neuroendocrinology*
 2007 Section Editor, Encyclopedia of Behavioral Neuroscience
 2007-2016 Editorial Board, *Endocrinology*
 2008-2011 Associate Editor, *The Journal of Neuroscience*
 2008-2011 Editorial Board, *Journal of Neuroscience*
 2009-2012 Editorial Board, *Frontiers in Neuroscience, Behavioral*
 2009-2010 Section Editor, Encyclopedia of Behavioral Neuroscience
 2010-present Editorial Board, *Biology of Sex Differences*
 2011-2017 Reviewing Editor, *Journal of Neuroscience*
 2018-2019 Guest Editor, *Neuropsychopharmacology*, special issue, Sex Matters
 2018-2019 Guest Editor, *Biological Psychiatry*, special issue, Early Life Adversity

Study Sections:

2008 Ad hoc, NIH study section, NDPR
 2010 Reviewer, NIH study section, ZRG1 IFCN-H
 2010 Reviewer, NIH study section, ZMH1 ERB-L
 2010 Reviewer, NIH study section, RFA BRAINS
 2011 Reviewer, NIH study section, NNRS
 2011 Chair, NIH study section, RFA Epigenomics in neurodevelopment
 2011 Reviewer, NIH study section, PMDA
 2012-2015 Permanent member, NIH study section, NNRS
 2012 Chair, NIH study section, RFA Sex Differences in Mental Health
 2013 Member, ZMH1 ERB-M EUREKA grants study section
 2015-2017 Chair, NIH study section, NNRS

Scientific Advisory Boards and Councils:

2013-present Scientific Advisory Board, UC, Irvine Conte Center, Tallie Baram PI
 2013-2016 Scientific Advisory Board, Vanderbilt Conte Center, Randy Blakely PI

2013-2017 Scientific Advisory Board, Epigenetics Mt. Sinai Conte Center, Eric Nestler PI
 2015-present Scientific Advisory Board, Mt Sinai Botanical Center on Resilience, Pasinetti PI
 2015-2021 Scientific Advisory Board, Max Planck Institute of Psychiatry, Munich
 2016-2018 Scientific Advisory Board, UCLA SCOR Center, Emeran Mayer PI
 2016-2019 Congressional Committee on Gulf War and Health, National Academy of Sciences
 2018 NICHD Strategic Planning Committee
 2018-present Scientific Advisory Board, Brain Research Foundation

Professional Service and Committees:

2003-2016 Co-organizer, University of Maryland and Penn Neuroendocrine Research Discussion Group
 2006 Organizer, CRF Social, Society for Neuroscience (SFN)
 2006 Symposium chair, SFN
 2006-2009 Organizing committee, Brain Steroid Hormone Workshop
 2006-2009 Organizer, Brain Steroid Hormone Workshop
 2006-2008 Ad hoc abstracts reviewer, Endocrine Society Annual Meeting
 2007 Organizer, Neuroendocrine Social, SFN
 2007 Minisymposium chair, SFN
 2007 Symposium chair, Society for the Study of Ingestive Behavior
 2007-2008 Organizer, American Neuroendocrine Society, Stress meeting
 2008-2011 Annual Meeting Steering Committee, Endocrine Society
 2008-2009 Organizer, Early Life Programming in Neurodevelopmental Disorders meeting
 2008-2010 International Advisory Board, The Parental Brain Conference, Germany
 2008, 2009 Women in Neuroscience Career panel, SFN
 2008 Reviewer, Autism Speaks Foundation grants
 2009 Meet the Experts lecture, SFN
 2009-2015 Council, Organization for the Study of Sex Differences
 2010 Symposium chair, SFN
 2010 Chair, Society for Behav Neuroendo social, SFN
 2010 Reviewer, March of Dimes grant proposals
 2010 Reviewer, Wellcome Trust grant proposals
 2010-present Section Co-Head Faculty of 1000, Neural Homeostasis
 2010 Neurobiology of Disease lecture, SFN
 2011 Nanosymposium Chair, SFN
 2011 NIMH Sex Differences in Mental Health Panel
 2011 Organizer, Stress Conference, Seattle
 2011-2014 Program Committee, Society of Behavioral Neuroendocrinology
 2012-2013 Organizing Committee, Parental Brain conference, Germany
 2012-2013 International Advisory Board, The Parental Brain Conference, Germany
 2013-2014 Program Committee, International Neuroendocrinology Federation
 2013 Member, NASA Decadal Review Behavioral Health workgroup
 2013-2018 Editorial Advisory Board, International Neuroendocrine Federation
 2014 Chair, NIMH Neuroimmunology and Development workshop
 2014-2016 Chair, Academic Success Panel, SFN
 2015 Press Conference Committee, SFN

2016-present Press Education Outreach and Planning Committee, SFN
 2016 Co-Host, Organization for the Study of Sex Differences Annual Meeting
 2016-2017 Co-Chair, Program Committee, Organization for the Study of Sex Differences
 2016-present Education Committee, American College of Neuropsychopharmacology
 2016 Presenter, Philadelphia Science Festival
 2017 Press Conference Moderator, SFN
 2017 Panelist, Women's Luncheon, SFN
 2017 Reviewer, Ireland Science Foundation Center Review, Cork, Ireland
 2018 Press Conference Moderator, SFN
 2018 Editor Search Committee, Brain Facts.org, SFN
 2018 Child Health Council Presenter and Discussant
 2019 Plan S Review Committee, ACNP

COMMUNITY SERVICE AND OUTREACH

2018 Hosted Public Reception and Lecture by Nicholas Kristof, Peabody Library
 2018-present Organizer and Director, Reading on the Brain Program
 Callaway Elementary School, Baltimore
 Science and mural art program focused on community discussion on the positive impact of reading on brain development and trauma/stress reduction.

TEACHING SERVICE

Department of Biomedical Science, SVM Courses

2004-2016 Biological Basis of Disease BBD
 125, 3rd year VMD students; 1 lecture hour/year

2005 Neuroscience (VANB604)
 125, 1st year VMD students; 2 lecture hours

2006 Neuroscience (VANB604)
 125, 1st year VMD students; 4 lecture hours

2007-2008 Neuroscience (VANB604)
 125, 1st year VMD students; 6 lecture hours/year

2009 Neuroscience (VANB604)
 125, 1st year VMD students; 7 lecture hours

2010 Neuroscience (VANB604)
 Course Co-Director
 125, 1st year VMD students; 7 lecture hours

2011 Neuroscience (VANB604)

	Course Director 125, 1 st year VMD students; 8 lecture hours, 4 lab hours
2012	Neuroscience (VANB604) Course Director 125, 1 st year VMD students; 8 lecture hours, 16 lab hours
2013	Neuroscience (VANB604) Course Director 125, 1 st year VMD students; 7 lecture hours, 22 lab hours
2014-2017	Neuroscience (VANB604) Course Director 125, 1 st year VMD students; 6 lecture hours/year, 22 lab hours/year

University Graduate Courses

2003	Neuropsychopharmacology (INSC576) 25 Ph.D. students; 1 lecture hour
2004	Behavioral Neuroscience (INSC595) 25 Ph.D. students; 3 lecture hours
2005	Neuropsychopharmacology (INSC576) 25 Ph.D. students; 1 lecture hour
2005	Advanced Systems Neuroscience (INSC598) 25 Ph.D. students; 1 lecture hour
2006	Behavioral Neuroscience (INSC595) 2 lectures 25 Ph.D. students; 2 lecture hours
2007, 2009	Organizer, NGG Seminar Journal Club (INSC577) 25 Ph.D. students; 1.5 hours/year
2007-2009	Topics in Molecular Medicine (CAMB/PHRM 542) 25 Ph.D./M.D. students; 1 lecture hour/year
2007, 2009	Neuropsychopharmacology (INSC576) 25 Ph.D. students; 1 lecture hour/year
2008-2011	Neuropharmacology (INSC596) 25 Ph.D. students; 1 lecture hour/year
2010	Lecture, 1 st year Neuro/psychology residents

- 2011-2014 Medical Pharmacology (PHRM600)
25 Ph.D. students; 1-2 lecture hours/year
- 2012 Neuropharmacology (INSC596)
25 Ph.D. students; 1 lecture hour
- 2014-2016 Neuropharmacology, PHRM510, 2 lectures
25 Ph.D. students; 2 lecture hours/year

University Undergraduate Courses

- 2006, 2011 Behavioral Genetics (BBB451)
25, 4th year B.S students; 1 lecture hour/year

Research Mentorship

Postdoctoral Fellows:

- | | | |
|--------------|---------------------------|--------------------------------|
| 2005-2007 | Katherine Semsar, Ph.D. | UC, Boulder |
| 2005-2011 | Diana Pankevich, Ph.D. | Pfizer |
| 2010-2012 | Alison Roland, Ph.D. | |
| 2011-2013 | Chris Howerton, Ph.D. | Biotech Equities Research |
| 2011-2013 | Casey Halpern, M.D. | Asst Prof, Stanford University |
| 2011-2016 | Stefanie Bronson, Ph.D. | Elsevier |
| 2012-present | Kathleen Morrison, Ph.D. | |
| 2014-present | Eldin Jasarevic, Ph.D. | |
| 2014-2018 | Bridget Nugent, Ph.D. | FDA |
| 2017-present | Christopher Morgan, Ph.D. | |
| 2018-present | Yasmine Cisse, Ph.D. | |

Thesis Advisor:

- | | | | |
|--------------|--------------------|--------------------|---------------|
| 2003-2008 | Sarah L. Teegarden | Ph.D. student NGG | Ph.D. awarded |
| 2003-2009 | Nirupa Goel | Ph.D. student NGG | Ph.D. awarded |
| 2003-2008 | Bridget R. Mueller | Ph.D. student NGG | Ph.D. awarded |
| 2004-2009 | Jonathan McEuen | Ph.D. student NGG | Ph.D. awarded |
| 2006-2011 | Gregory Dunn | Ph.D. student NGG | Ph.D. awarded |
| 2009-2016 | Christopher Morgan | Ph.D. student PGG | Ph.D. awarded |
| 2009-2014 | Alexis Gerber | Ph.D. student NGG | Ph.D. awarded |
| 2011-2015 | Ali Rodgers | Ph.D. student NGG | Ph.D. awarded |
| 2013-2018 | Jennifer Chan | Ph.D. student PGG | Ph.D. awarded |
| 2018-present | Nickole Kanyuch | M.D./Ph.D. student | |

Visiting and Rotation Students:

- | | | |
|-------------|-------------------|-------------------|
| 2004 fall | Marie Hildebrandt | Ph.D. student PGG |
| 2005 summer | Cristin Welle | Ph.D. student NGG |
| 2005 summer | Amy Brazil | VMD student |
| 2005 fall | Donald Foster | Ph.D. student PGG |

2006 summer	Marybless Atienza	Ph.D. student	NGG
2007 spring	Denise Cook	Ph.D. student	NGG
2007 summer	Maria Lim	Ph.D. student	NGG
2008 fall	Toni-Moi Prince	Ph.D. student	NGG
2009 summer	Shane Allen	Ph.D. student	NGG
2009 summer	Samantha White	Ph.D. student	NGG
2010 summer	Lauren Hakkinen	VMD student	
2010 summer	Kaitlyn Hellner-Burris	VMD student	
2011 summer	Carolyn Powell	VMD student	
2012 summer	John Sopronyi	VMD student	
2012 winter	Sonia Revello	Ph.D. student	PGG
2013 summer	Sarah Schoenhut	VMD student	
2014 summer	Bailey Baumann	VMD/Ph.D.	NGG
2014 fall	Sneha Narasimhan	M.D./Ph.D.	NGG
2015 summer	Theresa Patten	Ph.D. student	PGG
2016 summer	Nathaniel Sotuyo	VMD/Ph.D.	NGG
2016 summer	Caitlin Banducci	VMD student	
2016 summer	Ester Yang	VMD student	
2017-2018	Anouschka Ramsteijn	Fulbright fellow,	Netherlands
2019 summer	Thiago Bernardino	Fellow,	Brazil
2019 summer	Abigail Parakoyi	POSSE trainee,	Wellesley
2019 summer	Kristen Montgomery	Ph.D. student	PiN

Undergraduate Students:

2004-2005	Adam Small	B.S. student	Penn Medical School
2005-2007	Cate Jensen	BBB B.S. student	Columbia Ph.D. program
2006-2007	Andrew Hedin	BBB B.S. student	
2007-2008	Lauren Levy	BBB B.S. student	Mt Sinai Medical School
2008-2009	Julie Hsieh	BBB B.S. student	
2008-2009	Hollis Karoly	BBB B.S. student	
2008-2009	Annie Scott	B.S. student	
2008-2010	Adrienne Adler	BBB B.S. student	
2010-2011	David Fischer	Postbac student	Harvard Medical School
2011-2012	Casey Siegel	BBB B.S. student	Boston Univ. Grad. School
2011-2013	Isabelle Avildsen	BBB B.S. student	
2012-2013	Noah Sanders	BBB B.S. student	
2012-2013	Anand Tekriwal	BBB B.S. student	
2012-2014	Arjuna Keshavan	Vagelos Scholar	
2014-2017	Carly McDonald	BBB B.S. student	
2015-2016	Navya Dandu	B.S./M.D. student	

Research Assistants:

2003-2006	Kendall Carlin	Research Assistant	Tufts Veterinary School
2010-2013	Cynthia Taylor	Research Assistant	U. of Alabama Grad. School
2011-present	Jessica Fluharty	Research Assistant	
2013-2014	Amanda Vent	Research Assistant	

2013-present	Chris Howard	Research Assistant
2014-2015	Mufei Liu, M.S.	Research Assistant
2018-present	Victoria Meadows	Research Assistant
2018-present	Patrick Kane	Research Assistant
2019-present	Elizabeth Hill	Research Assistant

Preliminary and Thesis Committees

2004-2008	Chair, prelim. and thesis - Cara Harley	NGG student
2005	Member, thesis- Arati Kreibich	NGG student
2005-2006	Member, thesis- Jessica Cleck	PGG student
2005-2007	Chair, thesis - Caroline Patten	NGG student
2005	Member, prelim. - Neel Singhal	NGG student
2005	Member, prelim. - Marie Hildebrandt	PGG student
2008-2010	Member, thesis - Britter Gundersen	NGG student
2008-2011	Chair, thesis - Andrew Fairless	NGG student
2008	Member, prelim. - Marybless Atienza	NGG student
2010	Member, prelim. - Matt Young	NGG student
2010-2015	Member, thesis - Hannah Schoch	MCB student
2010-2014	Chair, prelim. and thesis - Ryan Tsou	NGG student
2010	Chair, prelim. - Toni Moi Prince	NGG student
2011	Member, prelim. - Morgan Bridi	NGG student
2011-2014	Chair, prelim. and thesis - Jesse Carlin	PGG student
2013	Member, prelim. - Natalie Rizzo	NGG student
2013	Member, prelim. - Leonardo Guercio	NGG student
2014	Member, prelim. - Kaitlyn Maier	NGG student
2016	Chair, prelim. - Sheila Shanmugan	NGG student
2016	Chair, prelim. - Claire Meurice	PGG student

External Student Advisory Committees

2005-2009	Member, Ryan Wynne Thesis Committee, Biochemistry - Lehigh University
2012-2014	Member, Neonatology fellow, Lori Christ, Advisory Committee
2012-2013	Member, Nicole Victoria Thesis Committee, Neuro Ph.D. - Georgia State
2017	External examiner, Madeline Pfau Thesis Committee, Mt Sinai

GRANT SUPPORT

Active Grants

3/1/19-2/28/24	PI: 10% <i>“Placental epigenetic mechanisms contributing to sex-specific impacts of maternal stress on fetal development”</i> NICHD, R01 HD097093
7/1/14-6/30/20	PI: 10%

“Maternal stress and the vaginal microbiome: impacts on brain development”

NIMH, R33 MH104184

7/1/15-6/30/25

PI: 25%

“Paternal stress epigenetic programming of offspring neurodevelopment”

NIMH, R37 MH108286

7/1/17-6/30/22

PI: 15%

“Female preconception stress programming of offspring neurodevelopment”

NIEHS, R01 ES028202

Completed Grants:

1998-2001

PI/Postdoctoral Fellow

“Characterization and Appetite of CRFR2 Deficient Mice”

National Research Service Award - NIDDK, F32DK009841

Total Project Funding: \$102,108

2001-2003

Postdoctoral Fellow, PI: Wylie W. Vale

Adler Foundation Research Grant

7/1/03-7/1/04

PI: 20%

“Involvement of CRF and Stress-sensitivity in Depression”

University of Pennsylvania Research Foundation Award

7/1/03-7/1/04

PI: 20%

“Involvement of CRF pathways in the Development of Depression”

McCabe Fund Fellow Award

7/1/03-7/1/05

PI: 20%

“Effects of Stress on Food Intake and Metabolism”

Molecular Studies in Digestive and Liver Disease Center Grant

2/1/04-2/1/06

PI: 20%

“The Genetics of Maternal Stress-sensitivity”

Basil O’Connor Research Award (March of Dimes)

7/1/04-7/1/06

PI: 20%

“Obesity as a Stress-sensitive Disease of Addiction”

Penn Diabetes Center Award

6/1/05-11/30/16

PI:20%

“Actions of CRF on 5-HT pathways in mood regulation”

NIMH, R01 MH073030
Total Project Funding: \$3,512,270

7/1/05-6/30/09 PI: 20%
“Stress and the Development of Obesity”
University of Pennsylvania Funds Block Grant

7/1/06-6/30/07 PI: 20%
“Genetics of Maternal Stress Sensitivity: Effects on Fetal Development”
University of Pennsylvania Research Foundation Award

7/1/06-6/30/09 PI: 20%
“Use of Prenatal Stress Model to Examine the Effects of MCHr1 Antagonists in Tests of Depression/Anxiety and High Fat Diet”
AstraZeneca Collaborative Grant

7/1/07-12/30/09 Co-PI 20%; PI – T. Brodtkin
“Stress Pathways in Autism: Examination of a Genetic Mouse Model of Stress Sensitivity”
University of Pennsylvania, Comprehensive Neuroscience Center Grant

4/1/09-8/31/10 PI: 20%
“Early life experience and neurodevelopmental disorders” – Conference
NIMH, R13 MH086157
Total Project Funding: \$49,700

6/1/10-5/30/12 Co-Inv, 20%; PI – T. Reyes
“Novel animal models of impaired social behavior and anxiety: a role for MeCP2”
NIMH, R21 MH091372
Total Project Funding: \$438,000

6/1/10-5/30/15 PI: 20%
“Early gestation as a sensitive period to stress in sex-dependent neurodevelopment”
NIMH, R01 MH091258
Annual Direct Costs: \$247,500
Total Project Funding: \$ 1,968,160

7/1/10-9/30/15 PI: 20%
“Early pregnancy stress programming of offspring emotionality”
NIMH, R01 MH087597
Annual Direct Costs: \$250,000
Total Project Funding: \$1,968,160

7/1/13-6/30/14 PI: 20%

“Prenatal stress effects on the vaginal and offspring microbiome”
University of Pennsylvania, Center for Host-Microbe Interactions
Total Project Funding: \$250,000

7/1/12-6/30/17 Co-Director, Sub-Project PI 15%; PI - C.N. Epperson
“*Prepubertal stress, windows of risk & sex bias for affective disturbance*”
NIMH, P50 MH099910, Sub-project 5718
Current Annual Direct Costs: \$811,700 (sub-project: \$194,486)
Current Total Direct Costs: \$3,823,528 (sub-project: \$986,500)
Role: Co-director and PI on Sub-Project 5718- mechanistic examination

7/1/17-6/30/18 ORWH/NIMH
Co-Director, Sub-Project PI 15%; PI - C.N. Epperson
“*Prepubertal stress, windows of risk & sex bias for affective disturbance*”
NIMH, P50 MH099910, Sub-project 5718
Direct Costs: \$150,000

PATENTS

Inventor, patent # 6,353,152, “Corticotropin-releasing factor receptor-2 deficient mice and uses thereof”

Inventor, patent # 7,674,463, “Method of inhibiting angiogenesis by administration of a corticotropin-releasing factor receptor-2 agonist

PUBLICATIONS (THE 10-15 BEST PUBLICATIONS IN YELLOW HIGHLIGHTED)

Peer-reviewed journal articles

1. Szot P, Bale TL, and Dorsa DM (1994) Distribution of messenger RNA for the vasopressin V1a receptor in the CNS of male and female rats. *Mol Brain Res* 24:1-10
(role: collaborator)
2. Bale TL, Pedersen CA, and Dorsa DM (1995) CNS oxytocin receptor mRNA expression and regulation by gonadal steroids, in *Advances in Experimental Medicine and Biology*, 395:269-280
3. Bale TL, Dorsa DM, and Johnston CA (1995) Oxytocin receptor mRNA expression in the ventromedial hypothalamus during the estrous cycle. *Journal of Neuroscience* 15(7): 5058-5064
4. Bale TL and Dorsa DM (1995) Sex differences in and effects of estrogen on oxytocin receptor messenger ribonucleic acid expression in the ventromedial hypothalamus. *Endocrinology* 136:27-32
5. Bale TL and Dorsa DM (1995) Regulation of oxytocin receptor mRNA in the ventromedial hypothalamus by testosterone and its metabolites. *Endocrinology* 136: 5135-5138
6. Bale TL and Dorsa DM (1997) Cloning, novel promoter sequence, and estrogen regulation of a rat oxytocin receptor gene. *Endocrinology* 138: 1151-1158

7. Bale TL and Dorsa DM (1998) NGF, cAMP, phorbol ester regulate oxytocin receptor gene transcription in SK-N-SH and MCF7 cells. *Mol Brain Res*, 53:130-137
8. Bale TL and Dorsa DM (1998) Transcriptional regulation of the oxytocin receptor gene. *Advances in Experimental Medicine and Biology*, 449:307-315
9. Bale TL, Contarino A, Smith GW, Chan R, Gold LH, Sawchenko PE, Koob GF, Vale WW, and Lee K-F (2000) Mice deficient for corticotropin-releasing hormone receptor-2 display anxiety-like behavior and are hypersensitive to stress. *Nature Genetics*, 24:410-414
10. Bale TL, Davis AM, Auger AP, Dorsa DM, and McCarthy MM (2001) CNS region specific oxytocin receptor expression: importance in regulation of anxiety and sex behavior. *Journal of Neuroscience*, 21:2546-2552
11. Bale TL, Lee K-F, and Vale WW (2002) The role of corticotropin-releasing factor receptors in stress and anxiety. *Integrative and Comparative Biology*, 42:552-555
12. Bale TL, Giordano FJ, Hickey RP, Huang Y, Nath AK, Peterson KL, Lee K-F, and Vale WW (2002) Corticotropin-releasing factor receptor-2 is a tonic suppressor of vascularization. *Proceedings of the National Academy of Sciences USA*, 99:7734-7739
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17. Bale TL and Vale WW (2004) CRF and CRF receptors: role in stress responsivity and other behaviors. *Annual Reviews in Pharmacology and Toxicology*, 44: 525-558.
18. Bale TL, Hoshijima M, Gu Y, Dalton N, Anderson KR, Lee K-F, Rivier J, Chien KR, Vale WW, and Peterson KL (2004) The cardiovascular physiologic actions of urocortin II: acute effects in murine heart failure *Proceedings of the National Academy of Sciences USA*, 9;101(10):3697-702
19. Gammie SC, Hasen NS, Stevenson SA, Bale TL, and D'Anna K (2005) Elevated stress sensitivity in CRFR2-deficient mice decreases maternal, but intermale aggression. *Behavioral Brain Research*, 7;160(1):169-77 (role: collaborator)
20. Bale TL (2005) Sensitivity to stress: dysregulation of CRF pathways and disease development. *Hormones and Behavior*. 48:1-10.
21. Bale TL (2005) Is Mom too sensitive? Impact of maternal stress. *Frontiers in Neuroendocrinology*. 26:41-49.
22. Bale TL (2006) Stress sensitivity and the development of affective disorders. *Hormones and Behavior*. 50:529.
23. Mueller BR and Bale TL (2006) Timing of in utero stress impacts birth weight and long-term body weight regulation. *Physiology and Behavior*, 88:605-614
24. Carlin K, Vale WW, and Bale TL (2006) Vital functions of CRF pathways in maintenance and regulation of energy homeostasis. *Proceedings of the National Academy of Sciences USA*, Mar 9;101(10):3697-702

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26. Goel N and Bale TL (2007) Identifying early behavioral and molecular markers of future stress sensitivity. *Endocrinology*, 148:4585-4591.
27. Mueller BR and Bale TL (2007) Early prenatal stress impact on coping strategies and learning performance is sex dependent. *Physiology and Behavior*, 91:55-65
28. Teegarden SL and Bale TL (2007) Dietary fat withdrawal produces an elevated stress state and decreased reward signaling. *Biological Psychiatry*, 61:1021-1029
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31. Teegarden S, Nestler EJ, and Bale TL (2008) Delta FosB-mediated alterations in dopamine signaling are normalized by a palatable high fat diet. *Biological Psychiatry*, 64:941-950.
32. Hao Z, Huang Y, Cleman J, Jovin IS, Vale WW, Bale TL, and Giordano FJ (2008) Urocortin2 inhibits tumor growth via effects on vascularization and cell proliferation. *Proceedings of the National Academy of Sciences USA*, 105:3939-3944.
33. Goel N and Bale TL (2008) Organizational and activational effects of testosterone on masculinization of female physiological and behavioral stress responses. *Endocrinology*, 149:6399-6405.
34. Weiser MJ, Goel N, Sandau US, Bale TL, and Handa RJ (2008) Androgen regulation of corticotropin-releasing hormone receptor-2 mRNA expression and receptor binding in the rat brain. *Experimental Neurology*, 214:62-68.
35. Kawahara Y, Grimberg A, Teegarden S, Mombereau C, Liu S, Bale TL, Blendy JA, Nishikura K (2008) Dysregulated editing of serotonin 2C receptor mRNAs results in energy dissipation and loss of fat mass. *Journal of Neuroscience*, 28:12834-12844.
36. McEuen J, Beck S, and Bale TL (2008) Failure to mount adaptive responses to stress results in dysregulation and cell death in the midbrain raphe. *Journal of Neuroscience*, 28:8169-77.
37. Mueller BR and Bale TL (2008) Sex-specific epigenetic programming of offspring emotionality following stress early in pregnancy. *Journal of Neuroscience*, 28:9055-65.
38. McEuen J, Semsar K, and Bale TL (2009) Influence of sex and CRF pathways as determinants in 5-HT sensitivity. *Endocrinology*, 150:3709-16.
39. Pankevich DE, Mueller BR, Brockel B, and Bale TL (2009) Prenatal stress programming of offspring feeding behavior and energy balance begins early in pregnancy. *Physiology Behav*, 98:94-102.
40. Goel N and Bale TL (2009) Examining the intersection of sex and stress in modeling neuropsychiatric disorders. *Journal of Neuroendocrinology*, 21:415-420.
41. Bale TL (2009) Neuroendocrine and immune influences on the CNS: it's a matter of sex. *Neuron*, 64:13.
42. McCarthy MM, Auger AP, Bale TL, De Vries GJ, Dunn GA, Forger NG, Murray EK, Nugent BM, Schwarz JM, and Wilson ME (2009) The epigenetics of sex differences in the brain. *Journal of Neuroscience*, 29:12815. (role: collaborator)

43. Teegarden SL, Scott AN, and Bale TL (2009) Early life exposure to a high fat diet promotes long-term changes in dietary preferences and central reward signaling. *Neuroscience*, 162:924-32.
44. Dunn G and Bale TL (2009) Maternal high fat diet promotes body length increases and insulin insensitivity in 2nd generation mice, *Endocrinology*, 150:4999-5009.
45. Goel N and Bale TL (2010) Sex differences in the serotonergic influence on the HPA stress axis, *Endocrinology*, 151:1784-1794.
46. Pankevich DE, Teegarden SL, Hedin AD, Jensen CL, and Bale TL (2010) Caloric restriction experience reprograms stress and orexigenic pathways and promotes binge-eating, *Journal of Neuroscience*, 30:16399-407.
47. Gregory Dunn, Christopher Morgan, and Bale TL (2010) Sex-specificity in transgenerational epigenetic programming. *Hormones and Behavior*, 59:290-295.
48. Bale TL, Baram TZ, Brown AS, Goldstein JM, Insel TR, McCarthy MM, Nemeroff CB, Reyes TM, Simerly RB, Susser ES, and Nestler EJ (2010) Early life programming and neurodevelopmental disorders. *Biological Psychiatry*, 68:314-319.
49. Bale TL (2011) Sex differences in prenatal epigenetic programming of stress pathways. *Stress*, 14:348-356.
50. Goel N, Plyer KS, Daniels D, Bale TL (2011) Neuronal activation of the HPA stress axis by serotonin is sexually dimorphic, *Endocrinology*, 152:2001-2010.
51. Dunn G and Bale TL (2011) Maternal high fat diet programs increased body size in third generation female offspring through the paternal lineage, *Endocrinology*, 152:2228-2236.
52. Morgan C and Bale TL (2011) Early prenatal stress epigenetically programs dysmasculinization in second-generation offspring via the paternal lineage, *Journal of Neuroscience*, 31:11748-55.
53. Gerber A and Bale TL (2012) Anti-inflammatory treatment ameliorates HPA stress axis dysfunction in a mouse model of stress sensitivity, *Endocrinology*, 153:4830-4837.
54. Howerton CL and Bale TL (2012) Prenatal programming: at the intersection of maternal stress and immune activation. *Hormones and Behavior*, 62:237-242.
55. Ismail N, Sotomayor-Zarate R, Bale TL, Blaustein JD, Gysling K, Tamashiro KL (2012) Environmental influences that alter the stress circuitry. *Horm Metab*, 44:592-597. (role: collaborator)
56. Bale TL and Chen A (2012) Minireview: CRF and Wylie Vale: a story of 41 amino acids and a Texan with grit. *Endocrinology*, 153:2556-2561.
57. Morgan CP and Bale TL (2012) Sex differences in microRNA regulation of gene expression: no smoke, just miRs. *Biology of Sex Differences*, 3:22.
58. Howerton CL, Morgan CP, Fischer DB, and Bale TL (2013) O-GlcNAc transferase (OGT) as a placental biomarker of maternal stress and reprogramming of CNS gene transcription in development. *Proceedings of the National Academy of Sciences USA*, 110:5169-5174.
59. Halpern CH, Tekriwal A, Santollo J, Keating JG, Wolf JA, Daniels D, and Bale TL (2013) Amelioration of binge eating by nucleus accumbens shell deep brain stimulation in mice involves D2 receptor modulation. *Journal of Neuroscience*, 33: 7122-7129.
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62. Bronson SL and Bale TL (2014) Prenatal stress-induced increases in placental inflammation and offspring hyperactivity are male-specific and ameliorated by maternal anti-inflammatory treatment. *Endocrinology*, 155:2635-2646.
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64. Epperson CN, Kim DR, and Bale TL (2014) Estradiol modulation of monoamine metabolism: one possible mechanism underlying sex differences in risk for depression and dementia. *JAMA Psychiatry*, 71:869-870.
65. Bale TL (2014) CRF as the key component of stress response systems. *Front Neuroendocrinology*, 35:159-160.
66. Morrison KE, Rodgers AB, Morgan CP, and Bale TL (2014) Epigenetic mechanisms in pubertal brain maturation. *Neuroscience*, 264:17-24.
67. Bale TL (2014) Lifetime stress experience: transgenerational epigenetics and germ cell programming. *Dialogues in Clinical Neuroscience*, 16:297-305.
68. Howerton AR, Roland AV, and Bale TL (2014) Dorsal raphe neuroinflammation promotes dramatic behavioral stress dysregulation. *Journal of Neuroscience*, 34:7113-7123.
69. Howerton CL and Bale TL (2014) Targeted placental deletion of OGT recapitulates the prenatal stress phenotype including hypothalamic mitochondrial dysfunction. *Proceedings of the National Academy of Sciences USA*, 111: 9639-9644.
70. Kim DR, Bale TL, and Epperson TL (2015) Prenatal programming of mental illness: current understanding of relationship and mechanisms. *Curr Psychiatry Rep*, 17:5. (role: collaborator)
71. Jasarevic E, Rodgers AB, and Bale TL (2015) A novel role for maternal stress and microbial transmission in early life programming and neurodevelopment. *Neurobiology of Stress*, 1:81-88.
72. Rodgers AB and Bale TL (2015) Germ cell origins of posttraumatic stress disorder risk: The transgenerational impact of paternal stress experience. *Biological Psychiatry*, 78(5):307-14.
73. Bronson SL and Bale TL (2015) The placenta as a mediator of stress effects on neurodevelopmental reprogramming. *Neuropsychopharmacology*, 41(1):207-18.
74. Nugent BM and Bale TL (2015) The omniscient placenta: Metabolic and epigenetic regulation of fetal programming. *Frontiers Neuroendocrinology*, 39:28-37.
75. Jasarevic E, Howerton CL, Howard C, and Bale TL (2015) Alterations in the vaginal microbiome by maternal stress are associated with metabolic reprogramming of the offspring gut and brain. *Endocrinology*, 156:3265-76.
76. Bale TL (2015) Epigenetic and transgenerational reprogramming of brain development. *Nature Reviews Neuroscience*, 16:332-344.
77. Bale TL and Epperson CN (2015) Sex differences and stress across the lifespan. *Nature Neuroscience*, 18:1413-20.
78. Rodgers AB, Morgan CP, Leu NA, and Bale TL (2016) Transgenerational epigenetic programming via sperm microRNA recapitulates effects of paternal stress. *Proceedings of the National Academy of Sciences USA*, 112:13699-704.

79. Jasarevic E, Morrison KE, and Bale TL (2016) Sex differences in the gut microbiome brain axis across the lifespan. *Philos Trans R Soc Lond Biol Sci*, 371:20150122.
80. Morrison KE, Narasimhan S, Fein E and Bale TL (2016) Peripubertal stress with social support promotes resilience in the face of aging. *Endocrinology*, 157:2002-2014.
81. Morrison KE, Epperson CN, Sammel MD, Ewing G, Snell JL, Hantsoo L, Kim DR and Bale TL (2016) Preadolescent adversity programs a disrupted maternal stress reactivity in humans and mice. *Biological Psychiatry*, 81(8):693-701.
82. Bronson SL, Chan J, and Bale TL (2017) Sex-specific neurodevelopmental programming by placental insulin receptors on stress reactivity and sensorimotor gating, *Biological Psychiatry*, 82(2):127-138.
83. Jasarevic E, Howard CD, Mistic AM, Beiting DP, and Bale TL (2017) Stress during pregnancy alters temporal and spatial dynamics of the maternal and offspring microbiome in a sex-specific manner, *Scientific Reports*, 7:44182.
84. Bale TL (2017) The placenta and neurodevelopment: sex differences in prenatal vulnerability, *Dialogues in Clinical Neuroscience*, 18:459-464.
85. Bale TL and Epperson CN (2017) Sex As a Biological Variable: Who, What, When, Why and How. *Neuropsychopharmacology*, 42:386-396.
86. Chan JC, Houghton AB, Bale TL (2017) Strained in Planning Your Mouse Background? Using the HPA Stress Axis as a Biological Readout for Backcrossing Strategies. *Neuropsychopharmacology*, 42(9):1749-1751.
87. Epperson CN, Sammel MD, Bale TL, Kim DR, Conlin S, Scalice S, Freeman K, Freeman EW (2017) Adverse Childhood Experiences and Risk for First-Episode Major Depression During the Menopause Transition. *Journal of Clinical Psychiatry*, 78(3):e298-e307.
88. Freeman A, Stanko P, Berkowitz LN, Parnell N, Zuppe A, Bale TL, Ziolek T, Epperson CN (2017) Inclusion of sex and gender in biomedical research: survey of clinical research proposed at the University of Pennsylvania. *Biology of Sex Differences*, 8:22.
89. Lee AG, Hagenauer M, Absher D, Morrison KE, Bale TL, Myers RM, Watson SJ, Akil H, Schatzberg AF, Lyons DM (2017) Stress amplifies sex differences in primate prefrontal profiles of gene expression. *Biology of Sex Differences*, 8:36.
90. Morgan CP, Bale TL (2017) Sex differences in microRNA-mRNA networks: examination of novel epigenetic programming mechanisms in the sexually dimorphic neonatal hypothalamus. *Biology of Sex Differences*, 8:27.
91. Chan JC, Nugent BM, Bale TL (2018) Parental advisory: Maternal and paternal stress can impact offspring neurodevelopment. *Biological Psychiatry*, 83:886-894.
92. Morgan CP, Chan JC, Bale TL (2018) Driving the next generation: Paternal life experiences transmitted via extracellular vesicles and their small RNA cargo. *Biological Psychiatry*, 85:164-171.
93. Bale TL (2018) Sex matters. *Neuropsychopharmacology*. 44:1-3.
94. Nugent BM, O'Donnell C, Bale TL (2018) Placental H3K27me3 establishes female resilience to prenatal insults. *Nature Communications*, 9:2555.
95. Jasarevic E, Howard CD, Morrison K, Mistic A, Weinkopff T, Scott P, Hunter C, Beiting D, Bale TL (2018) The maternal vaginal microbiome partially mediates the effects of prenatal stress on offspring gut and hypothalamus. *Nature Neuroscience*, 21:1061-1071.
96. Epperson CN, Bale TL (2019) Deciphering the brain before birth. *Biological Psychiatry*, 85:90.

Book Chapters

1. Bale TL: Epigenetics in early life programming, Neurobiology of Mental Illness, 4th Edition, Edited by Eric Nestler, Dennis Charney, Joseph Buxbaum, and Pamela Sklar, Oxford University Press, 2013
2. Nugent BM, Chan J, Jasarevic E, and Bale TL: Parental contributions to neurodevelopmental programming, Hormones, Brain and Behavior, 3rd Edition, Elsevier, 2016

MAJOR INVITED LECTURES

Plenary and Keynote Lectures

1. International Congress on Neuroendocrinology, Rouen, France, Plenary lecture, 2010
2. International Parental Brain Meeting, Edinburgh, Scotland, Plenary lecture, 2010
3. Israel Endocrine Society Meeting, Tel Aviv, Plenary lecture, 2012
4. Placenta and Epigenetics Conference, Kingston, Ontario, Plenary lecture, 2012
5. Australian Endocrine Society, Gold Coast, Queensland Australia, Plenary lecture, 2012
6. International Conference on Brain Development and Learning, Vancouver, B.C., Plenary lecture, 2013
7. Society for Neuroscience, Special lecture, 2013
8. French Neuroscience Society, Plenary lecture, 2014
9. Psychoneuroimmunology Research Society, Keynote lecture, 2014
10. American Academy of Neurology, Washington D.C., Hot Topics Plenary, 2015
11. American College of Neuropsychopharmacology, Plenary lecture, 2015
12. Congress on Steroid Research, Chicago, Keynote lecture, 2015
13. SLU Center Neuroscience Research Symposium, Keynote lecture, 2016
14. Brain Health Research Day, Ottawa Society for Neuroscience, Plenary lecture, 2016
15. 50th Anniversary Meeting, Society for the Study of Reproduction, Keynote lecture, 2017
16. Reproduction Society, Geneva, Switzerland, Keynote lecture, 2017
17. Teratology Society, Keynote lecture, 2017
18. 50th Anniversary Meeting, Society for the Study of Reproduction, Keynote lecture, 2017
19. International Society for Developmental Neuroscience, Plenary lecture, 2018
20. Goy Lecture, University of WI, Madison, Keynote lecture, 2018
21. Simson Lecture, The Ohio State University, Columbus, Keynote lecture, 2018
22. International Developmental Neuroscience Society, Nara, Japan, Plenary lecture, 2018
23. International Behavioral Neuroscience Society, Boca Raton, FL, Plenary lecture, 2018
24. Presidential Sesquicentennial Symposium, Wayne State, Detroit, Keynote lecture, 2018
25. European Congress Neuropsychopharmacology, Barcelona, Spain, Plenary lecture, 2018
26. Winter Conference on Brain Research, Aspen, CO, Keynote lecture, 2019
27. Swammerdam Institute of Life Sciences 20th Anniversary, University of Amsterdam, Keynote lecture, 2019
28. University of Miami Graduate Student Research Day, Miami, FL, Distinguished Lecturer, 2019
29. Joseph Erlanger Distinguished Lecture, APS Experimental Biology, 2019

30. Translational Research in Reproduction National Meeting, NICHD, Keynote lecture, 2019
31. Dutch Society for Neuroscience Meeting, The Netherlands, Keynote lecture, 2019
32. International Federation of Placenta Associations, Buenos Aires, Argentina, Keynote NIH Lecture Award, 2019
33. Developmental Affective Neuroscience Symposium, University of Pittsburgh, Keynote lecture, 2019

International

34. CNS oxytocin receptor mRNA expression and regulation by gonadal steroids. Oxytocin: Cellular and Molecular Approaches in Medicine and Research, International Meeting, Stade, Germany, 1995
35. Corticotropin-releasing factor family of ligands and their receptors, European Congress of Endocrinology, Lyon, France, 2003
36. Stress and maternal influence: role of CRF and receptors, Society for the Study of Reproduction, Vancouver, B.C., 2004
37. Stress sensitivity and models of affective disorders, Hans Selye Centennial Symposium on Stress, Montreal, Quebec, 2007
38. The sexually dichotomous stress response, European EndoNeuroPsycho meeting, Doorwerth, The Netherlands, 2007
39. Intersection of sex and stress in modeling affective disorders, International Workshop on Steroid Hormone Receptors and Neural Sex Differences, Gifu, Japan, 2008
40. Workshop on Endocrine Disrupters, Copenhagen, Denmark, 2011
41. International Neuroendocrine Conference, Neuroendocrine mechanisms during life transitions, Vina del Mar, Chile, 2011
42. Alberta Children's Hospital Research Institute for Child and Maternal Health, Annual Research Symposium on Epigenetics, Calgary, 2012
43. International Meeting on Steroids and the Nervous System, Torino, Italy, 2013
44. Norwegian School of Veterinary Medicine, Oslo, Norway, 2013
45. International Neuroendocrine Conference, Sao Paulo, Brazil, 2013
46. International Society for Behavioral Neuroscience Symposium, Dublin, Ireland, 2013
47. Program in Physiology, Frazer Mustard Institute of Human Development, University of Toronto, 2013
48. Max-Planck Institute of Psychiatry, Munich, Germany, 2014
49. Department of Physiology, University of Toronto, 2014
50. Department of Psychiatry, McGill University, Montreal, Quebec, 2015
51. European Behavioral Pharmacology Society Symposium, Rehovot, Israel, 2015
52. Brain Health Research Day, Society for Neuroscience, Ottawa Chapter, Canada, 2016
53. Society of Behavioral Neuroendocrinology Symposium, Montreal, Quebec, 2016
54. Neuroscience School of Advanced Studies, Non-coding RNA in Brain Function, Brixen, Italy, 2016
55. Munich Winter Conference on Stress Symposium, Garmisch-Partenkirchen, Germany, 2017
56. Neuroscience Institute, Paris, France, 2017

57. Neuroscience School of Advanced Studies, Epigenetic Transgenerational Programming, Sienna, Italy, 2017
58. Neuroscience School of Advanced Studies, Sex Differences in Stress, Vienna, Italy, 2018
59. International Congress Neuroendocrinology, Symposium, Toronto, 2018
60. Gordon Research Conference, Mammalian Reproduction, Tuscany, Italy, 2018
61. Neuroscience Program, University of British Columbia, Vancouver, 2018

National

62. Regulation and expression of a rat oxytocin receptor and its role in female sex behavior, National Science Foundation Young Investigator, Steroid Hormone Meeting, Breckenridge, CO, 1997
63. Diverse roles of corticotropin-releasing factor receptors and their ligands. Symposium for the Society for Integrative and Comparative Biology, Chicago, 2001
64. CRF and stress sensitivity: role in mood disorder development, American College of Neuropsychopharmacology, Puerto Rico, 2002
65. Stress sensitivity and obesity development, Symposium, North American Association for the Study of Obesity, Las Vegas, 2004
66. Evidence for regulation of neovascularization by a neuropeptide receptor, Internal Medicine Seminar, Yale School of Medicine, 2004
67. Stress sensitivity and depression, Symposium, Steroid Hormone Workshop, Breckenridge, CO, 2004
68. Neuropeptides involved in stress sensitivity. World Congress on Symposium, Women's Mental Health, Washington, D.C., 2004
69. In utero stress exposure impact on stress sensitivity and emotionality, Institute for Mental Health, University of Michigan, 2005
70. Stress sensitivity and development: impact on learning & memory and emotionality, Neuroscience Program, Michigan State University, 2005
71. Obesity and reward: impact of stress, Cardiology Grand Rounds, Yale School of Medicine, 2005
72. CRF and the HPA axis: stress and depression, Symposium chair, Symposium, Endocrine Society meeting, San Diego, 2005
73. Stress sensitivity as a model of homeostatic imbalance. Associate Symposium, Professional Sleep Society meeting, Denver, CO, 2005
74. Prenatal stress and developmental delay, University of Maryland, Baltimore, 2005
75. Symposium, Center for Neuroendocrine Studies, University of Massachusetts, Amherst, 2005
76. Stress, reward and obesity, Department of Psychiatry, Yale, 2006
77. The road to obesity: how stress drives us there, Society for the Study of Ingestive Behavior, Naples, FL, 2006
78. Sex differences in stress axis development: when and how does increased female sensitivity begin?, Steroid Hormone and Gene Expression Meeting, Breckenridge, CO, 2006
79. Sex and disease: Is stress the missing link?, Organization for the Study of Sex Differences, Washington, D.C., 2007

80. Stress and disease development, Program in Neuroscience, Colorado State, Fort Collins, 2007
81. Mechanisms of early life events and long-term obesity risk, Society for the Study of Ingestive Behavior (SSIB), Steamboat Springs, CO, 2007
82. Sex as a predisposing factor for affective disorders, ACNP Symposium, Boca Raton, FL, 2007
83. Modeling affective disorders, Minisymposium, Chair, Society for Neuroscience, 2007
84. Role of stress and epigenetics in affective disorder predisposition, Symposium, Stress 2008, American Neuroendocrine Society, 2008
85. Epigenetics and obesity risk, Department of Physiology, Southern Illinois University, 2008
86. Animal models of maladaptive stress responses: understanding affective disorder predisposition, Symposium, Endocrine Society, San Francisco, 2008
87. Meet The Experts Lecture, Society for Neuroscience, 2009
88. Stress and the Developing Brain, CNS Annual Meeting, Child Neurology, Louisville, Kentucky, 2009
89. Sex differences in stress and coping strategies: Are we wired before birth?, Program in Neuroscience, University of Cincinnati, 2009
90. Maturation and sex differences in female stress responsivity Steroid Hormones and Brain Function Workshop, Breckenridge, CO, 2009
91. Mouse models and sex differences in affective disorders, NIMH, Developmental Research on Brain-Behavior Interactions, 2009
92. Intrauterine environmental programming of obesity, FASEB Summer Research Conference, The Physiological Basis of Obesity Therapeutics, Snowmass, CO, 2009
93. Transgenerational Epigenetics Symposium, Society for Neuroscience, San Diego, CA, 2010
94. Neurobiology of Disease Workshop, Society for Neuroscience, San Diego, CA, 2010
95. Guest Lecture, Cold Spring Harbor, 2010
96. Early life programming and epigenetics, Autism Speaks Scientific Advisory Board meeting, Washington, D.C., 2010
97. Department of Neuroscience, University of Minnesota, 2010
98. Naomi Berrie Diabetes Center, Columbia University Medical Center, 2010
99. Sex-Specific Transgenerational Programming of Stress Dysregulation, American College of Neuropsychopharmacology, Miami, FL, 2010
100. Neuroscience Dept, Tufts University, Boston, MA, 2011
101. Women's Mental Health Panel, National Institutes of Mental Health, Washington, D.C., 2011
102. Department of Neuroscience, Seminar, Graduate student invited speaker, UC, San Diego, 2011
103. Physiology Dept & Stress Center, University of Minnesota, 2011
104. Graduate Program in Physiology, Seminar, Emory, 2012
105. Department of Neuroscience, Seminar, UC, Irvine, 2012
106. Organization for the Study of Sex Differences, Baltimore, MD, 2012
107. Neuroscience Program Retreat, Stanford, 2012
108. Department of Neuroscience, Seminar, Vanderbilt, 2012
109. Developmental Programming of Metabolic Syndrome Symposium, University of Michigan, 2012
110. Endocrine Society Symposium, Houston, TX, 2012

111. American College of Neuropsychopharmacology Symposium, Hollywood, FL, 2012
112. American Institute of Cancer Research Symposium, Washington, D.C., 2012
113. Society for Biological Psychiatry Symposium, San Francisco, CA, 2013
114. Program in Neurobiology Seminar, University of Washington, 2013
115. Neuroscience Graduate Program, Wellesley College, 2013
116. American College of Neuropsychopharmacology Symposium, Hollywood, FL, 2013
117. Program in Neuroscience, University of Maryland, Baltimore, 2013
118. Center for Reproductive Science, Department of Medicine, Northwestern University, 2014
119. Integrative Cell Signaling and Neurobiology of Metabolism, Yale, 2014
120. Institute for Reproductive Health and Regenerative Medicine, University of Kansas Medical Center, 2014
121. Organization for the Study of Sex Differences, Annual meeting, Minneapolis, MN, 2014
122. American College of Neuropsychopharmacology Symposium, Phoenix, AZ, 2014
123. Shaping the Developing Brain, Aspen Brain Forum, New York Academy of Sciences, 2014
124. Microbiome and Neurodevelopment Symposium, Rockefeller University, 2014
125. Behavioral Neuroscience Program, University at Buffalo, 2014
126. American College of Neuropsychopharmacology Symposium Importance of Sex as a Biological Factor Panel, 2015
127. NIMH Conte Center, Harvard, Boston, 2015
128. Department of Psychiatry Research Day, UNC, Chapel Hill, 2015
129. Behavioral Epigenetics: Conserved Mechanisms meeting, HHMI/Janelia Research Campus, 2015
130. Center for Neuroendocrine Studies Symposium, University of Massachusetts, Amherst, 2015
131. Department of Psychiatry and Behavioral Neurobiology, University of Alabama, Birmingham, 2015
132. Translational Epigenetics, Frontline Genomics conference, Boston, MA, 2015
133. Neuroscience Department, University of Virginia, 2015
134. Testes Workshop, Salt Lake City, UT, 2015
135. National Institute of Mental Health, Bethesda, MD, 2015
136. Society for Reproductive Investigation, San Francisco, CA, 2015
137. Endocrine Society Symposium, San Diego, CA, 2015
138. Life Sciences and Society, Epigenetics symposium, University of Missouri, Columbia, 2015
139. Program in Neurobiology, University of Mississippi Medical Center, 2015
140. Animal Models of Human Mental Illness, Branbury Conference, Cold Spring Harbor, 2016
141. Society of Biological Psychiatry Symposium, Atlanta, GA, 2016
142. Epigenetics Symposium, Michigan State University, 2016
143. NIH Transgenerational Inheritance Workshop, 2016
144. Neuroscience Program, Temple University, 2016
145. Neurobiology of Stress Workshop, Newport Beach, CA, 2016
146. Center for Neurobiology of Stress, SCOR Symposium, UCLA, 2016
147. Greater New Orleans SFN Chapter Distinguished Traveling Scientist, Tulane University, 2016
148. Society for Neuroscience, Epigenetics Symposium, San Diego, CA, 2016
149. Gut Microbiota and Probiotics Throughout the Lifespan Symposium, Harvard, 2016

150. Biochemistry and Molecular Pharmacology, University of Massachusetts Medical School, 2016
151. Department of Psychiatry, Miami School of Medicine, 2017
152. Transgenerational Programming Symposium, NIEHS, 2017
153. Epigenetics Symposium, University of Michigan, 2017
154. Program in Neuroscience, Syracuse, 2017
155. Neuroscience Graduate Program, Mt. Sinai Medical School, NY, 2017
156. Neuroscience Program, University of Minnesota, 2017
157. Neuroscience Program, University of Michigan, 2017
158. Zilkha Neurogenetic Institute, University of Southern California, 2017
159. Graduate Program in Neuroscience, University of Iowa, 2017
160. Brains and Behavior Distinguished Lecture, Georgia State University, 2017
161. DOHaD conference University of Michigan, Ann Arbor, 2017
162. American College of Neuropsychopharmacology, Palm Springs, 2017
163. NIEHS, Andrology Symposium, Durham, NC 2017
164. AAAS Neuroscience Symposium, Austin, TX 2018
165. Experimental Biology, APA Symposium, San Diego, CA 2018
166. McLean Hospital, Harvard, 2018
167. Department of Environmental Health, Harvard, 2018
168. Child Health Council, Cambridge, 2018
169. Sackler Winter Conference, Turks and Caicos, 2019
170. W.M. Keck Center for Behavioral Biology, NCSU, 2019
171. Columbia University, Psychiatry, Grand Rounds, 2019

Local

172. Obesity as a stress-sensitive disease of addiction, Monell Chemical Senses Center, Philadelphia, PA 2005
173. Stress and obesity development, Bryn Mawr College, Bryn Mawr, PA, 2005
174. Prenatal stress and delayed brain development, Drexel University, 2006
175. Is stress driving us down the road of obesity?, Drexel-Hahneman, Philadelphia, PA, 2006
176. Stress and obesity risk, Psychology Department, Haverford College, 2007
177. Stress and affective disorders: what we can learn from animal models, Department of Psychology, Rutgers University, 2007
178. Stress sensitivity and affective disorders, Department of Psychiatr, McLean Hospital, Harvard, 2008
179. Sex differences in response to early gestation stress, Early life programming and neurodevelopmental disorders, Philadelphia, PA, 2009
180. Society of Biological Psychiatry Symposium, Philadelphia, PA, 2012
181. Stress Neurobiology Workshop Symposium, Philadelphia, PA, 2012
182. Center for Neuroscience Program, University of Pittsburgh, 2013
183. Department of Animal Sciences, Rutgers University, 2014
184. Organization for the Study of Sex Differences, Philadelphia, PA, 2016

Internal

185. Role of CRF family members in homeostasis, Diabetes Center seminar, 2003
186. Stress-sensitivity: role in development of obesity and depression, 15th Annual Behavioral and Cognitive Neuroscience Student Research Symposium, 2004
187. Too stressed to eat? A role of sensitivity in obesity, SVM Research Retreat, 2004
188. Obesity as a stress-sensitive disease of addiction, Center for Neurobiology and Behavior seminar, 2004
189. Cheeseburgers in paradise: obesity and reward, SVM Research Retreat, 2005
190. If you give a mouse a stress...., 21st Annual INS Research Retreat, 2005
191. Stress sensitivity and disease development, Merck/Penn Sleep Center Retreat, 2005
192. Stress and obesity development, Overseers meeting, SVM, 2005
193. Stress and obesity development: a multifaceted approach, IDOM seminar, 2005
194. Stress and coping strategies: are we wired before birth?, SIB training grant retreat, 2006
195. Stress and an increased drive for caloric over consumption, IDOM translational seminar series, 2006
196. The role of reward systems in obesity, NARC research retreat, 2006
197. Prenatal programming of neurodevelopmental disorders, Research Seminar, Neonatology, CHOP, 2007
198. The role for stress and reward in obesity, Research Seminar, Center for Molecular Studies in Digestive and Liver Disease, 2007
199. Stress and reward in obesity, Research Seminar, Weight and Eating Disorders Clinic, 2008
200. Developing animal models of affective disorders, Research Seminar, Penn Vet Neuroscience, 2008
201. Early prenatal stress programming of stress sensitivity, Research Seminar, Schizophrenia Research Center, 2009
202. Neurodevelopmental disorder programming: are we wired before birth?, Pathobiology Department Seminar, 2010
203. Cell and Developmental Biology Retreat, 2010
204. Center for Neurobiology and Behavior Retreat, 2011
205. Mahoney Institute for Neuroscience Annual Retreat, 2011
206. Institute for Diabetes, Obesity and Metabolism, 2011
207. IDDRC seminar, CHOP, 2013
208. Research Seminar, Neonatology, CHOP, 2013
209. FOCUS seminar, SOM, 2013
210. IDOM Spring Retreat, 2014
211. Epigenetics and Metabolism Retreat, 2015
212. Addiction Center, SOM, 2016
213. Animal Models in Research, ULAR residents, 2016
214. UMB, Center for Epigenetics Research on Child Health and Brain Development, 2018
215. UMB, Pediatrics Grand Rounds, 2018
216. UMB, Obstetrics Faculty meeting, 2018
217. UMB, Pediatrics Faculty meeting, 2018
218. UMB, Brain Science Research Consortium Unit, 2018
219. UMB, Program in Neuroscience, 2018
220. UMB, Obstetrics Grand Rounds, 2018
221. UMB, Neurobiology Faculty meeting, 2018

222. UMB, SOM Festival of Science, 2018
223. UMB, SOM Council meeting, 2019
224. UMB, SOM Summer Student Research Series, 2019