

## MELINDA ELIZABETH SNEP WILSON, PH.D.

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### PERSONAL

Born: Belleville, IL

### EDUCATION

1992 B.S., Microbiology, University of Illinois, Urbana-Champaign, IL  
 1997 Ph.D., Molecular Biology, Loyola University Chicago, Chicago, IL

### PROFESSIONAL EXPERIENCE

1990-1992 Undergraduate Research Assistant, Department of Entomology, University of Illinois  
 1992-1997 Graduate Research Assistant, Program in Molecular Biology, Loyola University Chicago  
 1997-2000 Postdoctoral Scholar, Department of Physiology, University of Kentucky  
 2000-2002 Research Associate, Department of Physiology, University of Kentucky  
 2002-2008 Assistant Professor, Department of Physiology, University of Kentucky  
 2008-Present Associate Professor, Department of Physiology, University of Kentucky  
 2017-Present Director of Graduate Studies, Master of Science in Medical Sciences, University of Kentucky  
 2021-Present Vice Chair, Department of Physiology, University of Kentucky

### AWARDS AND HONORS

1991 Hughes Undergraduate Research Award, University of Illinois  
 1992-1994 Graduate Research Fellowship, Loyola University  
 1994-1997 National Research Service Award Individual Predoctoral Fellowship, NIH/NIAAA  
 1997 National Institutes of Health Postdoctoral Training Grant Fellowship, "Molecular and Cellular Aspects of Brain Aging," University of Kentucky  
 1998-2001 National Research Service Award Individual Postdoctoral Fellowship, NIH/NIA  
 1999 Endocrine Society 81<sup>st</sup> Annual Meeting, San Diego CA, Travel Award  
 2000 Young Investigator Award, Workshop on Steroid Hormone and Brain Function, National Science Foundation

2000 Kentucky Chapter of Society for Neuroscience, Spring Neuroscience Day, Poster presentation, Postdoctoral Division, 1<sup>st</sup> Place

2002-2003 Bridging Interdisciplinary Careers in Women's Health (BIRCWH) Scholar

2004-2014 Charles Wethington Research Excellence Award, University of Kentucky College of Medicine

2006 Abraham Flexner Master Educator Award in Outstanding Teaching Contribution or Mentorship, Center for Excellence in Medical Education, University of Kentucky College of Medicine

2007 Holsinger Award for Teaching Excellence, University of Kentucky, Department of Physiology

2009 Joe and Mabel Meites Distinguished Lecturer Seminar, Michigan State University

2012 Abraham Flexner Master Educator Award in Educational Leadership and Administration, Center for Excellence in Medical Education, University of Kentucky College of Medicine

### **EXTRAMURAL FUNDING**

**Current:**

7/19-6/24 "Cooperation of CD8+ T cells and phagocytes to eliminate Toxoplasma cysts" (Suzuki, Y) NIH/NIAID (R01 AI095032). Role: Collaborator

**Pending:**

12/22-11/27 "The role of macrophage metabolism and age in recovery from spinal cord injury" (Gensel, JC) NIH/NINDS (R01 NS114580) Role: Co-I

**Completed:**

8/94-5/97 "Fetal alcohol exposure and female reproductive development" National Research Service Award Individual Predoctoral Fellowship, NIH/NIAAA (F31 AA05395).

6/97-6/98 "The Molecular and Cellular Basis of Brain Aging" Institutional Training Grant Fellowship, University of Kentucky, NIH/NIA (T32 AG00024)

7/98-6/01 "Neuroprotective actions of estrogen in cortical explants" National Research Service Award Individual Postdoctoral Fellowship, NIH/NIA (F32 AG05818).

7/01-6/02 "Estradiol neuroprotection following a stroke-like injury in cortical explant cultures" American Heart Association Postdoctoral Fellowship (0120400B).

7/02-6/03 "Building Interdisciplinary Research Careers in Women's Health (BIRCWH)" (K12 DA14040) Principal Investigator: Emery A. Wilson, M.D. Role: Trainee

5/03-4/04 "Estrogen and HIV dementia" NIH/NIA (R03 AG22122) Role: Principal Investigator

7/06-6/08 "Estrogen Receptor Alpha mRNA Regulation in the Mouse Cortex Prior to and Following a Stroke-like Injury" American Heart Association Predoctoral Fellowship (0615231B) Principal Investigator: Amanda K. Prewitt. Role: Mentor

7/03-6/08 "HIV protease inhibitors, macrophage function and estrogen" NIH/NHLBI (R01 HL73693) Role: Principal Investigator-no cost extension (6/30/10)

7/05-6/10 "Center of Biomedical Research Excellence in Women's Health" NIH/NCRR (P20 RR15592) Principal Investigator: Thomas E. Curry, PhD. Role: Co-Investigator

- 7/09-6/12 “Developmental regulation of estrogen receptor-alpha” NSF (IOS0919944). Role: Principal Investigator
- 4/11-3/13 “Mechanisms of Age-Related Changes in Estrogen Receptor-Beta Expression in the rat” NIH/NIA (R03 AG038909) Role: Collaborator
- 8/11-7/15 “Molecular regulation of estrogen receptor gene expression in the adult brain” NSF (IOS1121129) Role: Principal Investigator
- 1/16-6/19 “Neurosteroid Modulation of Tonic GABAA Receptor Plasticity and its Implication in Diabetes” (Boychuk, C) American Heart Association (SDG26590000) Role: Co-Mentor
- 10/15-9/20 “The Role of Macrophage Phenotype and Age in Spinal Cord Injury” (Gensel, JC) NIH/NINDS (R01NS091582) Role: Co-I
- 7/17-6/20 “Effector Molecules for IFN-gamma-mediated Prevention of Toxoplasma Proliferation in the Brain” (Suzuki, Y) NIH/NIAID (R21AI134323-01) Role: Collaborator
- 9/15-7/21 “The role of macrophage metabolism and age in recovery from spinal cord injury” (Gensel, JC) NIH/NINDS (R01 NS114580) Role: Co-I

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## TEACHING EXPERIENCE

### **CLASSROOM TEACHING**

#### **University of Kentucky**

##### Fall 1997

PGY 710 Neurobiology of Aging, “Neurotrophins”-2 lectures

##### Fall 1999

PGY 607 Physiology of Reproduction, “Gonadotropins”-2 lectures

##### Spring 2000

GRN 612 Biology of Aging, “Cellular Mechanisms of Aging”-1 lecture

##### Fall 2002

PGY 710 Neurobiology of Aging, “Neuroendocrine Aging and Estrogen”- 2 lectures

##### Spring 2004

PGY 206 Elementary Physiology, “The Endocrine System”-5 lectures

##### Fall 2004- Spring 2005

PGY 206 Elementary Physiology, “The Endocrine System” -5 lectures

PGY 774 Seminar in Physiology-Course Director

IBS 606 Integrated Biomedical Systems, “Menopause and the Mechanisms of Estrogen Action”-3 lectures

PGY 206 Elementary Physiology, “The Endocrine System”-5 lectures

PGY 774 Seminar in Physiology-Course Director

##### Fall 2005- Spring 2006

PGY 602 Readings in Systems, Cellular and Molecular Physiology-Course Director  
 PGY 206 Elementary Physiology, "The Endocrine System," and "Cellular Physiology"-7 lectures  
 IBS 606 Integrated Biomedical Systems, "Menopause and the Mechanisms of Estrogen Action"-3 lectures  
 PGY 206 Elementary Physiology, "The Endocrine System," and "Cellular Physiology"-7 lectures  
 PGY 602 Readings in Systems, Cellular and Molecular Physiology-Course Director

Fall 2006- Spring 2007

PGY 206 Elementary Physiology, "The Endocrine System," and "Cellular Physiology" -7 lectures  
 PT 854 Pathophysiology, "Disorders of the Endocrine System"-2 lectures  
 IBS 606 Integrated Biomedical Systems, "Menopause and the Mechanisms of Estrogen Action"-2 lectures  
 PGY 206 Elementary Physiology, "The Endocrine System," and "Cellular Physiology"-7 lectures  
 PT 854 Pathophysiology, "Disorders of the Endocrine System"-2 lectures

Fall 2007- Spring 2008

PGY 206 Elementary Physiology, "The Endocrine System," and "Cellular Physiology" -7 lectures  
 PGY 814 Human Function, "The Endocrine System"-12 lectures  
 IBS 606 Integrated Biomedical Systems, "Menopause and the Mechanisms of Estrogen Action"-3 lectures  
 PGY 206 Elementary Physiology, "The Endocrine System," and "Cellular Physiology"-7 lectures  
 PT 854 Pathophysiology, "Disorders of the Endocrine System"-2 lectures

Fall 2008- Spring 2009

PGY 206 Elementary Physiology, "The Endocrine System" -5 lectures  
 PGY 814 Human Function, "The Endocrine System"-12 lectures  
 IBS 606 Integrated Biomedical Systems, "Menopause and the Mechanisms of Estrogen Action"-3 lectures  
 PGY 206 Elementary Physiology, "The Endocrine System," and "Cellular Physiology"-7 lectures  
 PT 854 Pathophysiology, "Disorders of the Endocrine System"-2 lectures

Fall 2009- Spring 2010

PGY 206 Elementary Physiology, "The Endocrine System," and "Cellular Physiology" -7 lectures  
 PGY 814 Human Function, "The Endocrine System"-12 lectures  
 IBS 606 Integrated Biomedical Systems, "Menopause and the Mechanisms of Estrogen Action"-3 lectures  
 PT 854 Pathophysiology, "Disorders of the Endocrine System"-2 lectures

PGY 630 Cellular and Molecular Mechanisms of Aging, "Aging and the Endocrine System"- 3 lectures

Summer 2010

PGY Colloquium Introduction to Graduate School. "Career Development"

Fall 2010- Spring 2011

PGY 502 Principles of Systems, Cellular and Molecular Physiology, "Male and Female Reproduction"-3 lectures

PGY 602 Readings in Systems, Cellular and Molecular Physiology- 1 discussion session

PT 854 Pathophysiology, "Disorders of the Endocrine System"-2 lectures

PGY 814 Human Function, "The Endocrine System"-12 lectures

PGY 602 Oral Exam in Systems, Cellular and Molecular Physiology- 24 exam hours

IBS 606 Integrated Biomedical Systems, "Menopause and the Mechanisms of Estrogen Action"-3 lectures

Summer 2011

PGY Colloquium Introduction to Graduate School. "Career Development"

Fall 2011- Spring 2012

PGY 502 Principles of Systems, Cellular and Molecular Physiology, "Male and Female Reproduction"-3 lectures

PGY 602 Readings in Systems, Cellular and Molecular Physiology- 2 discussion sessions

PT 854 Pathophysiology, "Disorders of the Endocrine System"-2 lectures

PGY 814 Human Function, "The Endocrine System"-12 lectures

PGY 602 Oral Exam in Systems, Cellular and Molecular Physiology- 24 exam hours

IBS 606 Integrated Biomedical Systems, "Reproduction, Menopause and the Mechanisms of Estrogen Action"-5 lectures

PGY 630 Cellular and Molecular Mechanisms of Aging, "Aging and the Endocrine System"- 3 lectures

Fall 2012- Spring 2013

PGY 502 Principles of Systems, Cellular and Molecular Physiology, "Male and Female Reproduction"-3 lectures

PGY 602 Readings in Systems, Cellular and Molecular Physiology- 2 discussion sessions

PT 854 Pathophysiology, "Disorders of the Endocrine System"-2 lectures

PGY 814 Human Function, "The Endocrine System"-12 lectures

PGY 602 Oral Exam in Systems, Cellular and Molecular Physiology- 24 exam hours

IBS 606 Integrated Biomedical Systems, "Reproduction, Menopause and the Mechanisms of Estrogen Action"-5 lectures

Summer 2013

PGY Colloquium Introduction to Graduate School. "Career Development"

Fall 2013- Spring 2014

MD 824 Endocrine and Reproductive Systems-6 lectures

PT 854 Pathophysiology, "Disorders of the Endocrine System"-2 lectures

|                               |   |
|-------------------------------|---|
| IBS 606                       | Physiological Communications, Course Director and “Neural Development”-5 lectures                   |
| <u>Fall 2014- Spring 2015</u> |   |
| MD 824                        | Endocrine and Reproductive Systems-6 lectures   |
| PT 854                        | Pathophysiology, “Disorders of the Endocrine System”-2 lectures                                     |
| IBS 606                       | Physiological Communications, Course Director and “Neural Development”-4 lectures                   |
| HON152                        | Human Aging, Course Director and Lecturer   |
| <u>Fall 2015- Spring 2016</u> |   |
| MD 824                        | Endocrine and Reproductive Systems-6 lectures   |
| PT 854                        | Pathophysiology, “Disorders of the Endocrine System”-2 lectures                                     |
| IBS 606                       | Physiological Communications, Course Director and “Neural Development”-5 lectures                   |
| HON152                        | Human Aging, Course Director and Lecturer   |
| <u>Fall 2016- Spring 2017</u> |   |
| HON152                        | Human Aging, Course Director and Lecturer   |
| PT 854                        | Pathophysiology, “Disorders of the Endocrine System”-2 lectures                                     |
| PGY 502                       | Principles of Systems, Cellular and Molecular Physiology, “Male and Female Reproduction”-4 lectures |
| PGY 602                       | Readings in Systems, Cellular and Molecular Physiology- 2 discussion sessions                       |
| IBS 606                       | Physiological Communications, Course Director and “Neural Development”-5 lectures                   |
| <u>Fall 2017- Spring 2018</u> |   |
| PT 854                        | Pathophysiology, “Disorders of the Endocrine System”-2 lectures                                     |
| PGY431                        | Neuroendocrinology, Co-Lecturer and Co-Course Director  |
| PGY 502                       | Principles of Systems, Cellular and Molecular Physiology, “Male and Female Reproduction”-4 lectures |
| PGY 602                       | Readings in Systems, Cellular and Molecular Physiology- 2 discussion sessions                       |
| IBS 606                       | Physiological Communications, Course Director and “Neural Development”-5 lectures                   |
| HON 152                       | Human Aging, Course Director and Lecturer   |
| <u>Fall 2018- Spring 2019</u> |   |
| PT 854                        | Pathophysiology, “Disorders of the Endocrine System”-2 lectures                                     |
| PGY431                        | Neuroendocrinology, Co-Lecturer and Co-Course Director  |
| PGY 502                       | Principles of Systems, Cellular and Molecular Physiology, “Male and Female Reproduction”-4 lectures |
| PGY 602                       | Readings in Systems, Cellular and Molecular Physiology- 4 discussion sessions                       |
| MD 824                        | Endocrine and Reproductive Systems- 15 lectures   |
| IBS 606                       | Physiological Communications, Course Director and “Neural Development”-9 lectures                   |

HON 152 Human Aging, Course Director and Lecturer

Fall 2019- Spring 2020

PT 854 Pathophysiology, "Disorders of the Endocrine System"-2 lectures

PGY 431 Neuroendocrinology, Lecturer and Course Director

PGY 502 Principles of Systems, Cellular and Molecular Physiology, "Endocrine System"- 11 lectures

PGY 602 Readings in Systems, Cellular and Molecular Physiology- 4 discussion sessions

PHA 424G Pharmacology of the Human Endocrinology and Reproduction Endocrine and Reproductive Systems- 20 lectures, Co-Course Director

IBS 606 Physiological Communications, Course Director and "Neural Development"-9 lectures

HON 152 Human Aging, Course Director and Lecturer

MD 824 Endocrine and Reproductive Systems- 15 lectures

Fall 2020- Spring 2021

PT 854 Pathophysiology, "Disorders of the Endocrine System"-2 lectures

PGY 431 Neuroendocrinology, Lecturer and Course Director- 2 semesters

PGY 502 Principles of Systems, Cellular and Molecular Physiology, "Endocrine System"- 11 lectures

PGY 602 Readings in Systems, Cellular and Molecular Physiology- 4 discussion sessions

PHA 424G Pharmacology of the Human Endocrinology and Reproduction Endocrine and Reproductive Systems- 20 lectures, Co-Course Director

IBS 606 Physiological Communications, Course Director and "Neural Development"-9 lectures

MD 824 Endocrine and Reproductive Systems- 15 lectures

Fall 2021- Spring 2022

PT 854 Pathophysiology, "Disorders of the Endocrine System"-2 lectures

PGY 431 Neuroendocrinology, Lecturer and Course Director- 2 semesters

PGY 502 Principles of Systems, Cellular and Molecular Physiology, "Endocrine System"- 12 lectures

PGY 602 Readings in Systems, Cellular and Molecular Physiology- 4 discussion sessions

PHA 424G Pharmacology of the Human Endocrinology and Reproduction Endocrine and Reproductive Systems- 20 lectures, Co-Course Director

IBS 606 Physiological Communications, Course Director and "Neural Development"-9 lectures

MD 824 Endocrine and Reproductive Systems- 15 lectures

Fall 2022- Spring 2023

PT 854 Pathophysiology, "Disorders of the Endocrine System"-2 lectures

PGY 431 Neuroendocrinology, Lecturer and Course Director- 2 semesters

PGY 502 Principles of Systems, Cellular and Molecular Physiology, "Endocrine System"- 12 lectures

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| PGY 602  | Readings in Systems, Cellular and Molecular Physiology- 4 discussion sessions  |
| PHA 424G | Pharmacology of the Human Endocrinology and Reproduction Endocrine and Reproductive Systems- 20 lectures, Co-Course Director |
| IBS 606  | Physiological Communications, Course Director and “Neural Development”-9 lectures  |
| MD 824   | Endocrine and Reproductive Systems- 15 lectures  |

### **Other Institutions**

#### Spring 1995-96

|          |   |
|----------|---|
| MBIO 417 | Molecular Biology, “Molecular Neurobiology,” Loyola University Chicago-3 lectures |
|----------|---|

#### Fall 1999

|         |   |
|---------|---|
| BIO 220 | Microbiology, Adjunct Faculty, Midway College-All Lecture and Laboratory Sessions |
|---------|---|

### **STUDENTS TRAINED**

#### **Postdoctoral Fellows**

|           |                           |
|-----------|---------------------------|
| 2006-2011 | Jenne M. Westberry, Ph.D. |
| 2006-2010 | Tomoko Sengoku, Ph.D.     |

#### **Graduate Students-Primary Advisor**

|           |   |
|-----------|---|
| 2006-2008 | Paula Heron, Physiology, Ph.D.              |
| 2005-2008 | Amanda Prewitt, Physiology, Ph.D. Candidate |
| 2006-2012 | Amanda Trout, Physiology, Ph.D.             |
| 2013-2014 | Katherine Murray, Physiology, MS (Thesis)   |

#### **Graduate Students-Advisory Committees**

|           |   |
|-----------|---|
| 2003-2005 | Amanda Prewitt, Physiology                                  |
| 2004-2005 | Sarah Martin, Ph.D., Anatomy and Neurobiology               |
| 2006-2008 | Karrie Greer, Ph.D., Physiology                             |
| 2007      | Meredith Boley, Biology                                     |
| 2008-2017 | Thitinart Sithisarn, Ph.D., Physiology                      |
| 2009-2013 | Amanda Sherwood, Ph.D., Biochemistry                        |
| 2011-2015 | Marie Gehman, Ph.D., Microbiology and Immunology            |
| 2012-2016 | Elena Pinceti, Ph.D., Physiology, Loyola University Chicago |
| 2013-2017 | Mary Katherine McKenna, Ph.D., Microbiology and Immunology  |
| 2015-2017 | Kaia Hampton, Ph.D., Pharmacology                           |
| 2014-2019 | Morgan Brogli, Ph.D., Microbiology and Immunology           |
| 2015-2019 | Alexandra Gjevre, Ph.D., Microbiology and Immunology        |
| 2015      | Charles Davidson, MS, Medical Sciences                      |
| 2017      | Seth Carmichael, MS, Medical Sciences                       |
| 2017      | Stephen Dockins, MS, Medical Sciences                       |



|           |  |
|-----------|--|
| 2017-2021 | Brittany Rice, Ph.D., Nutritional Sciences |
| 2017      | Sanam Golshani, MS, Medical Sciences       |
| 2018      | Jeffrey Chu, MS, Medical Sciences          |
| 2018      | Shannon Murray, Medical Sciences           |
| 2019      | Traci Scott, MS, Medical Sciences          |
| 2019      | Kristina Harvey, MS, Medical Sciences      |
| 2019      | Asna Patel, MS, Medical Sciences           |
| 2019      | William Forbess, MS, Medical Sciences      |
| 2020      | Bader Abdallah, MS, Medical Sciences       |
| 2020      | Jessey Manison, MS, Medical Sciences       |
| 2020      | Taylor Childress, MS, Medical Sciences     |
| 2020      | India Smith, MS, Medical Sciences          |
| 2020      | Mary Emily Noekler, MS, Medical Sciences   |
| 2020      | Jessica Gebhardt, MS, Medical Sciences     |
| 2020      | Taylor Toacca, MS, Medical Sciences        |
| 2019-2022 | Bukola Omotola, Ph.D., Biology             |
| 2020-pres | Olivia Kalimon, Neuroscience               |
| 2021      | Taylor Baker, MS, Medical Sciences         |
| 2021      | Marshall Maynard, MS, Medical Sciences     |
| 2021      | Taylor Baker, MS, Medical Sciences         |
| 2020      | Taylor Childress, MS, Medical Sciences     |
| 2021      | Chetali Jhamnani, MS, Medical Sciences     |
| 2021-pres | Alexander Skilvas, Rehabilitation Science  |
| 2021-pres | Lesley Golden, Physiology                  |
| 2021      | Ezekiel Rozmus, MS, Medical Sciences       |
| 2021-pres | Jessica Whelan, Physiology                 |
| 2021      | Ashley Walham, MS, Medical Sciences        |
| 2021-pres | Hayce Joon, Pharmacology                   |

### **Graduate Students-Rotation Supervision**

|      |  |
|------|--|
| 2003 | Adrienne Ellis, Integrated Biomedical Sciences         |
| 2004 | Lamin Han Mbye, Integrated Biomedical Sciences         |
| 2004 | Laura Johnson, Integrated Biomedical Sciences          |
| 2004 | Angela Martin, Integrated Biomedical Sciences          |
| 2004 | Jeremy Mathenia, Integrated Biomedical Sciences        |
| 2005 | Gayle Joseph, Integrated Biomedical Sciences           |
| 2005 | Amanda Trout, Integrated Biomedical Sciences           |
| 2006 | Paula Heron, Physiology                                |
| 2007 | Laura Ashley, Integrated Biomedical Sciences           |
| 2008 | Leann Fiore, Integrated Biomedical Sciences            |
| 2009 | Jennifer Rios-Pilier, Integrated Biomedical Sciences   |
| 2009 | Amanda Sherwood, Integrated Biomedical Sciences        |
| 2011 | Alena Smith, Integrated Biomedical Sciences            |
| 2012 | Katherine Murray, Integrated Biomedical Sciences       |
| 2012 | Mary Katherine McKenna, Integrated Biomedical Sciences |

### **Masters Students- Primary Advisor**

|           |   |
|-----------|---|
| 2013      | Denise Adegoke, Medical Sciences (non-thesis) |
| 2013      | Ribu Goyal, Medical Sciences (non-thesis)     |
| 2017      | Anish Patel, Medical Sciences (non-thesis)    |
| 2020      | Greg Watts, Medical Sciences (non-thesis)     |
| 2020      | Monisha Rekras, Medical Sciences (non-thesis) |
| 2020-2021 | Taylor Oliva, Medical Sciences (non-thesis)   |
| 2021-2022 | Sangeet Sheth, Medical Sciences (non-thesis)  |
| 2021-pres | Ali Sora, Medical Sciences (non-thesis)       |

### **Undergraduate Students**

|           |  |
|-----------|--|
| 2003      | Dipika Patel, Agricultural Biotechnology 401 Senior Research Project       |
| 2004-2006 | Amanda N. Rosewell, Undergraduate Research Assistant                       |
| 2004      | Delano Proctor, Agricultural Biotechnology 401 Research Project            |
| 2004-2005 | Elizabeth M. Kordik, Biology 395 Senior Research Project                   |
| 2005-2007 | Deana K. Jasper, Agricultural Biotechnology 401 Research Project           |
| 2006-2007 | Fitore Vula, Biology 395 Senior Research Project                           |
| 2007      | Keri A. Borden, Biology 395 Research Project                               |
| 2007-2008 | Stephanie Pyzola, Agricultural Biotechnology 401 Research Project          |
| 2008      | Alexis L. Mavroides, Biology 405 Research Project, Midway College          |
| 2009-2010 | Chadwick D. Lampl, Biology 395 Research Project                            |
| 2009-2010 | Lece Webb, Transylvania University   |
| 2010      | Katherine Miller, Asbury College   |
| 2011-2012 | Shadan Hadi, Biology 395 Research Project                                  |
| 2013-2014 | Lauren Vincent Cartwright, Agricultural Biotechnology 401 Research Project |
| 2014-2015 | Hagen Smith, Biochemistry 395 Research Project                             |
| 2014      | Alyssa Brown, Centre College   |
| 2015-2016 | Amy Grosvals, Nutritional Sciences, Biology 395 Research Project           |
| 2015-2016 | Sydney Lammers, College of Health Sciences, 455 Research Project           |
| 2015-2017 | Allison Polidori, Agricultural Biotechnology, 401 Research Project         |
| 2015-2016 | Brittany Rice, EKU/UK Bridges Scholar Mentor                               |
| 2017-2018 | Heather Burns, Neuroscience Major 394 Research Project                     |

### **Awards by Trainees**

|      |                 |  |
|------|-----------------|--|
| 2006 | Amanda Prewitt  | American Heart Association, Predoctoral Fellowship   |
| 2007 | Amanda Prewitt  | Endocrine Society 89 <sup>th</sup> Annual Meeting, Toronto CA, Travel Award  |
| 2007 | Jenne Westberry | University of Kentucky Reproductive Sciences Symposium, 1 <sup>st</sup> Place Poster Award, Postdoctoral Fellow Division                     |
| 2007 | Tomoko Sengoku  | Society for Neuroscience 37 <sup>th</sup> Annual Meeting, San Diego, CA, Postdoctoral Trainee Travel Award                                   |
| 2009 | Jenne Westberry | Bluegrass Chapter of the Society for Neuroscience, Spring Neuroscience Day, 1 <sup>st</sup> Place Poster Award, Postdoctoral Fellow Division |
| 2010 | Jenne Westberry | Bluegrass Chapter of the Society for Neuroscience Chapter Travel Award Nominee   |

2011 Jenne Westberry Promotion to Research Assistant Professor, Department of Physiology, University of Kentucky

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## PROFESSIONAL ACTIVITIES

### Departmental

1999 Postdoctoral Scholar Representative  
2004 Faculty Search Committee  
2004 Holsinger Award Selection Committee  
2004-2005 Departmental Seminar Series Organizer  
2008-2018 Graduate Affairs Committee  
2008 Holsinger Award Selection Committee, Chair  
2008 Departmental Six Year Review Committee  
2009 Departmental Expectations for Promotion Rules of Procedure Committee  
2010 50<sup>th</sup> Anniversary Planning Committee  
2012 IBS606 Curriculum Revision Committee  
2013-2018 Departmental Research Committee  
2015-2017 Physiology Scholars Committee  
2017-2021 T32 Graduate Training in Integrative Physiology Steering Committee  
2018-pres Education Committee  
2020-2021 Departmental Six Year Review Committee

### University

2002-2005 Reproductive Sciences Training Grant Faculty Member, University of Kentucky  
2003-pres Member of the Graduate Faculty  
2003-2005 Agricultural Biotechnology "Introduction to Research" Seminar  
2005 Outside Examiner for Final Doctoral Examination of Janelle Reed, Department of Anatomy and Neurobiology, University of Kentucky  
2005-pres Medical Center Internal Pilot Grant Program Reviewer  
2005-2010 College of Medicine MD/PhD Applicant Interviewer  
2006-pres Integrated Biomedical Sciences Admissions Committee  
2006 Kentucky Pediatric Research Institute Inflammation Chief Search Committee  
2006-2008 Kentucky Pediatric Research Institute Infectious Disease Advisory Committee, Chair  
2007-2008 President's Commission on Women *Circles of Power* Leadership Program Participant  
2007 Outside Examiner for Final Doctoral Examination of Tracy Strepanyan, Department of Molecular and Biomedical Pharmacology, University of Kentucky  
2007 Clinical and Reproductive Sciences New Faculty Search Committee  
2007-2010 Member of Center for Excellence in Reproductive Sciences  
2008-pres University of Kentucky Postdoctoral Fellow Committee Poster Session Judge  
2009-2012 University of Kentucky Institutional American Cancer Society Grant Reviewer  
2010-2021 Student Progress and Promotions Committee, College of Medicine  
2011 Outside Examiner for Final Doctoral Examination of Peng Jiang, Department of Biology, University of Kentucky

2011 Outside Examiner for Final Doctoral Examination of Theodore Cory, College of Pharmacy, University of Kentucky

2011 Curriculum Revision Committee, GU-Reproduction-Endocrinology section, College of Medicine, University of Kentucky

2012-2017 Advisory and Admissions Committee for the Masters Program in Medical Sciences, College of Medicine, University of Kentucky

2013 Committee on Educational Productivity, College of Medicine

2013 Outside Examiner for Final Doctoral Examination of Chris Waters, College Health Sciences, University of Kentucky

2013-2016 Faculty Council, College of Medicine, University of Kentucky

2014 Outside Examiner for Final Doctoral Examination of Christopher Stamatkin, College of Pharmaceutical Sciences, University of Kentucky

2014-2020 University Senate, Elected Faculty Senator from College of Medicine, University of Kentucky

2014-2018 Senate Academic Organization and Structure Committee, University of Kentucky

2015 Outside Examiner for Final Doctoral Examination of Wendy Wilkerson, Rehabilitation Sciences, University of Kentucky

2015-pres Member, Honors Faculty-voting member, Honors College, University of Kentucky

2015-2020 Honors Admissions Application Reader

2015-2017 Eastern Kentucky University/University of Kentucky Bridges Scholars Member and Mentor

2017 College of Medicine Fellowship for Excellence Graduate Research Award Selection Committee

2017-2020 Graduate Council

2017-2023 University of Kentucky Undergraduate Neuroscience Major Executive Committee

2017-pres Director, University Scholars Program in Agricultural and Medical Biotechnology and Medical Sciences

2018-2020 Senate Academic Programs Committee, University of Kentucky

2018 BEST Distribution of Effort Review Committee

2018 College of Medicine Academy of Medical Educators Classroom Development Program

2018-pres Bridging Interdisciplinary Careers in Women's Health (BIRCWH) Mentor (Jessica Santollo)

2019 Associate Dean for Biomedical Education Search Committee

2019 Review of the Free Enterprise Institute, Ad-hoc Faculty Senate Committee

2019-pres Education Distribution of Effort Task Force

2020 The Provost's Ad Hoc Committee on *AR 1:5 Substantive Change* Review

2020-pres Senate Academic Programs Committee/Graduate Council liaison

2020-2021 STAR Advisory Group

2020 Faculty Mentoring Development Program participant

2020-pres Women in Neuroscience Undergraduate Club, Faculty Advisor

2020 Women in Medicine and Science Mentor (WIMS) (Brittney Blevins)

2021 Women in Medicine and Science Mentor (WIMS) (Caroline Smith)

2021 Women in Medicine and Science Mentor (WIMS) (Meagan Kingren)

2021 Provost's Advisory Committee on Acting Graduate School Dean and Acting Associate Provost for Graduate and Professional Education

2021 Faculty Development Session: Transparency in Education: The Art of Being Crystal Clear  
2021 College of Medicine Leadership Academy  
2022-2023 Faculty Council, College of Medicine, University of Kentucky  
2022-2025 Graduate Council

### **Regional**

1999-pres Society for Neuroscience, Bluegrass Chapter Member  
2003-pres Science Fair Judge, Fayette County Public Schools  
2004-2005 Society for Neuroscience, Bluegrass Chapter, Executive Committee, Membership Coordinator  
2005-pres Society for Neuroscience, Bluegrass Chapter Spring Neuroscience Day, Poster Judge  
2009-2010 Society for Neuroscience, Bluegrass Chapter, Executive Committee, Outreach Director  
2018-2020 Society for Neuroscience, Bluegrass Chapter, Executive Committee, Activities Coordinator

### **National**

#### *Professional Society Memberships:*

1992-pres American Association for the Advancement of Science  
1995-2019 Society for Neuroscience  
1995-pres The Endocrine Society  
1999-2005 Women in Neuroscience (presently the Committee on Women in Neuroscience within the Society for Neuroscience)  
1999-2006 Women in Endocrinology  
2009-2011 Organization for the Study of Sex Differences  
2013-2015 American Physiological Society  
2021-pres American Physiological Society-Association of Chairs of Departments of Physiology

#### *Professional Society Service:*

2008 Endocrine Society Summer Research Fellowship Awards Reviewer  
2008 Endocrine Society Endocrine Scholars Award Reviewer  
2011 US-Latin American Workshop in Neuroendocrinology, Vina del Mar, Chile Young Investigator Award Review Committee

#### *Grant Reviewer:*

2001-2002 National Science Foundation, Ad-hoc  
2003 Health Research Board, Ireland  
2003-2007 Alzheimer's Association  
2006-2009 American Heart Association, Peer Review Committee "Molecular Signaling, Basic Cell and Molecular Biology" Great Rivers Affiliate  
2008-2009 National Institutes of Health, CSR, Drug Discovery Panel Study Section

- 2008 National Institutes of Health, CSR, Molecular Neurogenetics Study Section, Ad-hoc
- 2009 Cancer Research United Kingdom, Biological Sciences Committee
- 2009 National Institutes of Health, CSR, Neuroprotection and Neurodegeneration Special Emphasis Panel
- 2010-pres American Heart Association, Peer Review Committee “Molecular Signaling, Basic Cell and Molecular Biology” National and Regional
- 2011 Neurological Foundation of New Zealand
- 2011 National Science Foundation, Division of Integrative Organismal Systems, Neural Modulation Proposal Review Panel
- 2011-2013 Grant Reviewer Fondazione Cariplo, Milan, Italy
- 2012 National Institutes of Health, NIMH, Special Emphasis Panel, “Neural Processes Underlying Sex Differences Related to Risk and Resilience for Mental Illness”
- 2013-pres National Institutes of Health, CSR (F03A), “Fellowships: Neurodevelopment, Synaptic Plasticity, and Neurodegeneration”
- 2014 National Institutes of Health, NIEHS, Special Emphasis Panel, “Neurodegeneration- Effects of Environmental Insults”
- 2015-2018 National Institutes of Health, CSR, Special Emphasis Panel (F06), “Fellowships: Endocrinology, Metabolism, Nutrition and Reproductive Sciences”
- 2016 National Institutes of Health, NIMH, Special Emphasis Panel, “T32 NRSA Institutional Research Training Grant”
- 2016 National Institutes of Health, NIMH, Special Emphasis Panel, “Emotional Regulation in Aging”
- 2016 Kansas University, College of Medicine Young Investigator Grants, Kansas City, MO, Outside Reviewer
- 2017 Louisiana Biomedical Research Foundation
- 2018-2019 National Institutes of Health, CSR, Special Emphasis Panel U54 Specialized Centers of Research Excellence on Sex Differences

*Manuscript Reviewer:*

- 2009-2012 *Endocrinology* Editorial Board Member
- 2011-2015 *Neurogenetics* Editorial Board Member
- 2021-2024 *Frontiers in Endocrinology* Associate Editor
- 2002-pres Manuscript Reviewer:
- Biology of Sex Differences*
  - Biomedical Pharmacology*
  - Biotechniques*
  - Brain Research*
  - Endocrinology*
  - Experimental Neurology*
  - Frontiers in Neuroendocrinology*
  - Frontiers in Endocrinology*
  - Glia*
  - Histology and Histopathology*
  - Hormone and Metabolic Research*
  - Hormones and Behavior*
  - International Journal of Neuropsychopharmacology*

*Journal of Clinical Endocrinology and Metabolism*  
*Journal of Leukocyte Biology*  
*Journal of Molecular Endocrinology*  
*Journal of Neurochemistry*  
*Journal of Neuroendocrinology*  
*Journal of Neurological Anesthesiology*  
*Journal of Neuroscience*  
*Journal of Neuroscience Methods*  
*Journal of Neuroscience Research*  
*Journal of Neurotrauma*  
*Journal of Steroid Biochemistry and Molecular Biology*  
*Molecular Brain Research*  
*Molecular and Cellular Endocrinology*  
*Neurobiology of Aging*  
*Neurobiology of Disease*  
*Neurochemical Research*  
*Neuroendocrinology*  
*Neuropsychiatric Disease and Treatment*  
*Neuroscience Journal*  
*Neuroscience Letters*  
*Nutrition Journal*  
*PLOS ONE*  
*Tumor Biology*  
*Women's Health*

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## ORGANIZING ROLES IN CONFERENCES AND SCIENTIFIC MEETINGS

- 2000-2001 Reproductive Sciences Weekly Forum Director, University of Kentucky  
2004 Workshop on Steroid Hormones and Brain Function, Session Co-Chair "Steroids and neurosteroids: From brain injury to repair," Breckenridge, CO  
2007 26<sup>th</sup> Annual University of Kentucky Symposia in Reproductive Sciences and Women's Health, Organizing Director  
2007 Workshop on Steroid Hormones and Brain Function, Session Chair "Long-term developmental consequences of early exposure to steroids and endocrine active compounds," Breckenridge, CO

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## PUBLICATIONS

### Manuscripts in Peer-Reviewed Journals

1. **Wilson, ME**, Marshall, MT, Bollnow, MR, McGivern, RF, and Handa, RJ (1995) Gonadotropin-releasing hormone mRNA and gonadotropin beta-subunit mRNA expression in the adult female rat exposed to ethanol *in utero*. *Alcoholism: Clinical and Experimental Research* 19:1211-1218.

2. **Wilson, ME** and Handa, RJ (1997) Ontogeny of gene expression in the gonadotrope of the female rat. *Biology of Reproduction* 56:563-568.
3. **Wilson, ME** and Handa, RJ (1997) Gonadotropin secretion in infantile female rats exposed to ethanol *in utero*. *Alcohol* 14:497-501.
4. **Wilson, ME** and Handa, RJ (1998) Direct actions of gonadal steroid hormones on FSH secretion and expression in the infantile female rat. *Journal of Steroid Biochemistry and Molecular Biology* 66:71-78.
5. **Wilson, ME** and Handa, RJ (1998) Activin subunit, follistatin, and activin receptor gene expression in the prepubertal female rat pituitary. *Biology of Reproduction* 59:278-283.
6. **Wilson, ME**, Price Jr., RH, Handa, RJ (1998) Estrogen receptor-beta in the female rat pituitary. *Endocrinology* 139:5151-5156.
7. Dubal, DB, **Wilson, ME**, Wise, PM (1999) Estradiol: A protective and trophic factor in the brain. *Journal of Alzheimer's Disease* 1: 265-274.
8. Dubal, DB, Shughrue, PJ, **Wilson, ME**, Merchenthaler, I, Wise, PM (1999) Estradiol modulates *bcl-2* in cerebral ischemia: A potential role for estrogen receptors. *Journal of Neuroscience* 19:6385-6393.
9. McShane, TM, **Wilson, ME**, Wise, PM (1999) Effects of life-long moderate caloric restriction on levels of neuropeptide Y, proopiomelanocortin, and galanin mRNA. *Journal of Gerontology* 54A: B14-B21.
10. **Wilson, ME**, Dubal, DB, Wise, PM (2000) Estradiol protects against injury-induced cell death in cortical explant cultures: A role for estrogen receptors. *Brain Research* 873: 235-242.
11. **Wilson, ME**, Rosewell, KL, Kashon, ML, Shughrue, PJ, Merchenthaler I, Wise, PM (2002). Age differentially influences estrogen receptor- $\alpha$  (ER $\alpha$ ) and estrogen receptor- $\beta$  (ER $\beta$ ) gene expression in specific regions of the brain. *Mechanisms of Ageing and Development* 123:593-601.
12. **Wilson, ME**, Liu, Y, Wise, PM. (2002) Estradiol modulates anti-apoptotic signals in the cortical explant cultures. *Molecular Brain Research* 102:88-94.
13. Dressman, J, Kincer, J, Matveev SV, Guo L, Greenberg R, Guerin T, Meade D, Li, X-A, Zhu W, Uittenbogaard, A, **Wilson, ME**, Smart, EJ. (2003) HIV protease inhibitors promote atherosclerotic lesion formation in mice by increasing CD36-dependent cholesterol accumulation in macrophages. *Journal of Clinical Investigation* 111: 389-397.
14. Gong, M, **Wilson, ME**, Kelly, T, Su, W, Dressman, J, Kincer, K, Matveev, SV, Guo, L, Guerin, T, Li, X-A, Zhu, W, Uittenbogaard, A, Smart, EJ (2003). HDL-associated estradiol stimulates endothelial NO synthase and vasodilation in an SR-BI-dependent manner. *Journal of Clinical Investigation* 111:1579-1587.
15. Dimayuga, FO, Reed, JL, Carnero, GA, Wang, C, Dimayuga, ER, Dimayuga, VO, **Wilson, ME**, Keller, JN, Bruce-Keller AJ (2005). Estrogen and Brain Inflammation: Effects on Microglial Cytokine Release and MHC/Co-stimulatory Molecule Expression. *Journal of Neuroimmunology* 161: 123-36.
16. Allred, KF, Smart, EJ, **Wilson, ME** (2006). Estrogen receptor-alpha decreases HIV protease inhibitor-induced atherosclerosis. *Journal of Biological Chemistry* 281:1419-1425.
17. **Wilson, ME**, Allred, KF, Bisotti, AJ, Chauhan, A, Bruce-Keller, AJ, Nath, A (2006). Estrogen suppresses Tat-induced transcription in glial cells. *AIDS Research and Human Retroviruses* 22: 350-356.



18. Stocker, SD, **Wilson, ME**, Madden, CJ, Lone, U, Sved, AF (2006). Intravenous 6-Hydroxydopamine attenuates vasopressin and oxytocin secretion stimulated by hemorrhage and hypotension but not hyperosmolality in rats. *American Journal of Physiology-Regulatory, Integrative and Comparative Physiology* 291:R59-R67.
19. Prewitt, AK and **Wilson, ME** (2007). Regulation of estrogen receptor-alpha in the developing mouse cortex. *Brain Research* 1134: 62-69.
20. Bruce-Keller AJ, Dimayuga, FO, Reed, JL, Wang, C, Angers, R, **Wilson, ME**, Dimayuga, VM, Scheff, SW, (2007). Gender and estrogen manipulation do not affect traumatic brain injury in mice. *Journal of Neurotrauma* 24: 203-215.
21. Swartz, KR, Fee, DB, Joy, KM, Roberts, KN, Sun, S, Scheff, NN, **Wilson, ME**, Scheff, SW (2007). Gender differences in spinal cord injury are not estrogen-dependent. *Journal of Neurotrauma* 24: 473-480.
22. **Wilson, ME**, Allred, KF, Kordik, EM, Jasper, DK, Rosewell, AN, Bisotti, AJ (2007). Gender-specific effects of HIV protease inhibitors on body mass in mice. *AIDS Research and Therapy* 4:8.
23. Wang, X, Southard, RC, Allred, CD, Talbert, DR, **Wilson, ME**, Kilgore, MJ (2008). MAZ drives tumor specific expression of PPAR gamma 1 in breast cancer cells. *Breast Cancer Research and Treatment*. 111: 103-111.
24. **Wilson, ME**, Sengoku, T, Allred, KF (2008). Estrogen prevents cholesterol accumulation in macrophages induced by ritonavir. *Journal of Cellular Biochemistry*. 103: 1598-1606.
25. Westberry, JM, Prewitt, AK and **Wilson ME** (2008). Epigenetic regulation of the estrogen receptor alpha promoter in the cerebral cortex following ischemia in male and female rats. *Neuroscience* 152: 982-989.
26. Heron, PM, Turchan-Cholewo, J, Bruce-Keller, AJ and **Wilson, ME** (2009). Estrogen receptor alpha inhibits the estrogen-mediated suppression of HIV transcription in astrocytes: implications for estrogen neuroprotection in HIV dementia. *AIDS Research and Human Retroviruses* 25: 1071-1081. \*\*selected for the focus of a cover story for the NCR Reporter, June 2010\*\*
27. Westberry, JM, Trout, AL, and **Wilson, ME** (2010). Developmental regulation of estrogen receptor-alpha mRNA via promoter methylation in the mouse cortex. *Endocrinology* 151: 731-740.
28. Westberry, JM, Trout, AL, and **Wilson, ME** (2011). Epigenetic regulation of estrogen receptor beta expression in the rat cortex during aging. *NeuroReport* 22:428-462.
29. Westberry, JM and **Wilson, ME** (2012). Developmental regulation of gene expression in the prefrontal cortex. *Neurogenetics* 13: 159-167.
30. **Wilson, ME**, Sengoku, T (2013) Developmental regulation of neuronal genes by DNA methylation: Environmental influences. *International Journal of Neuroscience* 31: 448-451.
31. Sa, Q, Ochiai, E, Sengoku, T, **Wilson, ME**, Brogli, M, Crutcher, S, Michie, SA, Xu, B, Payne, L, Wang, X, Suzuki, Y (2014). VAM-1/ $\alpha$ 4 $\beta$ 1 integrin interaction is crucial for prompt recruitment of immune T cells into the brain during the early stage of reactivation of chronic infection with *Toxoplasma gondii* to prevent toxoplasmic encephalitis. *Infection and Immunity* 82: 2826-2839.
32. Sengoku, T, Murray, KM, and **Wilson, ME** (2016). Neonatal Hyperoxia Induces Alterations in Neurotrophin Gene Expression. *International Journal of Developmental Neuroscience* 48:31-7.

33. Sithisarn, T, Legan, SJ, Westgate, PM, **Wilson ME**, Wellmann, K, Bada, HS, Barron, S (2017). The effects perinatal oxycodone exposure on behavioral outcomes in a rodent model. *Frontiers in Pediatrics* 5: 180.
34. Stewart, AN, MacLean, S, Whelan, JP, Bailey, WM, Gensel, JC, **Wilson, ME** (2020). Considerations for Studying Sex as a Biological Variable in Spinal Cord Injury. *Frontiers in Neurology* 11: 802.
35. Trout, AL, Westberry, JM, Sengoku, T, **Wilson, ME**. Explant model of sex-specific responses to ischemia. Submitted. *Journal of Integrative Neuroscience*.
36. Sithisarn, T, Westgate, P, Bada, H, **Wilson, ME**. An in vitro model for testing opioids vs non-opioids in the treatment of neonatal abstinence syndrome. Submitted. *Journal of Pediatrics*.

### **Invited Reviews (Peer Reviewed)**

1. Handa, RJ, Price Jr., RH, **Wilson, ME** (1997) Steroid hormone receptors in the developing brain. *Biomedical Reviews* 7:51-66.
2. Dubal, DB, **Wilson, ME**, Wise, PM (1999) Estradiol: A protective and trophic factor in the brain. *Journal of Alzheimer's Disease* 1: 265-274.
3. Wise, PM, Smith, MJ, Dubal, DB, **Wilson, ME**, Krajnak, KM, Rosewell, KL (1999) Neuroendocrine influences on and repercussions of the menopause. *Endocrine Reviews* 20:243-248.
4. Wise, PM, Dubal DB, **Wilson, ME**, Rau, SW, Bottner, M, Rosewell KL (2001) Estradiol is a protective factor in the adult and aging brain: understanding mechanisms derived from in vivo and in vitro studies. *Brain Research Brain Research Reviews* 37:313-319.
5. Wise, PM, Dubal DB, **Wilson, ME**, Rau, SW (2001) Estradiol is a neuroprotective factor in *in vivo* and *in vitro* models of brain injury. *Journal of Neurocytology* 29: 401-410.
6. Wise, PM, Dubal DB, **Wilson, ME**, Rau, SW, Bottner, M (2001) Neuroprotective effects of estrogen-new insights into mechanisms of action. *Endocrinology* 142: 969-973.
7. Wise, PM, Dubal DB, **Wilson, ME**, Rau, SW, Liu, Y (2001) Estrogens: Trophic and protective factors in the adult brain. *Frontiers in Neuroendocrinology* 22: 33-66.
8. Wise, PM, Smith, MJ, Dubal, DB, **Wilson, ME**, Rau, SW, Cashion, AB, Bottner, M, Rosewell, KL. Neuroendocrine modulation and repercussions of female reproductive aging. (2002) *Recent Progress in Hormone Research* 57: 235-256.
9. **Wilson, ME**, Dimayuga, FO, Reed, JL, Curry, TE, Anderson, CF, Nath, A, Bruce-Keller, AJ. (2006) Immune Modulation by Estrogens: Role in CNS HIV-1 Infection. *Endocrine* 29:289-298.
10. **Wilson, ME**, Westberry, JM and Prewitt, AK (2008). Dynamic Regulation of Estrogen Receptor-Alpha Gene Expression in the Brain: A Role for Promoter Methylation? *Frontiers in Neuroendocrinology* 29: 378-385.
11. **Wilson, ME** and Westberry, JM. (2009) Regulation of estrogen receptor gene expression: New insights and novel mechanisms. *Journal of Neuroendocrinology* 21: 238-242.
12. McCarthy, MM, Auger, AP, Bale, TL, DeVries, GJ, Dunn, GA, Forger, NG, Murray, AK, Nugent, BM, Schwarz, JM, **Wilson, ME**. (2009) The epigenetics of sex differences in the brain. *Journal of Neuroscience* 29: 12815-12823.
13. **Wilson, ME**, Westberry JM, Trout AL. (2011). Estrogen receptor-alpha gene expression in the cortex: Sex differences during development and in adulthood. *Hormones and Behavior* 59: 353-357.

14. Nugent, B, Paredes, A, Lara H, Tobet, S, **Wilson, ME** (2012) Hormonal programming across the life span. *Hormones and Metabolic Research*, 44: 577-586.
15. **Wilson, ME** (2013) Stroke: Understanding the differences between males and females. *Pflugers Archives* 465: 595-600.

### **Book Chapters**

1. Handa, RJ, Price Jr., RH, **Wilson, ME** (1997) Steroid hormone receptors and the assessment of feedback sensitivity. In: Methods in Neuroendocrinology, Van de Kar LD Ed. CRC Press, pp. 49-68.

### **Selected Abstracts**

1. **Snep, ME** and Handa, RJ (1994) The effects of fetal exposure to ethanol on developmental changes in LH and FSH secretion and LH and FSH-beta mRNA levels in the infantile female rat. Research Society on Alcoholism.
2. **Wilson, ME**, McGivern, RF, and Handa, RJ (1995) Characterization of gene expression in the developing gonadotrope of infantile female rats. The Endocrine Society.
3. **Wilson, ME**, Bollnow, MR, Handa, RJ (1995) Gonadotropin releasing hormone (GnRH) mRNA and gonadotropin beta-subunit gene expression in the adult female rat exposed to ethanol *in utero*. Research Society on Alcoholism.
4. Price Jr., RH, **Wilson, ME**, and Handa RJ (1995) A smaller form of androgen receptor mRNA in brain contains a truncated 5'-untranslated region. Society for Neuroscience.
5. **Wilson, ME**, O'Keefe, JA, Price, Jr., RH, and Handa, RJ (1995) Androgen receptor (AR) and AR mRNA in primary cultures of rat hippocampus. Society for Neuroscience.
6. **Wilson, ME** and Handa, RJ (1996) Regulation of follicle stimulating hormone in primary cultures of infantile female rat pituitary cells by activin, androgen, and GnRH. The Endocrine Society.
7. **Wilson, ME**, Price Jr., RH, Handa, RJ (1997) Estrogen receptor-beta mRNA expression in the female rat pituitary. Society for Neuroscience.
8. **Wilson, ME** and Handa, RJ (1997) Activin subunit, follistatin, and activin receptor gene expression in the prepubertal female rat pituitary. The Endocrine Society
9. Dubal, DB, **Wilson, ME**, Wise, PM (1998) Estradiol upregulates Bcl-2 in response to ischemic injury. Society for Neuroscience.
10. Dubal DB, **Wilson, ME**, Shughrue, PJ, Merchenthaler, I, Wise, PM (1999) Induction of galanin gene expression in estradiol-mediated neuroprotection against cerebral ischemia.
11. Kashon, ML, **Wilson, ME**, Rosewell, KL, Shughrue, PJ, Mehta, KD, Merchenthaler, I, Wise, PM (1999) Age differentially influences estrogen receptor- $\beta$ (ER $\beta$ ) gene expression in specific regions of the brain. Society for Neuroscience.
12. **Wilson, ME**, Dubal, DB, Wise, PM (1999) Estrogen neuroprotection in cortical explant cultures. The Endocrine Society.
13. **Wilson, ME**, Dubal, DB, Wise, PM (1999) Estrogen influences on gene expression in cortical explant during ischemic injury. Society for Neuroscience.
14. **Wilson, ME**, Liu, L, Wise, PM (2000) Estradiol modulates anti-apoptotic signals in cortical explant cultures. Society for Neuroscience.
15. **Wilson, ME** and Wise, PM (2001) Estradiol suppresses pro-apoptotic signals in a cortical explant model of injury. Society for Neuroscience.

16. **Wilson, ME**, Chauhan, A, Wise, PM, Nath, A (2002) Estradiol suppresses HIV-1 LTR-mediated transcription. Society for Neuroscience.
17. Allred, KF, Smart, EJ, **Wilson, ME** (2004) Estrogen modulates the expression of the scavenger receptor CD36 in macrophages treated with HIV protease inhibitors. Endocrine Society.
18. Kordik, EM, Proctor D, Martin, A, Allred, KF, Bisotti, AJ, Smart, EJ, **Wilson, ME** (2005) Gender differences in atherosclerosis induced by HIV protease inhibitor treatment in mice. University of Kentucky Symposium in Reproductive Sciences.
19. Wang, X, Southard, RC, **Wilson, ME**, Kilgore, MW (2005) Myc-associated zinc finger protein mediates the tumor specific expression of PPAR gamma 1 in human breast cancer cells. American Association for Cancer Research.
20. Prewitt, AK, Bisotti, AJ, Allred, KF, **Wilson, ME** (2005) Developmental regulation of estrogen receptor-alpha mRNA in the mouse cortex. Society for Neuroscience.
21. **Wilson, ME**, Prewitt, AK, Rosewell, AN, Trout, AL, Bisotti, AJ, Jasper, D, Allred, KF (2006) Developmental regulation of ER $\alpha$  mRNA involves differential promoter usage. Keystone Symposium, Nuclear Receptors: Steroid Sisters.
22. Prewitt, AK, Trout, AL, Jasper, DK, Rosewell, AN, **Wilson, ME** (2006) Developmental Regulation of Estrogen Receptor- alpha mRNA via Differential Promoter Usage in the Mouse Cortex. Endocrine Society.
23. Allred, KF, Rosewell, AN, Kordik, EM, Bisotti, AJ, **Wilson, ME** (2006) Gender differences in weight gain following HIV protease inhibitor treatment in mice. Endocrine Society.
24. Greenberg, RN, **Wilson, ME**, Vaughn, H, Guerin, T, White, J, Smart, EJ (2006) Taking Kaletra Capsules up-regulates monocyte/macrophage CD36 and cellular cholesterol: A five volunteer study. International Workshop on Adverse Drug Reactions and Lipodystrophy in HIV.
25. Prewitt, AK, Sengoku, T, Vula, F, **Wilson, ME** (2007) Epigenetic modification of the ER $\alpha$  promoter during mouse development. Endocrine Society.
26. Jasper, DK, Prewitt, AK, Bisotti, AJ, **Wilson, ME** (2007) Estrogen: Regulating genes involved in neuroprotection. University of Kentucky Undergraduate Research Showcase.
27. Borden, KM, Prewitt, AK, **Wilson, ME** (2007) Differential promoter usage in the developing mouse cortex. University of Kentucky Undergraduate Research Showcase.
28. Vula, F, **Wilson, ME** (2007) Expression of DNA Methyltransferases during mouse brain development. University of Kentucky Undergraduate Research Showcase.
29. Westberry, JM, Prewitt, AK, **Wilson, ME** (2007) Regulation of ER- $\alpha$  in the cortex following ischemic injury. Society for Neuroscience.
30. Sengoku, T, Turchan-Cholewo, J, Allred, KF, Bruce-Keller, AJ, **Wilson, ME** (2007) Modification of HIV expression by estrogens. Society for Neuroscience.
31. Heron, PM, **Wilson ME** (2007) 17 $\beta$ -Estradiol attenuates Tat-induced HIV-LTR activation: An investigation into the role of estrogen receptors Society for Neuroscience.
32. Prewitt, AK, Vula, F, Westberry, JM, **Wilson, ME** (2007) Estrogen receptor-alpha mRNA regulation in the mouse cortex via methylation following injury in vitro. Society for Neuroscience.

33. Pyzola, S, Westberry, JM, Trout, AL, Sengoku, T, **Wilson, ME** (2008) Estrogen treatment causes neuroprotection in rat cortical explants following ischemic injury. Institutional Development Award, NISBRE Symposium, Washington, DC.
34. Jasper, DK, Prewitt, AK, Trout AL, Westberry, JM, **Wilson, ME** (2008) Developmental regulation of ER- $\alpha$  in hypothalamic explants. Institutional Development Award, NISBRE Symposium, Washington, DC.
35. Westberry, JM, Trout, AL, **Wilson, ME** (2008) Mechanisms of regulation of estrogen receptor beta gene expression in the cortex of female rats during aging. Society for Neuroscience.
36. Trout, AL, Westberry, JM, Jasper, DK, **Wilson, ME** (2008) Gender differences in gene expression following an *in vitro* model ischemic brain injury. Society for Neuroscience.
37. Sengoku, T, Heron, PM, **Wilson, ME** (2009) 17 beta-estradiol and a GPR30 agonist, G1 reduce Tat-mediated LTR activation in astrocytes. Society for Neuroscience.
38. Westberry, JM, Trout, AL, **Wilson, ME** (2009) Changes in promoter methylation in the rat cortex following middle cerebral artery occlusion. Society for Neuroscience.
39. Trout, AL, Westberry, JM, **Wilson, ME** (2009) Gender differences in gene expression following an *in vitro* model ischemic brain injury. Society for Neuroscience.
40. Sengoku, T, Westberry, JM, Lampl, C, Webb, L, **Wilson, ME** (2010) Epigenetic changes in estrogen receptor alpha following neonatal hyperoxia. Society for Neuroscience.
41. Westberry, JM, Trout, AL, **Wilson, ME** (2010) Hormone-specific regulation of estrogen receptor alpha by methylation following middle cerebral artery occlusion. Society for Neuroscience.
42. Sengoku, T, Westberry, JM, **Wilson, ME** (2011) Epigenetic changes in gene expression following neonatal hyperoxia. Society for Neuroscience.
43. Westberry, JM, Trout, A, **Wilson, ME** (2011) Regulation of estrogen receptor gene expression during aging in the rat brain. Society for Neuroscience.
44. Sengoku, T, Westberry, JM, **Wilson, ME** (2012) Sex differences of epigenetic changes following neonatal hyperoxia. Society for Neuroscience.
45. Westberry, JM, **Wilson, ME** (2012) Regulation of ERalpha gene expression by demethylation and increased Tet1 expression following MCAO in the female mouse brain. Society for Neuroscience.
46. Westberry, JM, Sengoku, T, **Wilson, ME** (2013) Modulation of epigenetic events in the aging brain. Endocrine Society
47. Cartwright, LK, Sengoku, T, **Wilson, ME** (2014) An Interaction of the Effects of Ischemia and Estrogen in Astrocytes. National Council for Undergraduate Research, University of Kentucky.
48. Westberry, JM, Murray, K, **Wilson, ME** (2014) Sex differences in DNA demethylation following stroke. Society for Neuroscience.
49. Murray, KM, Westberry, JM, **Wilson, ME** (2015). Regional differences in epigenetic regulation of estrogen receptor beta in the aging brain following environmental enrichment. Markesberry Symposium, University of Kentucky.
50. Sithisarn, T, Legan SJ, **Wilson, ME**, Bada, H (2016). Postnatal treatment with morphine following prenatal opiate exposure increases brain cell death compared to clonidine. Pediatric Academic Societies, San Diego, CA.

51. Smith, HE, Murray, KM, **Wilson, ME** (2016). GADD45 gene expression in the first year of life: Analysis using a rodent model. Undergraduate Research Spotlight. University of Kentucky.
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### INVITED PRESENTATIONS

- March, 2000 "Estrogen neuroprotection following an ischemic injury" HIV Forum, University of Kentucky, Lexington, KY
- April, 2000 "Estrogen neuroprotection: A role for estrogen receptors" Young Investigator Symposium, Workshop on Steroid Hormones and Brain Function, Breckenridge, CO
- April, 2003 "Multiple mechanisms of estrogen neuroprotection" Department of Molecular and Biomedical Pharmacology, University of Kentucky, Lexington, KY
- March, 2004 "Estrogen and HIV dementia: Molecular interactions between HIV and estrogen receptors in astrocytes" Workshop on Steroid Hormones and Brain Function, Breckenridge, CO
- June, 2004 "HIV protease inhibitors and atherosclerosis: A role for estrogen?" Department of Medicine, Charles Drew University, Los Angeles, CA
- August, 2004 "Gender differences in atherosclerosis induced by HIV protease inhibitors" Endocrine Research Dinner, Department of Medicine, University of Kentucky, Lexington, KY
- October, 2004 "Modulation of apoptotic pathways: Estrogen and HIV neurotoxicity" Gonadal Hormone Modulation of Brain Vulnerability, Mini-Symposium, Society for Neuroscience Meeting, San Diego, CA
- May, 2006 "HIV infection in women: Multiple sites of possible estrogen action" 25<sup>th</sup> Annual University of Kentucky Symposium in Reproductive Sciences and Women's Health, Lexington, KY
- March, 2007 "Epigenetic regulation of estrogen receptor alpha: A role in development and adulthood" Workshop on Steroid Hormones and Brain Function, Breckenridge, CO
- June, 2007 "Epigenetic modification of the ER $\alpha$  promoter during mouse development" Endocrine Society Meeting, Toronto, CA
- September, 2008 "Regulation of estrogen receptor gene expression: New insights and novel mechanisms" United States/Japan Bilateral Neurosteroid Symposium, Gifu, Japan
- November, 2008 "Regulation of estrogen receptor gene expression in the injured brain" University of Kentucky Reproductive Sciences Forum, Lexington, KY
- March, 2009 "The ups and downs of estrogen receptor regulation" Workshop on Steroid Hormones, Breckenridge, CO
- April, 2009 "Regulation of Estrogen Receptor Gene Expression by DNA Methylation," Michigan State University, Lansing, MI

October, 2009 “Epigenetics as a regulator of hormone sensitivity”, The Epigenetics of Sex Differences in the Brain, Mini-Symposium, Society for Neuroscience Meeting, Chicago, IL \*\*Selected for a “Hot Topics” press release\*\*

May, 2010 “DNA methylation as a regulator of gene expression in the developing brain” Department of Pathology Conference, University of Kentucky, Lexington, KY

April, 2011 “Regulation of neuronal genes” Department of Biology, Morehead State University, Morehead, KY

May, 2011 “Epigenetic regulation of neuronal genes” Center for the Integrative Study of Animal Behavior, Indiana University, Bloomington, IN

August, 2011 “Roles of epigenetic gene expression in the developing brain” United States-Latin America Workshop in Neuroendocrinology, Vina del Mar, Chile

February, 2012 “Epigenetic regulation of neuronal genes” Loyola University Chicago, Maywood, IL

April, 2012 “Gene expression in the developing brain” Department of Biology, Kentucky State University, Frankfort, KY

March, 2013 “Epigenetic regulation of neuronal genes” Bellarmine College, Louisville, KY

June, 2013 “Modulation of epigenetic events in the aging brain” Endocrine Society Meeting, San Francisco, CA

October, 2013 “Sex differences following stroke” Department of Psychology, University of Kentucky, Lexington, KY

December, 2013 “Epigenetic regulation of neuronal genes” Centre College, Danville, KY

February, 2014 “Sex differences in the regulation of neuronal genes” Eastern Kentucky University, Richmond, KY

November, 2014 “Sex differences in neuronal gene expression” 11<sup>th</sup> Annual Gilbert S. Greenwald Symposium on Reproduction and Regenerative Medicine. University of Kansas, Kansas City, MO

November, 2014 “Sex differences in DNA demethylation following brain injury” Society for Neuroscience, Nanosymposium, Washington, DC

March, 2016 “Dynamic Regulation of Estrogen Receptors by Epigenetic Mechanisms” National Red Wear for Women Day Symposium, University of Kentucky, Lexington, KY

June, 2019 “Sex differences in neural responses to brain injury” Society for Behavioral Neuroendocrinology, Bloomington, IL

June, 2021 Sex Differences in Experimental Neurotrauma: Tips, Advice and Live Q&A Panel. National Neurotrauma Society

March, 2022 Robert J. Handa Memorial Research Day – Pre-meeting to the Workshop on Steroid Hormones and Brain Function, Colorado State University