

**Donna L. Korol**  
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### Education

1978-1983 B.S., Zoology, University of Wisconsin-Madison  
1985-1991 Ph.D., Neuroscience, University of Virginia, (Mentor: P.C. Brunjes)  
1991-1994 Postdoctoral Fellow (NIH), University of Arizona, Arizona Research Laboratories, Division of Neural Systems, Memory and Aging (Mentor: C.A. Barnes)

### Positions Held

1983-1985 Predoctoral Research Assistant, Department of Psychobiology, University of California, Irvine (PI: James McGaugh)  
1994-1998 Instructor, Department of Psychology, University of Virginia  
1994-1998 Research Assistant Professor, Department of Psychology, University of Virginia  
1998-1999 Visiting Assistant Professor, Department of Psychology, Washington and Lee University  
1999-2000 Assistant Professor, Department of Psychology, Binghamton University, SUNY  
2000-2002 Research Assistant Professor, College of Medicine and Department of Psychology, University of Illinois at Urbana-Champaign  
2002-2008 Assistant Professor, Department of Psychology and College of Medicine, University of Illinois at Urbana-Champaign  
2004-present Affiliate, Institute for Genomic Biology, University of Illinois at Urbana-Champaign  
2008-2012 Associate Professor, Department of Psychology, University of Illinois at Urbana-Champaign  
2008-2012 Coordinator of outreach, Neuroscience Program, University of Illinois  
2009-2012 Course Coordinator for Behavioral Sciences for M1, College of Medicine, University of Illinois at Urbana-Champaign  
2009-2012 Affiliate, Department of Molecular and Integrative Physiology, University of Illinois at Urbana-Champaign  
2012-present Associate Professor, Department of Biology, Syracuse University  
2012-present Affiliate, Department of Neuroscience & Physiology, Upstate Medical University  
2012-present Affiliate, Aging Studies Institute, Syracuse University  
2013-present Posse Foundation Mentor for Syracuse University LA Posse 2 Scholars

### Awards, Honors, and Fellowships

1984 NIMH Predoctoral Training Fellowship  
1986-1986 Dupont Fellowship  
1987-1990 NICHD Predoctoral Training Fellowship in Neural and Behavioral Development:  
1988 AChemS Travel Award  
1989-1990 University of Virginia Graduate School of Arts and Sciences Dissertation Year Award  
1991-1994 NIH National Research Service Award (post-doctoral)  
1996 Kellogg *Insert of the Year Award* for scientific review on Breakfast and Performance  
2002 University of Illinois, Initiative on Aging incentive research award  
2003 Neurobiology of Lipids, Editors' Choice award for noteworthy presentation at Society for Neuroscience annual meeting  
2004-2005 Mabel Kirkpatrick Hohenboken Teaching Enhancement Award, University of Illinois, Department of Psychology  
2002-2006 Recognized on the students' List of Excellent Teachers, University of Illinois

2008-2011 Recognized on the students' List of Excellent Teachers, University of Illinois  
2008 University of Illinois, Provost's Campus Committee on Promotion and Tenure  
Outstanding Achievement Award  
2009 Top Reviewer for *Hormones and Behavior*, Elsevier Press  
2014 James K. Duah-Agyeman Faculty of the Year Award for the Center for Graduate  
Preparation and Achievement, Syracuse University

## **Professional Activities**

### ***Editorial Boards***

2006-2015 *Hormones and Behavior*, Elsevier  
2009-present *Neurobiology of Learning and Memory*, Elsevier  
2009-present *Frontiers in Aging Neuroscience*, Frontiers Journal Series  
2012-2015 *Conference Papers in Science: Neuroscience*, Hindawi (final issue 2015)

### ***Guest Editor***

2010-2011 Special issue of *Neurobiology of Learning and Memory*, titled, "Memory Impairment  
and Disease"

### ***Ad-hoc manuscript reviewer***

Behavioral and Brain Functions; Behavioral Neuroscience; Behavioural Brain Research; Behavioural  
Processes; Brain Research; eLife; European Journal of Neuroscience; Experimental Neurology;  
Frontiers in Aging Neuroscience; Hippocampus; Hormones and Behavior; Journal of  
Neurochemistry; Journal of Neuroendocrinology; Journal of Neuroscience; Journal of Neuroscience  
Methods; Journal of Neuroscience Research; Learning and Memory; Molecular Therapy;  
Neurobiology of Aging; Neurobiology of Learning and Memory; NeuroImage; Neuroscience;  
Neuroscience Letters; Pharmacology, Biochemistry and Behavior; Physiology and Behavior;  
Proceedings of the National Academy of Sciences; PLoS One; Psychoneuroendocrinology;  
Reproduction; Reviews in the Neurosciences; Stress

### ***Grant Review Boards***

2004, 2005 Member, NSF Advisory Panel for IOS, Neural Systems cluster/modulation programs  
(declined 2010; 2013; 2015)  
2016 Invited Member, NSF Advisory Panel for IOS, Behavioral Systems cluster/Animal  
Behavior programs  
2016 Member, Canadian Institutes for Health Research

### ***Ad-hoc grant reviewer***

National Science Foundation; Alzheimer's Association; U.S. Veterans Affairs; PPP Foundation (UK),  
Medical Research Council (UK); Canadian Institutes for Health Research; Several university and  
state research award programs

### ***Membership***

American Association for the Advancement of Science; Society for Neuroscience; Society for  
Behavioral Neuroendocrinology; Women in Neuroscience; Association of Women in Science

### ***Committee and conference service***

#### Departmental and University

1991-1994 Member, University of Arizona, Committee on Gerontology  
1994-1998 Member, University of Virginia Center on Aging  
2001-2006 Member, University of Illinois Initiative on Aging (final year, 2006)

2001-2003 Member, University of Illinois, Neuroscience Graduate Program, Admissions Committee

2005-2006 Chair, University of Illinois, Neuroscience Graduate Program, Admissions Committee

2002-2010 Member, Graduate Awards Committee/Graduate Education Committee, Department of Psychology, University of Illinois

2003-2005 University of Illinois, Neuroscience Graduate Program, Executive Committee

2006-2007 University of Illinois, Neuroscience Graduate Program, Executive Committee

2010-2012 University of Illinois, Neuroscience Graduate Program, Executive Committee

2003-2005 University of Illinois, Department of Psychology, Departmental Advisory Committee to Division of Animal Resources

2007-2008 Member, Committee to Evaluate the Teaching Plan, Department of Psychology

2008-2012 Member, Department of Psychology, Academic Disciplinary Committee

2009 Member, Department of Psychology search committee for Psych 100 coordinator

2009-2011 Course coordinator, Behavioral Sciences for Health Professionals, College of Medicine, University of Illinois at Urbana-Champaign

2010 Member, Department of Psychology Undergraduate Distinction Committee

2011 Member, Search Committee for Medical Scholars Program Coordinator

2011 Member, Search Committee for OLLI Director

2011-2012 Member, Independent Program of Study (IPS) Committee, College of LAS, University of Illinois at Urbana-Champaign

2011-2012 Member, Staff and Faculty Awards Committee, Department of Psychology, University of Illinois at Urbana-Champaign

2012 Planning committee for Central NY Neuroscience Website, Upstate Medical University

2012-2013 Governance committee, Neuroscience Initiative, Syracuse University

2012-2013 Curriculum committee, Neuroscience Initiative, Syracuse University

2013-2015 Curriculum committee, Neuroscience Program, Upstate Medical University

2013-2014 Member, Search Committee Biochemistry faculty position, Syracuse University

2014-present Member, Faculty Advisory Board, LSAMP program, Syracuse University

2014-2015 Member, Search Committee Neuroscience faculty position, Syracuse University

2014-present Member, Curriculum Committee, Department of Biology, Syracuse University

2015-2016 Member, Graduate Committee, Department of Biology, Syracuse University

2016-present Member, Mentoring Committee Jessica MacDonald, Department of Biology, Syracuse University

#### Societies and Conferences

2002 Organizer (and speaker) for Bench to Bedside symposium on Menopause: Making Choices, Medical Scholars Program, School of Medicine, University of Illinois

2003 Invited Organizer and Program Chair for the XXVII Winter Conference on the Neurobiology of Learning and Memory, Park City, Utah, January 11-14

2003 Chair and speaker in session titled *Systems and cellular pathways of ovarian steroid actions on learning and memory*, at the XXVII Winter Conference on the Neurobiology of Learning and Memory, Park City, Utah, January 11-14

2003 Chair of Neuroscience Session, UIUC Initiative on Aging, First Annual Summer Conference, June 17-18

2007-2011 Member, Society for Behavioral Neuroendocrinology Education Committee

2009 Invited session chair, *Exercise, Physical Activity and Brain Function*, at the XXXIII Winter Conference on the Neurobiology of Learning and Memory, Park City, Utah, January 3-6

2012 Invited co-chair, Data Blitz Session, XXXVI Winter Conference on the Neurobiology of Learning and Memory, Park City, Utah, January 4-7

2014-present Invited host, Annual Society for Neuroscience professional development workshop titled, *Career Development Topics: A Networking Event* held at SfN conference.

### **Public Engagement and Outreach**

1993-1998 Leader, tutorials and debates on *Animal Rights v. Animal Research*, area schools, Charlottesville, VA

1994-1999 Developer, project-based curricula (HOWS - Hands On With Science) for teaching neuroscience to 7-12 graders, Tandem Friends School, Charlottesville, VA and to 6-8 graders at Village Middle School for girls, Charlottesville, VA

1998-1999 Co-founder of Renaissance School, Charlottesville, VA

1998-2002 Mentor for pre-college science teachers through the Society for Neuroscience

1998-present Outreach Partner, Society for Neuroscience

2001 Developed and implemented GirlZone workshop on Bodacious Brains, Champaign-Urbana, October 20

2001-2002 Co-organizer and participant, Brain Awareness Week, Neuroscience Program, University of Illinois

2002 Invited presenter, Society for Neuroscience Hands-on Workshops for Educators

2003 Invited keynote speaker and workshop leader for Learning Brain Expo 2003, Brain workshop for educators, Chicago, IL, July 17

2003 Invited speaker at the Continuing Education colloquia: Geriatrics for Non-physicians, University of Illinois, Department of Family Medicine, Kankakee, IL. Presented, "Aging brain and its functional implications", September 26 (2004, declined)

2003-2009 Organizer and participant, Brain Awareness Week, Neuroscience Program, University of Illinois

2005-2006 Invited participant, Freeman Fellows program, UIUC. Facilitated roundtable discussions about academic integrity with Freeman Fellows

2007-2010 Invited participant, annual Illinois Summer Neuroscience Institutes

2008 Invited participant, University of Illinois' Osher Life Long Learning Institute (OLLI)

2008 Co-organizer, exhibits for Chicago Science in the City, December 27-29

2009 Coordinator, OLLI course on Brains in Society

2010-2012 Co-developer of neuroscience curricula and S.T.A.R. program for Don Moyer Boys and Girls club

2010-2012 Member, Sr. Project Committee, University Laboratory High School, Urbana, IL

2011 Mentor for University of Illinois – University Laboratory High School iSTEM summer interns (Tahar Bowen-Pinto, Sunjay Koshy)

2011 Mentor for OLLI-NSP Citizen-Scientist program

2011-2013 Co-developer of F.I.N.D. (Faces in Neuroscience Discovery) series at Orpheum Children's Science Museum

2011-2013 Co-developer of FIND Orphy: Portable science for the public, collaborative museum exhibit with the Orpheum Children's Science Museum, Champaign, IL

2013-2014 Developer, with Mark Morris Dance Group and SU Arts Engage, Dance for Parkinson's workshop titled, *Movement for Healthy Aging*. April 11-12, 2014.

2015-present Co-founder, Movement for Healthy Aging Initiative, dance through exercise and exercise through dance program for underserved communities

2016-present Highlighted scientist, Wrinkled Brain Project

### **Professional Development Activities for Trainees**

2008-2012 Co-developer and facilitator, annual summer Neuroscience Teacher Institutes

2009-2012 Co-developer and facilitator, Saturday Neuroscience Teacher Institutes

2013 Invited speaker, WiSE panel on peer evaluation, October 29, 2013

2014-2016 Invited participant, SfN Professional Development Workshop

## **Funding**

### **Current**

5/1/16-5/1/17

Health foundation of Western and Central New York

*Movement for Healthy Aging*

Role: Co-I (J. Wilmoth, PI; M. Pagan, Co-I)

8/2016-7/2017

Snow Foundation

*Movement for Healthy Aging*

Role: Co-I (J. Wilmoth, PI; M. Pagan, Co-I)

7/1/16-6/30/17

New York State Appropriations, New York State Office of Children and Family Services

*Movement for Healthy Aging*

Role: Co-I (J. Wilmoth, PI, M. Pagan, Co-I)

9/1/11-8/31/17

NSF IOS 318490

*Contributions of astrocytes to metabolic modulation of memory*

Role: Co-I (P. Gold, PI)

9/1/2010-8/31/2017

NIH P50 AT006268 from ODS, NCCIH, and NCI Dietary Supplement Research Centers: Botanicals (W. Helfrich Program PI; subcontract from UIUC)

*Botanical Estrogens: Mechanisms, Dose and Target Tissues*

Role: Project Co-I (S. Schantz, Project PI)

10/2016-9/2017

NIH R56 *Mechanisms of cognitive impairment in sleep apnea syndrome*

Role: Consultant (I. Topchiy, PI)

### **Completed**

5/1/14-4/30/16

NIH/NINDS 5R21NS085502-02

*Exercise recovers cholinergic dysfunction through neurotrophin modulation*

Role: consultant (L. Savage, PI)

7/1/13-6/30/15

NIH P30 AG034464, Pilot project for Center for Aging and Policy Studies, Syracuse University

*Use it and boost it: Enhancing cognition in elderly with prior mental activity*

Role: PI

7/1/13-6/30/15

NIH P30 AG034464, Pilot project for Center for Aging and Policy Studies, Syracuse University

*Energizing the aging brain for optimal learning and memory*

Role: Co-PI (P. Gold, PI)

10/2011-9/2012

Supplement to NIH 1 R25 RR024251-01A2 MAA

*Brain CASE (Computer Aided Student Exploration): development of a video game on traumatic brain injury*

Role: Co-PI (B. Hug, PI)

3/10/2011-3/09/2012

NSF IOS 118414, Supplement to IOB 0520876

*Estrogen, learning strategy, and neural systems: Timing and cellular mechanisms.*

Role: PI

11/1/2009-10/31/2015

NIH 1 R25 RR024251-01A2 MAA, SEPA program

*Project NEURON: Novel Education for Understanding Research on Neuroscience.*

Role: Co-PI (B. Hug, PI)

9/1/2009-8/31/2013

NSF IOS 0843175, ARRA

*Neuroendocrine modulation of LTP durability*

Role: PI

8/1/2005-7/31/2011

NSF IOB 0520876

*Estrogen, learning strategy, and neural systems: Timing and cellular mechanisms.*

Role: PI

10/2005-12/2005

Katrina relief award, Society for Neuroscience

*Research support for displaced UNO students*

Role: Mentor

9/01/04-8/31/10

NIH P01 AG024387-04 (Helferich PI)

*Phytoestrogens and Aging: Dose, Timing & Tissue*

Role: Co-PI of Project 3: Dietary estrogens and cognitive function during aging (Schantz, PI)

9/1/2000-8/31/2004

NSF IBN 0081061

*Estrogen modulation of learning strategy: A neural systems approach*

Role: PI

1994-1997

Mars Corporation

*Glucose and nutritional effects on cognition in children,*

Role: Co-PI (P. Gold, Co-PI)

1998-1999

Austin Foundation Memorial Fund award

*Development of innovative secondary school curriculum for Renaissance High School*

Role: Co-PI (G. Kessler and M. Davis, Co-PIs)

1996-1999

Kellogg Company Research award

*Breakfast and behavior in the elderly: Regulation by post-prandial glucose*

Role: PI

### ***Under review or revision***

- NIH: Behavioral, Biochemical, and Neuroanatomical Impact of Isolation and Rehabilitative Effects of Enrichment in a Mouse Model of Aging. Co-I (Michael Zigmond, PI; and Richard Smeyne, Co-Is)
- NIH: A unifying molecular biology for cognitive changes with menopause. PI
- Alzheimer's Association Research Grant (AARG) preproposal: Metabolic syndrome inverts estrogenic effects on cognition. PI
- NIH: BDNF variant impact on the nigrostriatal system and response to dopaminergic therapy. Consultant (Tim Collier, PI; Kathy Steece-Collier and Caryl Sortwell, Co-Is)

### **Extramural Training and Instructional Support**

#### ***Current***

9/1/15-8/31/17

NIH R36

Curcumin Supplementation and Aging Skeletal Muscle

Candace Receno, PhD candidate

Role: Co-mentor (Mentor: K. DeRuisseau)

#### ***Completed***

7/1/00-6/30/10

NIH 5 T32 ES007326-10

NIEHS: Research Training Program in Environmental Toxicology

PI: S.L. Schantz

Role: Preceptor

8/02-8/12

NIH T32 HD00733

NIHHD: Advances in Sensory and Developmental Neuroscience (ASDN) Training program (formerly, Developmental Psychobiology and Neurobiology training program).

PI: W.T. Greenough

Role: Preceptor

### **Intramural Research Support**

#### ***Completed***

2012-2013

Public Engagement grant, University of Illinois

*FIND Orphy*

Role: Co-PI (Barbara Hug, co-PI)

6/20/2003-6/19/2008

UIUC VCR and Initiative on Aging

*Incentive funds*

Role: Co-PI (of five)

2002-2012

University of Illinois, Initiative on Aging Incentive Award

*Strategy Shifts in Aging Female Rats*

Role: PI

**Research Interests:** My primary research interests aim to understand experience-dependent and experience-expectant brain changes that modulate learning and memory. My work takes a multiple memory systems approach to understand how changes in brain state, e.g. through hormones, prior experience, and age, modulate the neural mechanisms of learning, memory, and forgetting. Overarching aims are to develop behavioral and neurobiological models of aging and neurodegenerative diseases.

- Estrogenic modulation of neural plasticity, bioenergetics, and cell signaling events;
- Contributions of astrocytes to brain aging;
- Neural mechanisms of the benefits of physical and mental activity across the adult lifespan, focusing on the roles of neurometabolism and trophic factor signaling;
- Cognitive, metabolic, and cell biological phenotypes of Parkinson's disease to identify pre-motor changes that provide early diagnostics for prevention and intervention of pathology;
- Age-related shifts in synaptic plasticity as a model of forgetting.

### **Current Projects**

- Shifts in learning and memory across the lifespan: role of hormones and memory systems
- Modulation of learning and memory through estrogen mediated receptor transactivation
- Astrocyte contributions to learning and memory across the lifespan
- Estradiol control over brain energy substrates
- Neural and cognitive plasticity following physical and mental activity in young and old animals
- Role of brain-derived neurotrophic factor (BDNF) signaling in neural plasticity
- Building a fitness toolbox using peripheral and central markers of physiological health
- Modeling the neurochemical and cognitive consequences of menopause
- Bidirectional shifts in cognition in rodent models of Parkinson's disease

**Teaching Interests and Experience:** My teaching is student-centered, integrates real-world contexts into academic content, and extends outside the classroom and into my and my colleagues' laboratories. I view the classroom as a safe space for discovery of knowledge and ignorance as much as a forum for the exchange of ideas, where students and instructors are actually both. My teaching interests span a broad range of topics in Neuroscience and across levels of instruction, reflecting the integrative approach I take in my research. I work to keep my classroom practices current by reading science education research and by attending conferences aimed at undergraduate education (e.g. participant in FUN workshop, Ithaca College, 2014). Courses I have developed include Biology of Aging, Neurodegenerative Disease, Neurobiology of Aging, Exercise and Brain Function, Metabolism and Brain function, Neuroendocrinology, Hormones and Behavior, Brain, Behavior and Gender, Animal Behavior, Synaptic Plasticity, Menopause and Mind, Physiological Psychology, Behavioral Sciences for medical students, and laboratories in Neuroscience, Motivation, and Current Behavioral Neuroscience Methods.

**Public Engagement:** I am deeply committed to enhancing science literacy in students with limited access to formal scientific exploration and have dedicated many activities throughout my professional career to doing so. One recent goal has been to develop innovative primary and secondary school curricula to reduce the relatively high attrition rate for female and other under-represented students entering basic science fields. I was co-PI on an NIH-funded Science Education Partnership Award titled *Project NEURON* in which we developed middle and high school neuroscience modules based on cutting-edge research at the University of Illinois. Across the country, these curricula have been adopted for and enacted in classrooms that range from entry-level biology to honors anatomy and physiology. As outreach coordinator for the Neuroscience Program, I developed and facilitated several programs that brought STEM content focused on neuroscience to the public, including an annual Brain Awareness Day event, after school programs for Don Moyer Boys and Girls clubs, and programs for adult education through the Osher Lifelong Learning Institute (OLLI). I currently serve on the Faculty Advisory Board for the Louis Stokes Alliance for Minority Participation in STEM at Syracuse University. Finally, in collaboration with the Aging Studies Institute at Syracuse University, I have initiated an exercise-through-dance program called *Movement for Healthy Aging* with the aim to increase physical, psychological, and social well-being of mature adults particularly in the local urban community.



## Publications

Bibliography of peer reviewed journal articles and book chapters can be found at:

<http://www.ncbi.nlm.nih.gov/sites/myncbi/donna.korol.1/bibliography/48131287/public/?sort=date&direction=ascending>

### **Peer reviewed and solicited chapters**

1. Sternberg, D.B., Korol, D., Novack, G.D. and McGaugh, J.L. (1986). Epinephrine-induced memory facilitation: Attenuation by adrenoceptor antagonists. *European Journal of Pharmacology*, 129, 189-193.
2. Steward, O., White, G., Korol, D., and Levy, W.B. (1988). Cellular events underlying long-term potentiation and depression in hippocampal pathways: Temporal and spatial constraints. In: P.W. Landfield and S.A. Deadwyler (Eds), *Long-Term Potentiation: From Biophysics to Behavior*. Alan R. Liss, Inc., New York, pp. 139-166. [Solicited chapter]
3. Brunjes, P.C., Korol, D.L., and Stern, K.G. (1989). Prenatal neurogenesis in the telencephalon of the precocial mouse *Acomys cahirinus*. *Neuroscience Letters*, 107, 114-119.
4. Korol, D.L., and Brunjes, P.C. (1990). Rapid changes in 2-DG uptake and amino acid incorporation following unilateral odor deprivation: A laminar analysis. *Developmental Brain Research*, 52, 75-84.
5. Brunjes, P.C., Caggiano, A.O., Korol, D.L., and Stewart, J.S. (1991). Unilateral olfactory deprivation: Effects on succinate dehydrogenase histochemistry and <sup>3</sup>H-leucine incorporation in the olfactory mucosa. *Developmental Brain Research*, 62, 239-244.
6. Korol, D.L., and Brunjes, P.C. (1992). Unilateral naris closure and vascular development in the rat olfactory bulb. *Neuroscience*, 46, 631-641.
7. Korol, D.L., Abel, T.W., Church, L.T., Barnes, C.A. and McNaughton, B.L. (1993). Hippocampal synaptic enhancement and spatial learning in the Morris swim task. *Hippocampus*, 3, 127-132.
8. Barnes, C.A., Jung, M.W, McNaughton, B.L., Korol, D.L., Andreasson, K. and Worley, P.F. (1994). LTP saturation and spatial learning disruption: Effects of task variables and saturation levels. *Journal of Neuroscience*, 14, 5793-5806.
9. Korol, D.L. (1996). Breakfast and Performance. *Journal of American Dietetic Association*, 96, A993-A996.
10. Norris, C.M., Korol, D.L. and Foster, T.C. (1996). Increased susceptibility to induction of long-term depression and long-term potentiation reversal during aging. *Journal of Neuroscience*, 16, 5382-5392.
11. Wilkniss, S.M., Jones, M.G., Korol, D.L., Gold, P.E. and Manning, C.A. (1997). Age-related differences in an ecologically based study of route learning. *Psychology and Aging*, 12, 372-375.
12. Wilkniss, S.M., Jones, M.G., Korol, D.L., and Manning, C.A. (1997). Visuospatial recall in cortical and subcortical dementias. *Brain and Cognition* 35, 356-359.

13. Korol, D.L. and Gold, P.E. (1998). Glucose, memory, and aging. *American Journal of Clinical Nutrition*, 67, 764S-771S.
14. Manning, C.A., Stone, W.S., Korol, D.L. and Gold, P.E. (1998). Glucose enhancement of 24-h memory retrieval in healthy elderly humans. *Behavioural Brain Research*, 93, 71-76.
15. Gold, P.E., McIntyre, C. K., McNay, E., Stefani, M. and Korol, D.L. (2001). Neurochemical referees of dueling memory systems. In: P.E. Gold and W. Greenough (Eds), *Memory Consolidation: Essays in Honor of James L. McGaugh, A Time to Remember*. American Psychological Association Book Publishers, Washington D.C. pp. 219-248. [Conference proceedings]
16. Korol, D.L. and Manning, C.A. (2001). Effects of estrogen on cognition: Implications for menopause. In: M.E. Carroll and J.B. Overmier (Eds), *Animal Research and Human Health: Advancing Human Welfare Through Behavioral Science*. American Psychological Association Book Publishers, Washington D.C., pp. 305-322. [Solicited chapter]
17. Korol, D.L. and Kolo, L.L. (2002). Estrogen-induced changes in place and response learning in young adult female rats. *Behavioral Neuroscience*, 116, 411-420.
18. Korol, D.L. (2002). Enhancing cognitive function across the life span. In: D. Harman (ed) *Increasing the Healthy Life Span: Conventional Measures and Slowing the Innate Aging Process*. Annals of the New York Academy of Sciences, 959, 167-179. [Conference proceedings]
19. Marriott, L.K. and Korol, D.L. (2003). Short-term estrogen treatment in ovariectomized rats augments hippocampal acetylcholine release during place learning. *Neurobiology of Learning and Memory*, 80, 315-322.
20. Allred, C.D., Allred, K.J., Ju, Y.H, Clausen, L.M., Doerge, D.R., Schantz, S.L., Korol, D.L., Wallig, M.W., and Helferich, W.G. (2004). Dietary genistein results in larger MNU-induced, estrogen-dependent mammary tumors following ovariectomy of Sprague-Dawley rats. *Carcinogenesis*, 25, 211-218.
21. Korol, D.L., Malin, E.L., Borden, K.A., Busby, R.A., and Couper-Leo, J.M. (2004). Shifts in preferred learning strategy across the estrous cycle in female rats. *Hormones and Behavior*, 45, 330-338.
22. Conrad, C.D., Jackson, J.L., Wiczorek, L., Baran, S.E., Harman, J., Wright, R.L., and Korol, D.L. (2004). Acute stress impairs spatial memory in male but not female rats: Influence of estrous cycle. *Pharmacology, Biochemistry, and Behavior*, 78, 569-579.
23. Korol, D.L. (2004). Role of estrogen in balancing contributions from multiple memory systems. *Neurobiology of Learning and Memory*, 82, 309-323. [Evaluated by Faculty of 1000:] <http://www.f1000biology.com/article/15464412/evaluation>
24. McElroy, M.W. and Korol, D.L. (2005). Intrahippocampal muscimol shifts learning strategy in gonadally intact young adult female rats. *Learning and Memory*, 12, 150-158. [see commentary by T. Shors, same issue.]

25. Erickson, K.I., Colcombe, S.J., Raz, N., Korol, D.L., Scalf, P., Webb, A., Cohen, N.J., McAuley, E., and Kramer, A.F. (2005). Selective sparing of brain tissue in postmenopausal women receiving hormone replacement therapy. *Neurobiology of Aging*, 26, 1205-1213.
26. Zurkovsky, L., Brown, S.L., and Korol, D.L. (2006). Estrogen modulates place learning through estrogen receptors in the hippocampus. *Neurobiology of Learning and Memory*, 86, 336-343.
27. Zurkovsky, L., Brown, S.L., Boyd, S.E., Fell, J.A., and Korol, D.L. (2007). Estrogen modulates learning in female rats by acting directly at distinct memory systems. *Neuroscience*, 144, 26-37.
28. Korol, D.L. and Gold, P.E. (2007). Modulation of learning and memory by adrenal and ovarian hormones, In: R.P. Kesner and J.L. Martinez (Eds), *Neurobiology of Learning and Memory*, 2<sup>nd</sup> Edition, Elsevier, New York, NY, 243-268. [Solicited chapter]
29. Erickson, K.I., Colcombe, S.J., Elavsky, S., McAuley, E., Korol, D.L., Scalf, P., Kramer A.F. (2007). Interactive effects of fitness and hormone treatment on brain health in postmenopausal women. *Neurobiology of Aging*, 28, 179-185.
30. Korol, D.L. and Gold, P.E. (2008). Epinephrine converts LTP from transient to durable form in awake rats. *Hippocampus*, 18, 81-91.
31. Wang, V.C., Sable, H.J.K., Ju, Y.H., Allred, C.D., Helferich, H.G., Korol, D.L., and Schantz, S.L. (2008). Effects of chronic estradiol treatment on delayed spatial alternation and differential reinforcement of low rates of responding. *Behavioral Neuroscience*, 122, 794-804.
32. Dohanich, G.P., Korol, D.L., and Shors, T.J. (2009). Steroids and Cognition, In: D. Pfaff, A. Arnold, R. Rubin, S. Fahrback, and A. Etgen (Eds), *Hormones, Brain and Behavior*, 2<sup>nd</sup> edition, Academic Press, New York, NY, 539-576. [Invited author]
33. Erickson, K.I. and Korol, D.L. (2009). The effects of hormone replacement therapy on the brains of postmenopausal women: A review of human neuroimaging studies. In: W. J. Chodzko-Zajko, A.F. Kramer, and L. Poon (Eds), *Enhancing Cognitive Functioning and Brain Plasticity*, Human Kinetics, Champaign, IL. 133-158. [Solicited chapter; Invited author].
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35. McLaughlin, K.J., Wilson, J.O., Harman, J. Wright, R.L., Wiczorek, L.A., Gomez, J., Korol, D.L., and Conrad, C.D. (2010). Chronic 17 $\beta$ -estradiol or cholesterol prevents stress-induced hippocampal CA3 dendritic retraction in ovariectomized female rats: Possible correspondence between CA1 spine properties and spatial acquisition. *Hippocampus*, 20, 768-786.
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47. Gold, P.E. and Korol, D.L. (2012). Making memories matter, In: Special issue of Frontiers in Integrative Neuroscience, "Impact of Emotion on Cognition", *Frontiers in Integrative Neuroscience*, 6:116, Dec 18, 2012. doi: 10.3389/fnint.2012.00116
48. Blattner, M., Hug, B, Watson, P, and Korol, D. (2012). The Guppy Game: Understanding the big ideas of natural and sexual selection. *The Science Teacher* 79(5), 32-37.
49. Blattner, M., Hug, B., Ogrodnik, J., & Korol, D. (2013). What color do you see? A color-sorting activity in which students collect data and articulate scientific explanations. *The Science Teacher*, 80(3), 62-65.
50. Gold, P.E., Newman, L.A., Scavuzzo, C.J., and Korol, D.L. (2013). Modulation of multiple memory systems: From neurotransmitters to metabolic substrates. *Hippocampus*, 23, 1053-1065. doi: 10.1002/hipo.22182

51. Korol, D.L., Gold, P.E., and Scavuzzo, C.S (2013). Use it and boost it with physical and mental activity. *Hippocampus*, 23, 1125-1135. doi:10.1002/hipo.22197
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53. Pollack, A.E. and Korol, D.L. (2013). The use of haiku to convey complex concepts in neuroscience. *Journal of Undergraduate Neuroscience Education (JUNE)*, Fall, 12(1), A42-A48.
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55. Finy, M.S., Bresin, K., Korol, D.L., and Verona, E. (2014). Impulsivity, risk taking, and cortisol reactivity as a function of psychosocial stress and personality in adolescents. *Development and Psychopathology* 26, 1093-1111, doi: 10.1017/S0954579414000212. *Corrigendum: Developmental and Psychopathology* 26, 1183. doi: 10.1017/S0954579414000595
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57. Korol, D.L. and Pisani, S.L. (2015). Estrogens and cognition: Friends or Foes? Special Issue on Estradiol and Cognition. *Hormones and Behavior*, 74, 105-115.
58. Pisani, S.L., Neese, S.L., Katzenellenbogen, J.A., Schantz, S.L., and Korol, D.L. (2016). Estrogen receptor selective agonists modulate learning in female rats in a dose- and task-specific manner. *Endocrinology*, 157, 292-303. DOI: <http://dx.doi.org/10.1210/en.2015-1616>
59. Newman, L.A., Scavuzzo, C.S., Gold, P.E., and Korol, D.L. (2017). Training-induced elevations in extracellular lactate in hippocampus and striatum: dissociations by cognitive strategy and type of reward. *Neurobiology of Learning and Memory*, 137, 142-153. <http://dx.doi.org/10.1016/j.nlm.2016.12.001>
60. Gold, P.E. and Korol, D.L. (2017). Hormones and Memory. Reference Module in Neuroscience and Biobehavioral Psychology, 1-8. Elsevier Ltd, Oxford Academic Press UK. <http://dx.doi.org/10.1016/B978-0-12-809324-5.00336-9>
61. Kim, Y., Men, S.S., Brutsaert, T.D., Korol, D.L., Heffernan, K.S., and DeRuisseau, K.C. Effects of long-term exposure to low iron and branched-chain amino acid containing diets on aging skeletal muscle of F344BN rats. *Under revision, Pflügers Archiv – European Journal of Physiology*.
62. Korol, D.L., Morris, K.A., Gold, P.E., Mitterling, K.L., Rocha-Cabrero, F. Bilateral intrastriatal infusions of 6-OHDA improve spatial working memory in rats: implications for Parkinson's disease. *Under revision*.

63. Scavuzzo, C.J., Newman, L.A., Gold, P.E., and Korol, D.L. Task- and brain area-specific changes in brain glycogen and lactate in rats long after different cognitive experiences. *Under revision*.
64. Korol, D.L., Morris, K.A., Gold, P.E., Mitterling, K.L., Rocha-Cabrero, F. Bilateral intrastriatal infusions of 6-OHDA improve spatial working memory in rats: implications for Parkinson's disease. *Under revision*.
65. Korol, D.L. (2017). The highs and lows of hormones: Estrogens up- and down-regulate learning and memory through multiple memory systems. In: "Estrogens and Memory: Basic Research and Clinical Implications", for Oxford University Press Series in Behavioral Neuroendocrinology (edited by Gregory Ball, Jacques Balthazart, and Randy Nelson), *in final preparation*. [Solicited]

### **Opinion Pieces**

1. Korol, D.L. (1997). Glucose effects on cognition in school children, young adults and elderly. White paper for Asia Pacific Nutrition Advisory Panel proceedings.
2. Stevens, H., Payton, J., and Korol, D. (2002). Bodacious Brains Workshop for Girls (feature article). *Women in Neuroscience Newsletter*, January, pp. 4, 12-14.

### **In final preparation**

- Scavuzzo, C.J., Erickson, K.I., Epstein, D.E., Grinberg, Y., and Collier, R. and Korol, D.L. Exercise boosts learning through BDNF signaling in rats.
- Scavuzzo, C.J., Gold, P.E., and Korol, D.L. Measurement of BDNF release *in vivo* during learning: Dissociations by task, brain structure, and physical fitness.
- Scavuzzo, C.J., Gold, P.E., and Korol, D.L. Priming with a spatial working memory task enhances place and response learning: a role for BDNF-TRKB signaling.
- Gardner, R.S., Mohler, E.G., Newman, L.A., Gold, P.E., and Korol, D.L. Age-related shifts in learning strategies mirrored by reductions in extracellular glucose in male rats.
- Zurkovsky, L., Serio, S.S., Decker, L.A., Grinberg, Y., Fell, J.A., and Korol, D.L. Task difficulty and age interact with the modulating effects of estradiol on learning strategy.
- Kent, M.H., Zurkovsky, L., Fornelli, D.C., and Korol, D.L. Intrastriatal antiestrogen ICI 182,780 blocks estradiol-induced impairments in response learning in young adult female rats.
- Scavuzzo, C.J. and Korol, D.L. Intrahippocampal infusions of estradiol enhance or impair place learning depending on timing of treatment.
- Newman, L.A., Korol, D.L., and Gold, P.E. Age-related declines in efficacy of drug enhancement of memory in mouse models of Alzheimer's Disease and Down syndrome.
- Mitterling, K.L., and Korol, D.L. CREB signaling following estradiol treatment is confined to specific time points across memory systems.
- Korol, D.L., Pruis, T.A., Exercise and estradiol have opposing effects on learning strategies and synergistic effects on learning speed in middle-aged female rats.
- Korol, D.L. Richards, J., Williams, C.M. Post-training estradiol impairs memory for social transmission of food preference in young adult ovariectomized rats.
- Tunur, T. and Korol, D.L. Estrous cycle modulates pattern separation in young adult rats.
- Gold, P.E., Hamling, B., Newman, L.A., and Korol, D.L. Lactate infusions into hippocampus and striatum enhance memory in young adult and aged rats.
- Korol, D.L., Gold, P.E., and Newman, L.A. Lactate availability across multiple memory systems is associated with the facilitating effects of cognitive priming on response and place learning in young and old rats.

## **Invited Addresses**

### ***Extramural***

- Korol, D.L. and Brunjes, P.C. (1990). Experience and the developing olfactory bulb. Presented at the XIV conference on the Neurobiology of Learning and Memory, Park City, Utah.
- Korol, D.L. (1992). Experience and the Brain: The Neurobiology of Memory Function and Dysfunction. Presented at Mount St. Mary's College, Emmitsburg, MD.
- Korol, D.L. (1995). Effects of gonadal steroid fluctuations on learning in the swim task and on hippocampal primed burst potentiation in female rats. Presented at the XIX conference on the Neurobiology of Learning and Memory, Park City, Utah.
- Korol, D.L. (1995). Glucose and memory function across the life span. Presented at the Symposium on School Breakfast and Learning, Napa, California.
- Korol, D.L. (1995). The Aging Brain: Mechanisms for Changes in Learning and Memory. Presented at Mount St. Mary's College, Emmitsburg, Maryland.
- Korol, D.L. (1997). Glucose effects on cognitive performance in school children, young adults and the elderly. Presented at the Kellogg Asia Pacific Nutrition Advisory Panel (KAPNAP) Symposium, Bangkok, Thailand.
- Korol, D.L. (1997). Enhanced LTD in the aged brain: A model for forgetting. Presented at Mahidol University, Bangkok, Thailand.
- Korol, D.L. (1998). Estrogen and learning strategy in rats. Presented at the XXII conference on the Neurobiology of Learning and Memory, Park City, Utah.
- Korol, D.L. (1998). Glucose effects on cognition in young and elderly humans: A question of task difficulty. Presented at the 7<sup>th</sup> Annual meeting for the International Behavioral Neuroscience Society, Richmond, VA.
- Korol, D.L. (1999). Memory, aging and estrogen: Shifts in neural processing. Presented March 5, 1999 at Psychology Department colloquium series, Binghamton University, Binghamton, NY.
- Korol, D.L. (2000). Memory, estrogen and aging: Shifts in neural processing. Presented April 6, 2000 at the Research Seminar in Biopsychology series, University of Connecticut, Storrs, CT.
- Korol, D.L. (2001). Estrogen-dependent shifts in learning strategy depend on length of hormone deprivation. Presented at the XXV conference on the Neurobiology of Learning and Memory, Park City, Utah.
- Korol, D.L. (2001). Enhancing cognitive functions across the life span. Presented at the 9<sup>th</sup> Congress of the International Association of Behavioral Gerontology, Vancouver, British Columbia, June 27-30, 2001.
- Korol, D.L. (2003). Sweet Memories: Glucose consumption and cognition in humans. Session: Nutrients, Neurotransmitters, and Mental Performance, Martine Orosco, Organizer. European Winter Conference on Brain Research, March, 2003, Les Arcs, France. UNABLE TO ATTEND.

- Korol, D.L. (2003). Estrogen shifts learning strategy through actions on specific neural systems. Presented at the XXVII Winter Conference on the Neurobiology of Learning and Memory, Park City, Utah, January, 2003.
- Korol, D.L. (2003). Learning and Memory: What's hormones got to do with it? Presentation at the Learning Brain Expo, conference for educators, July 17-19, 2003, Chicago, IL.
- Korol, D.L. (2003). State of the brain in 2003: A synthesis. Presentation and workshop at the Learning Brain Expo, conference for educators, July 17-19, 2003, Chicago, IL.
- Korol, D.L. (2003). Aging brain and its functional implications. Presentation at Continuing Education colloquia: Geriatrics for Non-physicians, University of Illinois, Department of Family Medicine, September 26, Kankakee, IL.
- Korol, D.L. (2003). Ovarian steroids orchestrate learning strategy through modulation of memory systems. Satellite symposium titled, *Independence and Interaction among Multiple Memory Systems*, Society for Neuroscience 33<sup>rd</sup> Annual Meeting, November 7, 2003, New Orleans, LA.
- Korol, D.L. (2004). Independent actions of estrogen on memory systems. Presented at the XXVIII conference on the Neurobiology of Learning and Memory, Park City, Utah, January, 8-11, 2004.
- Korol, D.L. (2004). Making sense out of mixed results: Estradiol enhances and impairs cognitive function depending upon the neural system tapped by the task. Presented at Behavioral Neuroscience weekly seminar series, Department of Psychology, Arizona State University, February 25, 2004.
- Korol, D.L. (2005). Making sense out of mixed results: Deciphering the cognitive effects of estradiol through a memory systems approach. Presented at the Department of Zoology seminar series, Miami University, Oxford, OH, March 3, 2005.
- Korol, D.L. (2005). Estrogen and memory: A neural systems approach. Presented at the Program in Neuroscience seminar series, Marquette University, December 12, 2005.
- Korol, D.L. (2006). Estrogen modulates learning and memory through estrogen receptors in hippocampus and dorsal striatum. Presented at the XXX anniversary conference on the Neurobiology of Learning and Memory, Park City, Utah, January 5-8, 2006.
- Korol, D.L. (2006). Deciphering the cognitive effects of estradiol through a memory systems approach. Presented in the session, Estrogen effects on the hippocampus across the life span, Winter Conference on Neural Plasticity, Barbados, February 19-25, 2006.
- Korol, D.L. (2007). Effects of ovarian steroids on learning and memory: Deciphering mixed results. Presented at the University of Massachusetts-Amherst Neuroscience and Behavior colloquium series, April 11, 2007.
- Korol, D.L. (2007). Viewing the cognitive effects of estradiol through a memory systems lens. Presented at the Neuroscience Program Colloquium Series, Tulane University, New Orleans, LA, September 28, 2007.
- Korol, D.L. (2008). Estradiol and exercise interact to modulate BDNF. Data blitz presented at the XXXII conference on the Neurobiology of Learning and Memory, Park City, Utah, January 3-6, 2008.



- Korol, D.L. (2008). Colloquium: Viewing the cognitive effects of estradiol through a memory systems lens. Seminar: Jog your memory, stretch your brain: Aging, exercise, and estradiol effects on learning and memory. Presented at the Center for Studies in Behavioral Neurobiology, Concordia University, Montreal, Canada, April 4-5, 2008.
- Korol, D.L. and Scavuzzo, C. (2009). Effects of exercise on response learning and brain BDNF levels. Data blitz presented at the XXXIII conference on the Neurobiology of Learning and Memory, Park City, Utah, January 3-6.
- Korol, D.L. (2009). Spinning science into sound-bites: Exercise and learning and memory – what do hormones got to do with it? Two presentations to discuss brain function for scientists and science writers. Science writers' workshop, Wesleyan University, Middletown, Connecticut, November 17.
- Korol, D.L. (2010). Viewing the cognitive effects of estrogens through a memory systems lens. In the symposium: Sugar, Sex, and Stress: Hormone Modulation of Memory Processes. American Psychological Association annual meeting, August 12, 2010 San Diego, CA.
- Korol, D.L. (2011). Women are from Venus except when they are from Mars: Effects of estrogens on brain function. University of Wisconsin Neuroscience Program seminar series, April 21.
- Korol, D.L. (2011). Jog your memory, stretch your brain. Keynote speaker, University of Wisconsin undergraduate neuroscience annual Neuro Night, April 21.
- Korol, D.L. (2011). Women are from Venus except when they are from Mars: Effects of estrogens on brain function. Syracuse University, Departments of Biology and Psychology, June 3.
- Korol, D.L. (2011). Jog your memory, stretch your brain. 4<sup>th</sup> Annual Christopher Comer Undergraduate Neuroscience Seminar, UIC Laboratory of Integrative Neuroscience, Sept 28.
- Korol, D.L. (2011). Metamodulation: Neural mechanisms of learning, memory, and plasticity. Syracuse University, Biology Department, Oct. 31.
- Korol, D.L. (2012). Jog your memory: How physical and mental activity modulate subsequent cognition. SIU chapter of SfN, Southern Illinois University, Feb.13, 2012.
- Korol, D.L. (2012). Jog Your (multiple) Memory (systems). Satellite Symposium at Society for Neuroscience: Independence and Interaction of Multiple Memory Systems, October 12, 2012.
- Korol, D.L. (2012). Jog Your Memory: Implications for Parkinson's Disease. Neuroscience Program Seminar, Upstate Medical University, November 13, 2012.
- Korol, D.L. (2013). Jog Your Memory: Metamodulation through physical and mental activity, Binghamton University, Departments of Biology and Psychology, May 30, 2013.
- Korol, D.L. (2014). Use it and Boost it with Cognitive and Physical activity. Presented at Hamilton College, April 10, 2014.
- Korol, D.L. (2015). Use it and Boost it with Mental and Physical Activity: A role for BDNF. Presented at University of Pittsburgh Medical Center, Basic Biology of Aging work group, March 9, 2015.

Korol, D.L. (2015). Jog your memory with physical and mental activity. University of Connecticut, Department of Psychology seminar series, October 7, 2015.

Korol, D.L. (2015). Aging and Saging. St. Camillus Brain Health Workshop, November 4, 2015.

Korol, D.L. (2016). Aging and Saging. Manlius Senior Center, Fall speaker series, presented, October 5, 2016. *Talk available at:* <https://www.youtube.com/watch?v=gjBelaiop0Q&t=44s>

Korol, D.L. (2017). Fit to learn anything: modulation of brain function across multiple memory systems. Middlebury College, Department of Biology Seminar, to be presented April 7, 2017.

Korol, D.L. (2017). Estrogens and learning: Friends or foes? American University Symposium on *Sex differences: From Neuroscience to the Clinic and Beyond*, April 20-21, 2017.

### ***Intramural***

Korol, D.L. (2000). Shifts in neural plasticity as a model for age-related changes in forgetting. Presented September 26, 2000 at the Neuroscience Program Seminar series, University of Illinois, Urbana-Champaign.

Korol, D.L. (2000). Ovarian control of the mind: Steroidal selector of learning strategy. Presented at the Developmental division Brown Bag seminar series, Department of Psychology, University of Illinois, Urbana-Champaign, October 13, 2000.

Korol, D.L. (2002). Strategy shifts with estrogen. Presented at the University of Illinois Medical Scholars program Bench to Bedside symposium, Menopause: Making choices, January 28, 2002.

Korol, D.L. (2002). Forgetting to Remember: Synaptic Mechanisms of Age-Related Memory Changes. Presented at the University of Illinois, Initiative on Aging, Spring Seminar Series, April 22, 2002.

Korol, D.L. (2002). Estrogen and Memory: Friend or Foe? Presented at VCHP divisional Brown Bag Seminar series, Department of Psychology, UIUC, December 4, 2002.

Korol, D.L. (2003). Ovarian steroids orchestrate learning strategy through modulation of memory systems. Presented at Cognitive Division Brown Bag Seminar Series, Department of Psychology, UIUC, November, 21, 2003.

Korol, D.L. (2004). Making room for memories: A synaptic approach. Presented at Brain and Cognition division weekly Brown Bag series, Department of Psychology, UIUC, February 9, 2004.

Korol, D.L. (2007). Viewing shifts in learning strategy through a neural systems lens: Estradiol, exercise, and elderly rats. To be presented at the Advances in Sensory and Developmental Neuroscience Training Program weekly seminar series, March 9.

Korol, D.L. (2007). Learning and memory: What's hormones got to do with it? Keynote address at the first annual Illinois Summer Neuroscience Institute, May 20, 2007.

Korol, D.L. (2008). Women are from Venus – except when they are from Mars. Keynote dinner address, annual Neuroscience Program open house, February 8, 2008.

- Korol, D.L. (2008). You and Your Brain on Steroids. UIUC NSP sponsored course, Your Brain and You, Osher Life Long Learning Institute, February 11.
- Korol, D.L. (2008). Jog Your Memory, Stretch Your Brain: Building a Model of Menopause. Keynote address at the second annual Illinois Summer Neuroscience Institute, May 18, 2008.
- Korol, D.L. (2008). Women are from Venus – except when they are from Mars: Lessons from rats. Reproductive Biology Seminar series, September 17.
- Korol, D.L. (2008). Women are from Venus – except when they are from Mars: Lessons learned from rats. VCHP brown bag lunch series, Dept of Psychology, September 24.
- Korol, D.L. (2009). Estrogens Dictate Cognitive Strategy: A Tale of Two (Neural) Systems. To be presented at the weekly colloquium series, Molecular and Integrative Physiology, February 26.
- Korol, D.L. (2009). Jog your Memory. Presented at the Advances in Sensory and Developmental Neuroscience Training Program weekly seminar series, April 3.
- Korol, D.L. (2010). Neural mechanisms of learning, memory, and forgetting. Presented at “From models to molecules”, Illinois Summer Neuroscience Institute, May 20, 2010.
- Korol, D.L. (2013). Shifting systems with age: Implications for Parkinson’s disease. Aging Studies Institute, Inclusive Design Challenge. February 1, 2013.
- Korol, D.L. (2013). Research presentation to visiting LSAMP students from University of Texas-Permian Basin, March 13, 2013.
- Korol, D.L. (2013). Research and professional development presentation to summer LSAMP fellows, June 14, 2013.
- Korol, D.L. (2014). Preparing the Perfect Poster Presentation. Presentation to Summer Research UG, Department of Biology.
- Korol, D.L. (2015). Writing the research report: Create your own narrative. Presentation to Spring LSAMP scholars, February 20, 2015.
- Korol, D.L., Pagan, M., and Wilmoth, J.M. (2015). Movement for Healthy Aging – a revolutionary idea. Presentation in ASI brownbag, November 13, 2015.
- Korol, D.L. (2015). Biotechnology and Aging: From simple to sophisticated. Presentation in Aging and Society, Sociology 364/664, M. Silverstein instructor, November 19, 2015.

#### **Presentations at Professional Societies and Conferences**

- Lipton, P. and Korol, D. (1981). Evidence that decreases in intracellular pH rapidly inhibit transmission in the guinea-pig hippocampal slice. *Society for Neuroscience Abstracts* 7:440.
- Korol, D.L. and Steward, O. (1986). An evaluation of whether LTP undergoes time-dependent consolidation. *Society for Neuroscience Abstracts* 12:505.
- Korol, D.L. and Brunjes, P.C. (1987). Unilateral odor deprivation: Rapid effects on glucose metabolism. *International Society for Developmental Psychobiology*, New Orleans, LA.

- Korol, D.L. and Brunjes, P.C. (1988). Unilateral odor deprivation: Rapid effects on cellular regulatory events. Paper presented at *Association for Chemoreception Sciences*, 10th Annual Meeting, Sarasota, Florida.
- Korol, D.L. and Brunjes, P.C. (1988). Unilateral odor deprivation: Rapid effects on protein synthesis. *Society for Neuroscience Abstracts* 14:423.
- Korol, D.L. and Brunjes, P.C. (1989). Angiogenesis in the olfactory bulbs of normal and unilaterally odor deprived rats. *Association for Chemoreception Sciences*, 11th Annual Meeting, Sarasota, Florida.
- Brunjes, P.C., Korol, D.L. and Stern, K.G. (1989). Prenatal neurogenesis in the telencephalon of the precocial mouse *Acomys cahirinus*. *Society for Neuroscience Abstracts* 15:589.
- Korol, D.L. and Brunjes, P.C. (1989). Angiogenesis in normal and deprived olfactory bulbs. *Society for Neuroscience Abstracts* 15:589.
- Korol, D.L., Rao, A., Steward, O. and Brunjes, P.C. (1990). Unilateral naris closure and protein synthesis in olfactory bulbs. *Society for Neuroscience Abstracts* 16:830.
- Stewart, J.S., Korol, D.L. and Brunjes, P.C. (1990). Unilateral naris closure and protein synthesis in olfactory mucosa. *Society for Neuroscience Abstracts* 16:830.
- Korol, D.L., Leonard, B.W., McNaughton, B.L. and Barnes, C.A. (1991). Effects of dorsal neocortical stimulation on perforant path evoked field potentials in the dentate gyrus of the rat. *Society for Neuroscience Abstracts* 17:1394.
- Korol, D.L., Abel, T.W., Church, L.T., Barnes, C.A. and McNaughton, B.L. (1992). Does saturation of long-term enhancement of perforant path synapses impair spatial learning in the Morris water task? A failure to replicate. *Society for Neuroscience Abstracts*, 18:1217.
- Erickson, C.A., Korol, D.L., Barnes, C.A. and McNaughton, B.L. (1992). Exploration-induced changes in synaptic strength in hippocampus can predict spatial memory in the Morris water task. *Society for Neuroscience Abstracts*, 18:1217.
- Korol, D.L., Jung, M.W., Barnes, C.A. and McNaughton, B.L. (1993). How widespread is LTE "saturation" at perforant path-granule cell synapses? *Society for Neuroscience Abstracts*, 19:794.
- Stevenson, G.D., Korol, D.L., Galganski, M., Abel, T., McNaughton, B.L. and Barnes, C.A. (1993). "Saturation" of perforant path granule cell LTE/LTP does disrupt some spatial tasks. *Society for Neuroscience Abstracts*, 19:794.
- Korol, D.L., Unick, K., Goosens, K., Crane, C., Gold, P.E. and Foster, T.C. (1994). Estrogen effects on spatial performance and hippocampal physiology in female rats. *Society for Neuroscience Abstracts*, 20:1436.
- Korol, D.L., Lexcen, F.J., Parent, M., Ragozzino, M.E., Manning, C.A. and Gold, P.E. (1995). Effects of glucose on cognitive performance in college students. *Society for Neuroscience Abstracts*, 21:2085.

- Wilkniss, S.M., Manning, C.A., Jones, M.G. and Korol, D.L. (1996). Aging effects on contextual spatial memory. Presented at the 24th Annual meeting for the International Neuropsychological Society, Chicago, IL.
- Korol, D.L., Couper, J.M., McIntyre, C.K. and Gold, P.E. (1996). Learning strategies across the estrous cycle in female rats. *Society for Neuroscience Abstracts*, 22:1386.
- Lichtenvoort, J.M., Korol, D.L., and Gold, P.E. (1997). Peripherally injected epinephrine retards LTP decay in freely moving rats. *Society for Neuroscience Abstracts*, 23:224.
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- Korol, D.L. and Gold, P.E. (2014). To eat, to drink, perchance to think: Bioenergetics of hippocampus and striatum dissociate by cognitive strategy and reward type. Presented at the 11<sup>th</sup> International Conference on Brain Energy Metabolism, *How energy metabolism shapes brain function*. Copenhagen, Denmark. May 11-14, 2014.
- Gold, P.E. and Korol, D.L. (2014). Use it and boost it: Learning induces long-term adaptations in brain glycogen and lactate concentrations. Presented at the 11<sup>th</sup> International Conference on

Brain Energy Metabolism, *How energy metabolism shapes brain function*". Copenhagen, Denmark. May 11-14, 2014.

- Dash, M.B., Ajayi, S. Folsom, L., Gold, P.E., and Korol, D.L. (2014). Hippocampal evoked response variability associated with spontaneous infraslow fluctuations in EEG activity. 44<sup>th</sup> Annual meeting for the Society for Neuroscience, *Society for Neuroscience Abstracts* 40, 303.18.
- Pisani, S.L. and Korol, D.L. (2014). The ER $\alpha$  agonist PPT enhances place learning but impairs response learning in ovariectomized young adult rats: Viewing the role of ERK activation through a multiple memory systems lens. 44<sup>th</sup> Annual meeting for the Society for Neuroscience, *Society for Neuroscience Abstracts* 40, 451.07.
- Wang, W., Yuhan, B., Korol, D.L., and Gold, P.E. Bioenergetics and memory: Regulation by estradiol. Society for Neuroscience, 44<sup>th</sup> Annual Meeting, *Society for Neuroscience Abstracts* 40, 451.09.
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- Tunur, T., Castelan, L., Hawley, W.R., Gold, P.E., and Korol, D.L. (2014). A tale of two memory systems: Differential involvement in two pattern separation tasks. 44<sup>th</sup> Annual meeting for the Society for Neuroscience, *Society for Neuroscience Abstracts* 40, 749.05.
- Castro, S.L., Jaumotte, J.D., Smeyne, R.J., Korol, D.L., Ambrosio, F., DeVallejo, A.N., Cameron, J.L., Newman, L.A., Cole, K., Barry, K., and Zigmond, M.J. (2015). Does housing in an enriched environment promote healthy aging detectable by peripheral biomarkers? Studies in older laboratory animals. 9<sup>th</sup> Annual Aging Institute Research Day, University of Pittsburgh Medical Center, March 30, 2015.
- Wang, W., Gold, P.E., and Korol, D.L. (2015). Estradiol increases extracellular glucose concentration in hippocampus of young adult female rats. 19<sup>th</sup> Annual meeting of the Society for Behavioral Neuroendocrinology, Pacific Grove, CA 2015.
- Newman, L.A., Gardner, R.S., Hamling, B.V., Korol, D.L., and Gold, P.E. (2015). Aging in rats leads to task-dependent impairments and improvements in learning that are accompanied by changes in markers of brain energetics. 45<sup>th</sup> Annual meeting for the Society for Neuroscience, *Society for Neuroscience Abstracts* 41, 179.21.
- Zigmond, M.J., Ambrosio, R., Castro, S.L., Jaumotte, J.D., Korol, D.L., Newman, L.A., Sanders, L.H., Smeyne, R.J., and Vallejo, A.D. (2015). An enriched environment modulates factors associated with healthy brain aging in rats. 45<sup>th</sup> Annual meeting for the Society for Neuroscience, *Society for Neuroscience Abstracts* 41, 205.26.

- Wang, W., Gold, P.E., and Korol, D.L. (2015). Estradiol increases extracellular glucose concentration in the hippocampus of young adult female rats. 45<sup>th</sup> Annual meeting for the Society for Neuroscience, *Society for Neuroscience Abstracts* 41, 614.03.
- Kundu, P., Tunur, T., Korol, D., Bandara, S., Monaikul, S., Helferich, W.G., and Schantz, S. (2015). The effects of the botanical estrogen isoliquiritigenin on cognition in young adult female rats. 45<sup>th</sup> Annual meeting for the Society for Neuroscience, *Society for Neuroscience Abstracts* 41, 614.05.
- Kundu, P., T. Tunur, D. Korol, S. Bandara, S. Monaikul, W.G Helferich, S. Schantz (2015). The effects of Licorice Root Components on Cognition. Presented at Journey Through Science Day, New York Academy of Sciences. Dec 14. New York city, New York.
- Kundu, P., T. Tunur, D. Korol, S. Bandara, S. Monaikul, W.G Helferich, S. Schantz (2016). The effects of estrogenic components of licorice root on cognition. Presented at the International Conference on the Science of Botanicals 2016. April 11-14th. Oxford, Mississippi.
- Ondera, C.E., P. Kundu, W.G Helferich, D. Korol, I. Khan, S. Schantz (2016). Licorice root: a phytoestrogen supplement with neuroprotective effects on cognition. Presented at the Merial Veterinary Scholars Symposium, Ohio State University College of Veterinary Medicine.
- Kundu, P., Tunur, T., Korol, D., Bandara, S., Monaikul, S., Helferich, W.G., and Schantz, S. (2016). The effects of estrogenic components of licorice root on cognition. Meeting of 16<sup>th</sup> annual International Conference on Botanicals (ICSB) and 5<sup>th</sup> Interim American Society of Pharmacognosy (ASP). *Planta Medica*, 82, PC40 DOI:10.1055/s-0036-1578742.
- Wang, W., D'Amico, E.C., and Korol, D.L. (2016). Estradiol regulates bioenergetics in hippocampus and striatum of young adult female rats. 46<sup>th</sup> Annual meeting for the Society for Neuroscience, *Society for Neuroscience Abstracts* 42, 179.02
- Kundu, P, Korol, D.L., Bandara, S., Monaikul, S., Helferish, W.G., and Schantz, S. L. (2016). The effects of estrogenic components of licorice root on cognition. 46<sup>th</sup> Annual meeting for the Society for Neuroscience, *Society for Neuroscience Abstracts* 42, 174.01
- Hamling, B., Newman, L. A., Korol, D.L., and Gold, P.E. (2016). Age-related impariments in memory in rats are accompanied by decreased lactate production by astrocytes in the hippocampus and are rescued by intrahippocampal lactate infusions. 46<sup>th</sup> Annual meeting for the Society for Neuroscience, *Society for Neuroscience Abstracts* 42, 182.19.
- Gardner, R.S., Newman, L.A., Gold, P.E, and Korol, D.L. (2016). A multiple memory systems approach to age-related changes in cognition: Differential modulation of BDNF in hippocampus and striatum in rats. 46<sup>th</sup> Annual meeting for the Society for Neuroscience, *Society for Neuroscience Abstracts* 42, 182.22
- Receno, C.N., Liang, C., Korol, D.L., and DeRuisseau, K.C. (2017). Curcumin supplementation effects on aging skeletal muscle. Experimental Biology Annual Meeting, Chicago, IL, submitted.
- Mercado, N.M., Korol, D.L., Gardner, R.S., Sortwell, C.E., Collier, T. J., Steece-Collier, K. Does dysfunctional BDNF limit remodeling of the aged Parkinsonian striatum? Submitted to American Society for Neural Therapy and Repair, 2017 Annual conference, Clearwater Beach, FL.

## Science Education and Outreach Presentations

Whalen, C. J., Nelson, M. E., Korol, D. L., and Beshers, S. N. (2006). Brain Awareness Day at the University of Illinois Urbana-Champaign: Promoting neuroscience in the community. 36<sup>th</sup> Annual meeting for the Society for Neuroscience, *Society for Neuroscience Abstracts*, 32, 23.13.

Shah, S.M., Blattner, M., Beshers, S., Hug, B., and Korol, D.L. (2008). Brain power: Branching out, forming connections, and building networks through community outreach at the University of Illinois. 38<sup>th</sup> Annual meeting for the Society for Neuroscience, *Society for Neuroscience Abstracts*, 34, 227.16.

Brown, J.W., Blattner, M.S., Mitterling, K.L., Morrisette, S., Ogrodnik, J.M., Watson, P.D.K., Zengin Bolatkale, H., Reese, G.C., Korol, D.L., Hug, B. (2011). The cutting edge: integrating contemporary neuroscience and molecular biology to teach about regeneration and the nervous system. 41<sup>st</sup> Annual meeting for the Society for Neuroscience, *Society for Neuroscience Abstracts* 37, 22.06SU.

Blattner, M.S., Allen, J.R., Allen, A., Brown, J., Lauren, H., Mitterling, K.L., Ogrodnik, J. Planey, J., Zengin Bolatkale, H., Korol, D.L., and Hug, B. (2011). From the classroom to the community: taking neuroscience into diverse community settings. 41<sup>st</sup> Annual meeting for the Society for Neuroscience, *Society for Neuroscience Abstracts* 37, 22.10SU.

Mitterling, K.L., Allen, A., Allen, J., Blattner, M.S., Brown, J.W., Lauren, H., Morrisette, S., Ogrodnik, J.M., Planey, J., Wathson, P.D.K., Zangin Bolatkale, H., Korol, D.L., and Hug, B. (2011). Do you see what I see? A novel secondary school curriculum for guiding explorations on the evolution of visual perception. 41<sup>st</sup> Annual meeting for the Society for Neuroscience, *Society for Neuroscience Abstracts* 37, 22.12SU.

Lutz, C.C., Blattner, M., Jasti, C., Lauren, H., Mazur, K., Naeger, N., Planey, J., Prathap, S., Stengele, A., Talbot, K., Wolfe, T., Korol, D.L., and Hug, B. (2012). Changing student minds: neuroscience as a bridge between science and society. 42<sup>nd</sup> Annual meeting for the Society for Neuroscience, *Society for Neuroscience Abstracts*, 28, 27.18SA

Hug, B., Jarosewich, T., and Korol, D. (2012). Educative curriculum materials that allow for learned adaptations: Ensuring quality of implementation. Paper presented at NARST, Indianapolis, IN.

Talbot, K., Jasti, C., Hug, B., & Korol, D. (2013). *Using a Project Based Science Unit, What changes our minds? to Link Next Generation Science Standards, Common Core Standards and Student Engagement*, NSTA Teacher workshop, San Antonio, TX.

Wallon, R., Planey, J., Talbot, K., Jasti, C., Hug, B., & Korol, D. (2013). Using a project-based science unit, *What changes our minds?*, to link Next Generation Science Standards, common core standards and student engagement. Teacher workshop at the NSTA National Conference on Science Education, San Antonio, TX.

Scavuzzo, C.J., Lutz, C., Wallon, R., Patterson, S., Hug, B., & Korol, D. (2014). Using real scientific research to develop students' ability to analyze and interpret data: Making connections to the scientific practices. Workshop at the NSTA National Conference on Science Education, Boston, MA.

## **Trainees** (+ identifies with underrepresented group)

### **Post-doctoral**

#### Current

Lori Newman, Ph.D. (Co-mentor with Paul Gold, Ph.D.). 2009-present.

Robert Gardner, Ph.D. Feb 2015-present. (Co-mentor with Paul Gold, Ph.D.)

#### Former

Kirk Erickson, Ph.D. May 2005-May 2008. Currently Associate Professor, Department of Psychology, University of Pittsburgh, Pittsburgh, PA

Ramkumar Kuruba, Ph.D. November 2009-August 2010. Currently Research Associate, Texas A & M University, Health Science Center, College Station, TX

Steven Neese, Ph.D. (Co-mentor; PI Susan Schantz, Ph.D.) 2007-2013. Currently Assistant Professor at Cornell College, Mount Vernon, Iowa

Wayne Hawley, Ph.D. June 2013-May 2014. Currently Assistant Professor at Edinboro University, Edinboro, PA

Michael Dash, Ph.D. January 2012-August 2014 (Co-mentor with Paul Gold, Ph.D.). Currently Assistant Professor at Middlebury College. Middlebury, VT

Tumay Tunur, Ph.D. Tulane University, July 2011-August 2015. Currently post-doctoral instructor, Exercise Science, Syracuse University. Syracuse, NY

### **Graduate Students**

#### Current

Wei Wang, Department of Biology, Syracuse University, Fall 2013 to present, co-mentor with Paul Gold

Roxanne Crouch, Department of Biology, Syracuse University, Fall 2015-present.

+Stephen Ajayi, Department of Biology, Syracuse University, MS program, Fall 2016-present

#### Former

Molly McElroy, Ph.D., Neuroscience Graduate Program, University of Illinois: September, 2000 to March, 2007. Dissertation title: *Ovarian Hormone Modulation of Learning Strategy Preferences: A Role for Hippocampal Disinhibition*. Currently science writer, Press Office at University of Washington, Seattle, WA.

+Cynthia Colon-Rivera, Neuroscience Graduate Program, University of Illinois, Minority Fellow: 2004-2006 (co-mentor); Currently traveling RN in US.

Timothy Zorn, MS. Neuroscience Graduate Program, University of Illinois: 2001 to 2004, Master's in Biology, August, 2004; Currently high school biology teacher, Champaign, IL.

Lilia Zurkovsky, Ph.D., Neuroscience Graduate Program, University of Illinois: August, 2001 to April, 2008. Dissertation title: *Estradiol has distinct effects on the hippocampal and striatal memory systems*. Currently Medical Science Liaison, Teva Pharmaceuticals. Indianapolis, IN.

Claire Scavuzzo, Ph.D., Neuroscience Graduate Program, University of Illinois: August, 2009 to June 2014, co-mentor. Dissertation title: *Use it and Boost it with Physical and Cognitive Activity*. Currently post-doctoral researcher (PI Clayton Dickson) and lecturer at University of Alberta.

Samantha Pisani, Ph.D., Medical Scholars Program, Neuroscience Program, University of Illinois: August, 2008 to September, 2014. Dissertation title: *Estrogenic modulation of place and response learning via specific receptor-mediated mechanisms*. Currently M4 student, Medical Scholars Program, UIUC.

Katherine Mitterling, MS. Department of Biology, Syracuse University: August 2008 to August, 2015. Currently Research Technician, University of Rochester, Rochester, NY.

### Rotation and Visiting Students

Johannes Bohacek, visiting student from University of New Orleans, Neuroscience Graduate Program, September 2005-December, 2005  
+Luis Aguerrevere, visiting student from University of New Orleans, Neuroscience Graduate Program, September 2005-December, 2005  
Jennifer Kim, Neuroscience Graduate Program, University of Illinois; completed rotation May 2003 to September 2003  
+Maritza Alvarado, Medical Scholars Program, Neuroscience Graduate Program, University of Illinois, completed rotation January, 2003 to October, 2003  
Robert Hoffman, medical student, UIUC College of Medicine, summer research assistant, 2007  
Steven Beckoff, medical student, UIUC College of Medicine, summer research assistant, 2010  
+Franklyn Rocha Cabrero, Medical Scholars Program, Neuroscience Graduate Program, University of Illinois, completed rotation January 2011 to January 2012  
Livia Andrzejczuk, Department of Biology, Syracuse University, March – July, 2013  
+Nycole Maza, Neuroscience, Upstate University, March – June, 2013  
Megan Gribble, Neuroscience, Upstate University, March – June, 2013  
+Deion Burks, Department of Biology, Syracuse University, October – January, 2013  
Spandita Dutta, Department of Biology, Syracuse University, Spring, 2014  
Jeremy Sloane, Department of Biology, Syracuse University, Spring, 2014  
Geoffrey Eill, Neuroscience, Upstate University, Spring-Summer, 2014  
William Haws, Department of Biology, Syracuse University, Fall, 2014  
Rachel Sager, Neuroscience, Upstate University, Fall, 2014

### ***Undergraduate Honors and Distinction Students***

#### University of Virginia

+Ki Goosens, PhD: Howard Hughes Fellow, Department of Biology (1995), University of Virginia  
Katherine Ragozzino, MS, Distinguished Majors Thesis (1995), Department of Psychology, University of Virginia; Recipient of the Frank Finger Award for Excellence in Research  
Lacy Kolo, PhD, JD: Distinguished Majors Thesis (1998), Interdisciplinary Studies in Neuroscience, University of Virginia  
Lisa Marriott, PhD: Distinguished Majors Thesis (1999), Interdisciplinary Studies, University of Virginia

#### Washington and Lee University

John Boothby, Senior Thesis (1999), Department of Psychology

#### University of Illinois

Diana Thomas (2000-2002), Distinguished major, Honors program, Department of Biology  
Kelly Gallagher (2001-2002), Distinguished major, Department of Biology and Psychology  
Stephanie Brown (May 2002-Aug 2004), Department of Psychology Honors Program  
+Lindsay Wieczorek (summer 2002, 2003), UIUC Howard Hughes Fellow, Recipient of Ernest Lindholm Outstanding Undergraduate Student in Behavioral Neuroscience Award, Department of Biology, Honors program, Arizona State University  
Trisha Pruis (2002-2005), Distinguished major, Department of Biology and Psychology Honors Program  
Laura Pignotti (2003-2004), Distinguished major, Department of Biology  
Jenny Fell (May 2004-2006), Department of Psychology Honors Program  
Sarah Debrey (2004-2005), IPS-Neuroscience, Department of Psychology Distinguished thesis  
Steve Serio (2004-2007), Department of Psychology, Honors Program  
Yelena Grinberg (2005-2008), Molecular and Cell Biology and Psychology  
Deanne Fornelli (2005-2006), Department of Psychology, Distinguished Major  
Dawn Epstein (2006-2007), Department of Psychology, Distinguished honors thesis

Lauren (Thurlwell) Decker (2006-2008), Distinguished major, Molecular and Cell Biology, Psychology, Chemistry  
Claire Scavuzzo (2006-2008), Molecular and Cell Biology, Psychology Distinguished Major  
Sarah Stone (2007-2009), Molecular and Cell Biology, Distinguished Honors thesis  
Stephany Park (Fall 2009-Spring 2011). Molecular and Cellular Biology  
Jessie Zhang (summer 2009-Spring 2011). Molecular and Cellular Biology  
Katherine Anderson (Fall 2010-Spring 2012). Psychology Honors Program  
Carolyn Draus (Fall 2011-Spring 2013). Biochemistry

#### Syracuse University

Georgia Bascaglia (Fall 2012-May 2014), ILM Neuroscience, Biology, Renee Crown Honors, WiSE Honors  
+Luis Castelan (Fall 2012-present), Distinction in Biology, Philosophy, LSAMP scholar, Renee Crown Honors  
Sam Lauffer (Fall 2012-present). Distinction in Biology, Renee Crown Honors  
Brooke Hamling (Fall 2012-present). Renee Crown Honors, Distinction in Biology  
Margaret Blasi (Fall 2013-present). Distinction in Biology  
Ella D'Amico (Fall 2013-present), Biology, Coronat Scholar, Renee Crown Honors, Distinction in Biology  
Luke Loftus (Summer 2014-present). Biochemistry/Neuroscience ILM, Renee Crown Honors  
+Amber Barrow (Fall 2014-present), Biology/Neuroscience ILM and Chinese studies; LSAMP scholar, Renee Crown Honors, Remembrance Scholar  
Elizabeth Reynolds (Fall 2014-present), Biology/Neuroscience ILM, Renee Crown Honors  
Caitlin White (Spring 2015-present), Biology, Renee Crown Honors  
+Giovanni Pacheco (Fall 2015-present), Biology/Biotech/Neuroscience ILM, LSAMP Scholar  
+Chizobam Nwagwu (Fall 2015-present), Biology, Renee Crown Honors  
+Jonathan Cotto (Fall 2015-present), Biology, Distinction program  
John Freda (Fall 2016-present), Biology/Biotechnology, Renee Crown Honors

#### ***Undergraduate Research Assistants***

##### University of Virginia

Paul Grinwald: Department of Psychology (1994), University of Virginia  
Rachel Smith (Busby), Cognitive Studies (1997), University of Virginia  
Whitney Wallace, Department of Psychology (1998), University of Virginia

##### Washington and Lee University

Emily Malin, PhD (1999), Department of Psychology; Recipient of the first annual Oliver Award for Intellectual Curiosity in Psychology, 1999  
Kristine Borden (1999), Department of Psychology  
+Dawn Coulthurst (1999), Department of Biology

##### Binghamton University

Jodi-Ann Gravina (2000), Department of Psychology  
Carrie Joseph (2000), Department of Psychology

##### University of Illinois

Meghann Hennelly (2001-2002), Department of Psychology and Biology  
Krista Anderson (2001-2003), Department of Psychology, James Scholar  
Ila Englof (2002), Department of Biology  
Niamh Condon (May 2002-May 2004), Department of Psychology  
Sara Boyd (summer 2002), Department of Psychology  
Kathy Hagman (2002-2003), Department of Psychology



Bengi Altinbilek (2003), exchange student from Bogazici University, Istanbul, Turkey  
 Diana Greyz (2003), Department of Psychology  
 Christopher Hanson (2003-2004), Departments of Biochemistry and Psychology  
 Michael Boyd (2003-2004), Department of Psychology  
 John Kenny (2003-2004), Departments of Psychology and AeroEngineering  
 Abigail Galle (2003-2004), Department of Psychology  
 Bobby Oestreicher (Jan 2004-Jan 2005), Department of Psychology  
 Astha Agarwal (2004-2005), Department of Psychology  
 Soumya Venkiteswaran (2004-2005), Department of Psychology  
 Adrien Harney (2004-2006), Department of Psychology  
 Arpit Agarwal (2005) undeclared major  
 Michael Moenk (2005), Department of Psychology  
 Bryan Kolberg (2005-2006), Department of Psychology  
 \*Tobi Adelaja (2006), UIUC Howard Hughes Fellow, Integrative Biology  
 Blake Spindler (2006-2007), Molecular and Cell Biology  
 \*Zuha Warraich (2006-2007), Molecular and Cell Biology  
 Shruti Gupta (2006-2007), Psychology and Spanish  
 \*Edward Malkowski (2006-2007), Psychology  
 Sarah Dalton (2007-2008), Psychology  
 \*Lauren Lilly (summer 2007), SROP fellow, Reproductive Biology Training Program  
 Elizabeth Katta (2007-2009), Molecular and Cellular Biology  
 \*Raquel Collier (2008-2009), Molecular and Cellular Biology  
 Robin Smith (2008-2009), Molecular and Cellular Biology  
 Gianna Gross (summer 2008). Political Science (University of Wisconsin-Madison)  
 Ashley Ginsberg (2008-2010). Psychology  
 Jeremy Schlake (2008-2010). Molecular and Cellular Biology, and Psychology  
 Leigh Komperda (2009-Spring 2010). Molecular and Cellular Biology  
 Hilarie Carhill (2009-Spring 2010). Psychology  
 Charles O'Connor (Fall 2009-Spring 2010). Molecular and Cellular Biology  
 Colin Therriault (summer 2009-Spring 2011). Molecular and Cellular Biology  
 Martina Gabra (Spring 2010-Summer 2010). Molecular and Cellular Biology  
 Jack Huffman (Summer 2010-Fall 2011). Psychology  
 Daniel Wickland (Fall 2010-Spring 2011). Independent Program of Study, Neuroscience  
 Vivian Jung (Fall 2010-Spring 2012). Molecular and Cellular Biology  
 Timothy Weng (Spring 2011). Psychology  
 Stephen Burbick (Fall 2011). Molecular and Cellular Biology  
 Ishwer Patel (Fall 2011-2012). Molecular and Cellular Biology  
 Liridon Zendeli (Fall 2011-2012). Molecular and Cellular Biology  
 Erin Gunderson (Fall 2011-2012). Molecular and Cellular Biology  
 Parth Patel (Spring 2012). Molecular and Cellular Biology  
 Anna Jones (Spring 2012). Molecular and Cellular Biology  
 David Lee (Spring 2012). Molecular and Cellular Biology  
 Andrew Sheriff (Spring 2012). Psychology and Molecular and Cellular Biology

#### Syracuse University

Frances Batarse (Fall 2012-Spring 2013). Psychology, ILM Neuroscience  
 Madison Davis (Fall 2012-Spring 2014). Biology, Anthropology minor  
 Sydney Zaggar (Fall 2012-Spring 2014). Biology, ILM Neuroscience  
 Dean Phillips (Fall 2012-Fall 2013). Biology  
 Lynde Folsom (Fall 2012-Spring 2014). Philosophy and Biology  
 Brian Yuhan (Fall 2012-Spring 2014). Biology  
 Dan Guerra (Fall 2012-Spring 2013). Biology

Amanda Audesse (Spring 2013-Spring 2014). Psychology, ILM Neuroscience  
 +Alejandro Mercato Capote (Spring 2013). Psychology, ILM Neuroscience  
 +Rosa Leon (Spring 2013). Biology  
 +Stephen Ajayi (Spring 2013-Spring 2015). Biochemistry  
 Katelyn Edell (Fall 2012-Spring 2014). Linguistics, ILM Neuroscience  
 Umar Mahmood (Spring 2014-Spring 2015), Biochemistry  
 Bilal Milak (Spring 2014-Fall 2015), Biology  
 Shirley Gao (Spring 2014-Spring 2016), Biology  
 Nicholas Frangella (Spring 2014-Spring 2016), Biology  
 Ashley Sterpka (Summer 2014-Summer 2015), Biology  
 Kathryn Lanza (Summer 2014-Spring 2015), Psychology, ILM Neuroscience,  
 +Raychel Lewis (Fall 2014-Spring 2016), Biology  
 Erin Dickey (Fall 2014-Spring 2016), Biochemistry  
 Ian Liebling (Summer 2015-present), Biology, ILM Neuroscience  
 +Stephanie Morales (Fall 2015), Biology  
 +Kennedy Ukelegharanya (Fall 2015-present), Biology  
 Riley Williams (Fall 2016-present), Biology  
 Angelique Ruggiero (Fall 2016-present), ILM Neuroscience, Psychology  
 +Naara Ramirez-Estevez (Fall 2016-present), Biology  
 Jillian Gavin (Fall 2016-present), Biology  
 +Christina Ly (Fall 2016-present), Biology  
 Marc Kurek (Fall 2016-present), Biology

### ***High School Students***

Sarah Pfander (Summer 2004; 2005), University High Laboratory School, Urbana, IL  
 Arielle Gross (summer 2006, 2007), Central High School, Champaign, IL  
 Emily Rosengren (summer 2007, 2008), University High Laboratory School, Urbana, IL  
 Emma Anselin (summer 2007), University High Laboratory School, Urbana, IL  
 +Claire Williams (2008-2010), Urbana High School, Urbana, IL  
 Jasper Maniates-Selvin (summer 2009- 2010), University High Laboratory School, Urbana, IL  
 John Vaughn (Fall 2009-Dec 2010), University High Laboratory School, Urbana, IL  
 Fiona Weingartner (Summer 2010-Spring 2011), University High Laboratory School, Urbana, IL  
 Sydney Muchnik, (Summer 2010-present), University High Laboratory School, Urbana, IL  
 Heather Lin (Summer 2010-present), University High Laboratory School, Urbana, IL  
 +Kenneth Ballom (Summer 2010), Centennial High School, Champaign, IL.  
 Marie Lilly (Summer 2011), University High Laboratory School, Urbana, IL.  
 Hoda Sayegh (Summer 2011), University High Laboratory School, Urbana, IL.  
 Joseph Song (Summer 2011), University High Laboratory School, Urbana, IL.  
 +Tahar Bowen-Pinto (Summer 2011), University High Laboratory School, Urbana, IL.  
 Sunjay Koshy (Summer 2011), University High Laboratory School, Urbana, IL.  
 Shruti Vaidya (Summer 2012), University High Laboratory School, Urbana, IL  
 Sarah Vaughn (Summer 2012), University High Laboratory School, Urbana, IL  
 Vickie Chang (Summer 2012). University High Laboratory School, Urbana, IL  
 Dan Frank (Summer 2015, 2016). Jamesville-Dewitt High School, Dewitt, NY  
 Fares Awa (Spring 2016-present). Manlius Pebble Hill High School, Jamesville, NY  
 Abel Ratanaphan (Summer 2016). Jamesville-Dewitt High School, Dewitt, NY  
 Dhruv Thota (Summer 2016). Jamesville-Dewitt High School, Dewitt, NY  
 Rachel Elman (Summer 2016-present). Manlius Pebble Hill High School, Jamesville, NY

## ***Awards and Honors Won by Trainees***

### Graduate Students

Molly McElroy:

AAAS Mass Media Science and Engineering Fellows program, 2006

Lilia Zurkovsky:

Society for Neuroscience travel award, 2006

UIUC Initiative on Aging conference travel award for graduate students, 2005

NICHD Developmental Psychobiology & Neurobiology Training Grant (HD 00733) Predoctoral award, 2004-2006

Claire Scavuzzo:

Society for Behavioral Neuroendocrinology travel award, 2010.

Samantha Pisani:

UIUC College of Medicine Buetow Memorial Travel award, 2010, 2013

UIUC College of Medicine Hazel I. Craig Summer Research Assistanceship, University of Illinois College of Medicine, 2011.

NIH Office of Dietary Supplements Research Practicum and Travel Stipend, June 2012

UIUC Graduate College Travel award, 2012

Wei Wang:

Selection for WiSE Future Professional Program (FPP), September 2016 – August 2018

Travel awards 2016: Neuroscience program, Graduate Student Association, Biology Dept

### Undergraduates

Emily Malin: First annual Oliver Award for Intellectual Curiosity in Psychology, Washington and Lee University, 1999.

Claire Scavuzzo: Honorable mention (tied for 4<sup>th</sup> place) for undergraduate poster competition, Chicago chapter, Society for Neuroscience, 2008

Trisha Pruis: University of Illinois, undergraduate travel award, 2004

+Luis Castelan: Ruth Meyer summer research fellowship, 2013 (declined); Louis Stokes Alliance for Minority Participation fellowship, summer 2013; SU College of Arts and Science Honors Travel award; SU Department of Biology Senior Award for Research, May 2015;

+Stephen Ajayi: Ruth Meyer summer research fellowship, 2013; Department of Biology Research Achievement Award, May 2015

Amanda Audesse: Ruth Meyer summer research fellowship, 2013

Brian Yuhan: Ruth Meyer summer research fellowship, 2013; Research Achievement Award, May 2014

Georgia Buscaglia: Ruth Meyer summer research fellowship, 2013

Lynde Folsom: Ruth Meyer summer research fellowship, 2013

Brian Yuhan: Department of Biology Academic and Research Achievement Award, May, 2014.

Margaret Blasi: Ruth Meyer summer research fellowship (2014, declined) and Department of Biology Award for Research and Scholarship, May, 2015.

Sam Lauffer: Department of Biology Award for Research and Scholarship, May, 2015.

Ella D'Amico: Coronat Scholarship for summer research, Summer, 2015; Department of Biology Academic and Research Achievement award, May 2016

Amber Barrow: LSAMP summer (2015) and academic year fellow, 2015-2016; Remembrance Scholar, 2016-2017; Neuroscience summer research fellowship, 2016. Renee Crown Honors Stipend (\$4000)

Elizabeth Reynolds: Ruth Meyer summer research fellowship, 2015; Department of Biology Research Achievement Award, May 2016

Brooke Hamling: Ruth Meyer summer research fellowship, 2013; Donald Lundgren Award for Outstanding Achievement in Biology, May 2016

Luke Loftus: Department of Biology Research Achievement Award, May 2016

Caitlin White: Honors program summer research fellowship, 2016

Giovanni Pacheco: Hispanic honors summer research fellowship, 2016

***Masters and PhD Thesis Committee Member (program, role)***

In Progress

Candace Receno (PhD Exercise Science, SU; co-mentor)  
Jeremy Sloane (PhD Biology, SU; member)  
Joshua Burton (PhD Biology, SU; member)

Completed

Lisa Henry, MS (Binghamton University, external member)  
Jennifer Tropp, PhD (U. Conn. external member)  
Julie Markham PhD (Psych, UIUC)  
Kirk Erickson PhD (Psych, UIUC)  
Clint Canal PhD (NSP, UIUC)  
Jason Pych PhD (Psych, UIUC)  
Victor Wang PhD (NSP, UIUC)  
Carol Curtis PhD (MIP, UIUC)  
Darien Hall PhD (NSP, UIUC)  
Georgina Aldridge PhD (MSP/NSP, UIUC)  
Maggie Blattner PhD (MSP/NSP, UIUC)  
Ken Morris PhD (MSP, Neuroscience, UIUC)  
Claudia Lutz PhD (NSP, UIUC)  
Jennifer Provyn PhD (Psychology, SU; Chair)  
Melissa Morales PhD (Psychology, Binghamton University, outside examiner)  
Corinne Ostock PhD (Behavioral Neuroscience, Binghamton University, outside examiner)  
Amanda Hoffman PhD (Chemistry, SU; Chair)  
Luis Flores PhD (Psychology, UIUC, Member)  
Yu Ho Kim PhD (Exercise Science, SU; member)  
Deion Burks (MS Biology, SU; member)

***Diagnostic / Qualifying Exam Committee Member***

Diana Thomas (NSP, UIUC)  
Patty Kandalepas (NSP, UIUC)  
Jonathon House (NSP, UIUC)  
Jenny Kim (NSP, UIUC)  
Margaret Ferris (MSP/NSP, UIUC)  
Cynthia Colon-Rivera (NSP, UIUC)  
Carrie Brumback (Psych, UIUC)  
Gloria Chapa (NSP, UIUC)  
Darien Hall (NSP, UIUC)  
Jessica Stanis (NSP, UIUC)  
Claudia Lutz (NSP, UIUC)  
Ken Morris (NSP, UIUC)  
Zhenghan Qi (NSP, UIUC)  
Renee Haag (NSP, UIUC)  
Suren Bandara (NSP, UIUC)  
Maggie Blattner (NSP, UIUC)  
Laura Chaddock (Psych, UIUC)  
Martina Mustroph (NSP, UIUC)  
Paven Aujli (NSP, UIUC)  
Franklyn Rocha Cabrero (NSP/MSP, UIUC)  
Dawn Lammert (Neuroscience, Upstate Medical University)  
Geoffrey Eill (Neuroscience, Upstate Medical University)  
Eric Zajiceke (Neuroscience, Upstate Medical University)

## **Scientific and Popular Press**

**2015 – present**

### Research Highlights

The Wrinkled Brain Project, Gedanken: The Science of Aging

<http://wrinkledbrainproject.org/gedanken-the-science-of-aging/>

### Outreach Highlights

SU Magazine, Fall/Winter 2015 Feature, Explorations in Aging:

<http://sumagazine.syr.edu/2015fall-winter/features/agingstudies.html>

SU Magazine, Spring 2015 Orange Matters:

<http://sumagazine.syr.edu/2015spring/orangematters/movementforhealthyaging.html>

**2010-2014**

### Research Highlights

Hussain et al., 2014. Estrogen and Memory System Bias in Females Across the Lifespan.

*Translational Neuroscience*, 5, 35-50. <http://link.springer.com/article/10.2478%2Fs13380-014-0209-7#page-1>

Team to study health effects of botanical estrogens

[http://news.illinois.edu/news/10/0907botanicals\\_helferich.html](http://news.illinois.edu/news/10/0907botanicals_helferich.html)

### Outreach Highlights

Science museum event launches neuroscience education program

[http://news.illinois.edu/news/12/0307orphy\\_BarbaraHug\\_DonnaKorol.html](http://news.illinois.edu/news/12/0307orphy_BarbaraHug_DonnaKorol.html)

Project NEURON receives funding for new computer game

<http://illinois.edu/lb/article/32/55367>

At Brain Awareness Day, Project NEURON Challenges Children's Color Perception

<http://education.illinois.edu/news/2010/brain-awareness-day>

Educator resources are meant to give access to information and teaching tools about the nervous system and related health issues.

<http://www.brainfacts.org/Educators/Educator-Resources/Educator-Resources/Project-NEURON>

Project NEURON highlighted in the Neuroscience For Kids Newsletter as the site of the month, September, 2013

<http://faculty.washington.edu/chudler/sites.html>

WCNY TV Cycle of Health piece:

<http://www.wcny.org/television/cycleofhealth/>

<http://video.wcny.org/video/2365489181/>

Coverage of workshop, Movement for Healthy Aging, April 11-12, 2014

<http://www.localsyr.com/bridge-street/video/d/video/dance-and-parkinsons-bridge-street-4814/5034000>

[http://www.syracuse.com/news/index.ssf/2014/03/syracuse\\_university\\_and\\_mark\\_morris\\_dance\\_group\\_to\\_offer\\_parkinsons\\_disease\\_move.html](http://www.syracuse.com/news/index.ssf/2014/03/syracuse_university_and_mark_morris_dance_group_to_offer_parkinsons_disease_move.html)

<https://www.facebook.com/thecollegesyr/posts/628481957233692>

<http://news.syr.edu/community-workshop-about-dance-and-parkinsons-planned-36888/>

[http://asnews.syr.edu/newsevents\\_2014/releases/parkinsons\\_dance.html](http://asnews.syr.edu/newsevents_2014/releases/parkinsons_dance.html)

## **2005-2009**

### Research highlights

T. Shors, 2005, *Learning and Memory* 12, 84-85, Estrogen and learning: Strategy over parsimony, commentary on "McElroy, M.W. and Korol, D.L. (2005). Intrahippocampal muscimol shifts learning strategy in gonadally intact young adult female rats. *Learning and Memory*, 12, 150-158".

Cahill, 2006. Why sex matters for neuroscience. *Nature Reviews Neuroscience*, 7, 477-484.

### Good Memories

<http://www.las.illinois.edu/alumni/magazine/articles/2008/memories/>

Fitness counteracts cognitive decline from hormone-replacement therapy

<http://news.illinois.edu/news/06/0124estrogen.html>

### Conference Press Requests

Erickson, K.I., Pruis, T.A., Debrey, S.M., Bohacek, J., and Korol, D.L. (2006). Estrogen and exercise interact to up-regulate BDNF levels in the hippocampus but not striatum of middle-aged female Brown-Norway rats. 36<sup>th</sup> Annual meeting for the Society for Neuroscience, *Society for Neuroscience Abstracts*, 32, 266.17.

Erickson, K.I., Epstein, D.E., Malkowski, E.J., Warraich, Z. and Korol, D.L. (2007). Voluntary exercise enhances place learning in young adult male rats. 37<sup>th</sup> Annual meeting for the Society for Neuroscience, *Society for Neuroscience Abstracts*, 33, 528.10

### Faculty Profiles

<http://www.las.illinois.edu/news/2008/jrfaculty/>

<http://news.illinois.edu/ii/08/0207/facultyfriendly.html>

## **2000-2004**

### Research Highlights

Spektrum der Wissenschaft's publication on psychology and brain research, described as a "German sister magazine to *Scientific American*"; *Gehirn & Geist* (Vol. 1);

Estrogen may dictate what problem-solving strategy brain uses

<http://news.illinois.edu/ii/02/0620/0620.pdf>

Flashbulb Memories of 9/11

<http://www.las.illinois.edu/alumni/magazine/articles/2004/flashbulb/>

Faculty of 1000 must read: <http://www.f1000biology.com/article/15464412/evaluation>

Korol, D.L. (2004). *Neurobiology of Learning and Memory*, 82, 309-323.

### Conference Press Requests

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