

# Emily G. Jacobs

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Neuroscience Research Institute  
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## EDUCATION

- 2004-2010 **University of California, Berkeley**  
Ph.D in Neuroscience  
Advisor: *Mark D'Esposito, M.D.*
- 2003-2004 **Harvard University**  
Concentration: Mind, Brain, Behavior  
Visiting Undergraduate Student program
- 2000-2004 **Smith College**  
B.A. in Neuroscience  
Academic Honors: Phi Beta Kappa, Sigma Xi

## APPOINTMENTS & EXPERIENCE

- 2016-present **Assistant Professor, University of California, Santa Barbara**  
Department of Psychological and Brain Sciences  
Neuroscience Research Institute  
Interdisciplinary Graduate Program in Dynamical Neuroscience  
*\*On-campus start date*
- 2013-2016 **Instructor in Psychiatry, Harvard Medical School**  
NIH K12 Career Development Award, HD051959  
Title: "Sex-specific chromosomal and neural markers of aging in mid-life men and women: A lifespan perspective"  
Advisor: *Jill Goldstein, Ph.D.*
- 2012-2013 **Stuart T. Hauser CRTP Fellow, Harvard Medical School**  
Clinical Research Training Program, T32 MH 016259  
Advisor: *Jill Goldstein, Ph.D.*  
Co-mentors: *Jordan Smoller, M.D., Sc.D., Anne Klibanski, M.D.*
- 2010-2012 **Robert Wood Johnson Foundation Health and Society Scholar**  
University of California, San Francisco  
Advisor: *Elissa Epel, Ph.D.*  
Collaborators: *Natalie Rasgon, M.D., Elizabeth Blackburn, Ph.D.*
- 2004-2010 **Helen Wills Neuroscience Institute, UC Berkeley**  
*Dissertation Committee: Mark D'Esposito, M.D., Robert Knight, M.D., William Jagust, M.D. David Presti, Ph.D.*

- Estrogen shapes dopamine-dependent cognitive processes: Implications for women's health.

2001-2004

**Visual Cognition fMRI Laboratory, Smith College**

Undergraduate Research

- Mentor: *MJ Wraga, Ph.D.*

2003

**Institute of Cognitive Neuroscience, University College London**

Undergraduate Research

- Mentor: *Sarah-Jayne Blakemore, Ph.D.*

2001-2003

**Center for Developmental Cognitive Neuroscience, UMass Medical School**

Undergraduate Research

- Mentor: *Adele Diamond, Ph.D.*

FUNDING

**Pending**

"Sex hormones, spatial navigation, and the aging brain"

Role: PI, 5-year award

Co-PI Liz Chrastil, Co-I: Mary Hegarty

National Institutes of Health

\$3,200,000 5-year award

"NRT-HDR: Multimodal Big Data Science: Training Students Across Data Science and Discipline-Specific Boundaries"

Lead PI: B.S. Manjunath

Role: Co-PI, 5-year award

National Science Foundation

\$3,000,000 5-year award

"Impact of ovarian hormone suppression on regional and global brain architecture and cognition"

Role: PI, 5-year award

Co-PI: Matt Panizzon (UCSD)

National Institutes of Health

\$2,498,000 5-year award

**Current**

2019-2020

Hellman Fellows Fund

Impact of Hormone-Based Medication on Human Brain Structure

\$40,000, 1-year award

Role: PI

2019-2020

University of California, Santa Barbara Academic Senate Grant

Impact of Hormone-Based Medication on Human Brain Structure

\$20,000, 1-year award

Role: PI

2018-2020

Brain and Behavior Research Foundation

Sex differences in dopamine neurotransmission in the human brain: A molecular PET imaging study

\$70,000, 2-year award

Role: PI

- 2018-2019 California Nanosystems Institute UCSB Challenge Grant  
Spatial Navigation, Sex Hormones, and the Aging Brain  
\$50,000, 1-year award  
Role: PI
- 2018-2019 University of California, Santa Barbara Academic Senate Grant  
Impact of Reproductive Aging on Spatial Navigation  
\$15,000, 1-year award  
Role: PI
- 2018 University of California Regents Junior Faculty Fellowship  
The role of sex hormones in the aging brain  
\$7500, 1-year award  
Role: PI
- 2016-2020 National Institutes of Health R01 MH108511 (PI Jason Moser)  
Cognitive Control in Anxiety: The Role of Ovarian Hormones  
Role: Consultant, 5-year award
- Previous**
- 2017 UCSB Psychological and Brain Sciences Gottsdanker Research Fund Award  
\$2000, 1-year award  
Role: PI
- 2013-2016 National Institutes of Health K12 HD051959 Career Development Award  
Building Interdisciplinary Research Careers in Women's Health (BIRCWH)  
\$300,000, 3-year award  
Role: PI/Scholar
- 2012 National Institutes of Health MH016259  
NIH/Harvard Medical School Stuart T. Hauser CRTP Fellowship  
\$88,680, 2-year award  
Role: PI/Scholar
- 2010-2012 Robert Wood Johnson Foundation Health and Society Fellowship  
\$200,850, 2-year award  
Role: PI/Scholar
- 2009 UC Berkeley Elizabeth Roboz Einstein Fellowship in Neurosciences and Human  
Development  
\$5,000, 1-year award
- 2009 Phi Beta Kappa Graduate Scholarship  
\$5,000, 1-year award
- 2007 UC Berkeley Consortium on Population Health and Human Development Pilot Grant  
\$10,000, 1-year award
- 2006-2009 National Science Foundation Graduate Research Fellowship  
\$122,500, 3-year award

## HONORS

- 2017 NARSAD Young Investigator Award, Brain and Behavior Research Foundation  
2016 National Academy of Sciences Kavli *Frontiers of Science* Fellow  
2013-2016 National Institutes of Health "BIRCWH" Women's Health Scholar

2014	NIH Travel Award, Organization for the Study of Sex Differences
2013	Early Career Travel Award, The American College of Neuropsychopharmacology
2012	Harvard Medical School's Stuart T. Hauser Clinical Research Fellow
2010-2012	Robert Wood Johnson Foundation Health and Society Scholar
2006-2009	National Science Foundation Graduate Research Fellow
2006	Patricia Goldman-Rakic Fellow for Women in Neuroscience
2004	Rhodes Scholarship finalist
2004	Council on Undergraduate Research, 'Posters on Capitol Hill' award
2003	Howard Hughes Medical Institute Undergraduate Research Fellowship
2002	International Education of Students: Excellence in the Sciences Scholarship
2002	Howard Hughes Medical Institute Undergraduate Research Fellowship
2000	National Youth Science Foundation, Illinois representative

## PEER-REVIEWED PUBLICATIONS & MANUSCRIPTS

### **MyBibliography:**

<http://www.ncbi.nlm.nih.gov/sites/myncbi/1BW9yiTxQbbkj/bibliography/50287525/public/?sort=date&direction=ascending>

### <sup>+</sup>*Trainee-publication*

1. Taylor C<sup>+</sup>, Pritschet L<sup>+</sup>, Yu S<sup>+</sup>, **Jacobs E.G.** (In press) Applying a women's health lens to the study of the aging brain. *Frontiers in Human Neuroscience* doi: 10.3389/fnhum.2019.00224
2. **Jacobs E.G.** (In press) Gender diversity drives scientific discovery. *Frontiers for Young Minds*
3. Seitz J, Kubicki M, **Jacobs E.G.**, et al. Impact of sex and reproductive status on memory circuitry structure and function in early midlife using structural covariance analysis. *Human Brain Mapping*. 2018;1–13. <https://doi.org/10.1002/hbm.24441>
4. **Jacobs E.G.** and Goldstein J.M. (2018) The Middle-Aged Brain: Biological sex and sex hormones shape memory circuitry *Current Opinions in Behavioral Science* 23:84–91 doi:10.1016/j.cobeha.2018.03.009
5. **Jacobs E.G.**, Weiss B., Makris N., Whitfield-Gabrieli S., Buka S., Klibanski A., Goldstein J.M. (2017) Reorganization of functional networks in verbal working memory circuitry in early midlife: The impact of sex and menopausal status. *Cerebral Cortex* 27(5):2857-2870. PMID: 27178194.
6. Rentz D.M., Weiss B.K., **Jacobs E.G.**, Cherkerzian S, Klibanski A, Remington A, Aizley H, Goldstein J.M. (2017) Sex differences in episodic memory in early midlife: impact of reproductive aging. *Menopause* 24(4):400-408.
7. **Jacobs E.G.**, Weiss B., Makris N., Whitfield-Gabrieli S., Buka S., Klibanski A., Goldstein J.M. (2016) Impact of sex and menopausal status on episodic memory circuitry in early midlife. *The Journal of Neuroscience*. 36(39):10163-10173 PMID: PMC5039260 (Featured in *JNeurosci* Highlights)
8. **Jacobs E.G.**, Holsen L., Lancaster K., Makris N., Whitfield-Gabrieli S., Remington A., Weiss B., Buka S., Klibanski A., Goldstein J.M. (2015) 17 $\beta$ -Estradiol differentially regulates stress circuitry activity in healthy and depressed women. *Neuropsychopharmacology*. 40, 566-576. PMID: 25113601 PMID: PMC4289944
9. Cohen J., Gallen C., **Jacobs E.G.**, Lee T., D'Esposito M. (2014) Quantifying the reconfiguration of intrinsic networks during working memory. *PLoS ONE*. 9(9): e106636. PMID: PMC4156328

10. **Jacobs E.G.**, Epel ES, Lin J, Blackburn EH, Rasgon NL. (2014) Relationship between leukocyte telomere length, telomerase activity and hippocampal volume in early aging. *JAMA Neurology*. 71(7):921-923. PMID: PMC5287208
  11. **Jacobs E.G.**, Kroenke C, Lin J, Epel ES, Kenna HA, Blackburn EH, Rasgon NL. (2013) Accelerated cell aging in female APOE-ε4 carriers: Implications for hormone therapy use. *PLoS ONE* 8(2): e54713. PMID: PMC3572118 (*Faculty of 1000 selection*)
  12. John N., **Jacobs E.G.**, Mendoza-Denton R., Francis D.D. (2012) Wealth, health and the moderating role of implicit social class bias. *Annals of Behavioral Medicine* 45(2):173-179. PMID: 23229159
  13. **Jacobs E.G.**, D'Esposito M. (2011) Estrogen shapes dopamine-dependent cognitive function: Implications for women's health. *Journal of Neuroscience*. 31(14):5286-5293. PMID: PMC3089976 (*Featured Article*)
  14. Cools R., Sheridan M., **Jacobs E.**, D'Esposito M. (2007). Impulsive personality predicts dopamine-dependent changes in frontostriatal activity during component processes of working memory. *Journal of Neuroscience*. 27(20):5506–5514 PMID: 1750757
  15. Wraga M., Helt M., **Jacobs E.**, & Sullivan K. (2007). Neural basis of stereotype-induced shifts in women's mental rotation performance. *Social, Cognitive, and Affective Neuroscience* 2(1):12-19 PMID: PMC2555429
  16. Wraga M., Duncan L., **Jacobs E.**, Helt M., & Church J. (2006). Stereotype susceptibility narrows the gender gap in imagined self-rotation performance. *Psychonomic Bulletin & Review* 13(5):813-9 PMID: 17328378
- In progress:*
17. Konishi K, Cherkerzian S, **Jacobs E.G.** et al. Impact of BDNF and sex on maintaining intact memory function in early midlife. (*In prep*)
  18. Konishi K, Cherkerzian S, **Jacobs E.G.** et al. Impact of adrenal hormones, reproductive aging, and major depression on memory decline in early midlife. (*In prep*)
  19. **Jacobs E.G.**, De Vivo I, Makris N., Kubicki M., Pasternak O., Shenton M., Goldstein J.M. Leukocyte telomere length is associated with widespread grey and white matter deficits in early aging. (*In prep*)
  20. Pritschet L. <sup>+</sup>, Santander T., Taylor C. <sup>+</sup>, Yu S. <sup>+</sup>, Layher E., Miller M.B., Grafton S.T., **Jacobs E.G.** Estradiol fluctuations across a complete reproductive cycle shapes resting state functional connectivity (*In prep*)
  21. Taylor C. <sup>+</sup>, Pritschet L. <sup>+</sup>, Olsen R., Yu S. <sup>+</sup>, Grafton S.T., **Jacobs E.G.** Human hippocampal subfield volume variability across one complete reproductive cycle (*In prep*)
  22. Yu S. <sup>+</sup>, Davis R., Boone A., Hegarty M., Chrastil E., **Jacobs E.G.** Sex differences in age-related changes in spatial navigation (*In prep*)
  23. Taylor C. <sup>+</sup>, Hayes M. <sup>+</sup>, Woods J. <sup>+</sup>, **Jacobs, E.G.** Determining the impact of oral hormonal contraceptives on the central nervous systems: a population neuroimaging study (*In prep*)

## CONFERENCE PUBLICATIONS

**Jacobs E.G.**, Makris N., Kubicki M., Pasternak O., Shenton M., De Vivo I, Goldstein J.M. Leukocyte telomere length is associated with widespread grey and white matter deficits in early aging: Impact of sex and menopausal status. *Neuropsychopharmacology* (2016) 41, S116–S288; doi:10.1038/npp.2016.240

**Jacobs E.G.**, Weiss B., Whitfield-Gabrieli S., Klibanski A., Goldstein J.M. Impact of sex and menopausal status on episodic memory circuitry in early midlife. *Journal of Women's Health* (2016) 25, 955-978. doi:10.1089/jwh.2016.29009.abstracts

**Jacobs E.G.**, Weiss B., Rentz D., Whitfield-Gabrieli S., Remington A., Aizley H., Klibanski A., Goldstein J.M. Depletion of sex steroid hormones in mid-life alters hippocampal activity during verbal memory encoding: A population-based fMRI study of sex differences in memory decline. *Neuropsychopharmacology* (2015) 40, S106–S271; doi:10.1038/npp.2015.325

**Jacobs E.G.**, Weiss B., Whitfield-Gabrieli S., Klibanski A., Goldstein J.M. Reproductive aging is associated with altered prefrontal and hippocampal signaling during working memory. *Journal of Women's Health* (2014) 23, 862. doi:10.1089/jwh.2014.ab05.abstracts

**Jacobs E.G.**, Weiss B., Whitfield-Gabrieli S., Remington A., Aizley H., Klibanski A., Goldstein J.M. Reproductive aging modulates working memory-related neural activity in women. *Neuropsychopharmacology* (2015) 39, S473–S647; doi:10.1038/npp.2014.282.

**Jacobs E.G.**, Holsen L., Lancaster K., Whitfield-Gabrieli S., Remington A., Buka S., Klibanski A., Goldstein J.M. Gonadal hormone regulation of stress circuitry activity in healthy women is disrupted in major depressive disorder. *Neuropsychopharmacology* (2013) 38, S585–S586.

**Jacobs E.**, D'Esposito M. Estrogen impacts dopamine circuitry: Implications for sex differences in stress-induced prefrontal cortical dysfunction. *Biological Psychiatry* (2012) 71, S166-167; doi: 10.1016/j.biopsych.2012.02.013.

Song SH., Chen AJ, Nycum TJ, Turner GR, **Jacobs E.**, D'Esposito M. Attention reduces variability of goal-relevant perceptual representations within visual association cortex. *NeuroImage* (2009) 47, S65; doi: 10.1016/S1053-8119(09)72109-3.

**Jacobs E.**, D'Esposito M. Individual differences in cognition: How a person's hormonal state and genetic background impacts prefrontal cortical function. *NeuroImage* (2009) 47, S189; doi: 10.1016/S1053-8119(09)72109-3.

## INVITED LECTURES

- “Sex steroids and the aging brain” Douglas Brain Imaging Center Lecture Series, Department of Psychiatry, McGill University, **Montreal, Canada** (2019, September) Host: Maria Natasha Rajah, Ph.D.
- “Gender diversity drives scientific discovery” Groundbreaking Research and Innovative Technology (GRIT) Lecture Series, **University of California, Santa Barbara** (2019, June). Host: Lina Kim, Ph.D.
- “Sex steroids and the aging brain – Applying a women's health lens to cognitive neuroscience” Keynote Lecture, Science and Gender Equality Symposium (“SAGE 2.0”) UKE, **Hamburg, Germany** (2018, March). Host: Sina Trautmann-Lengsfeld, Ph.D.

- “Sex and menopausal status shape early changes in episodic memory function” Talk presented in celebration of the 25<sup>th</sup> Anniversary of the Office of Research on Women’s Health (ORWH) and BIRCWH Annual meeting, Natcher Conference Center, **National Institutes of Health** (2016, May). Introduced by: Jill Goldstein, Ph.D., Host: Lisa Begg, Dr.P.H. and Janine Clayton, M.D.  
Link: <https://videocast.nih.gov/summary.asp?Live=19247&bhcp=1>
- “Role of estrogen in regulating stress circuitry” Kavli Summer Institute in Cognitive Neuroscience, Topic: “The Stressed Brain” **University of California, Santa Barbara** (2016, June). Host: Barry Giesbrecht, Ph.D.
- “Interrogating the role of sex steroid hormones in memory circuitry” 15<sup>th</sup> Annual Integrative Center for Learning and Memory Symposium, **University of California, Los Angeles** (2016, May). Hosts: Alcino Silva, Ph.D., Michael Fanselow, Ph.D., David Glanzman, Ph.D.
- “Reorganization of functional networks in memory circuitry in early midlife: The role of sex and menopausal status”. Annual Neurosciences Interdisciplinary Retreat, **BWH Institute for Neurosciences**, (2015, November). Host: Anu Swaminathan, Ph.D., c/o Brigham Research Institute Executive Committee
- “Fetal origins of the aging of memory circuitry”. Robert Wood Johnson Foundation Health and Society Seminar Series, **Harvard T.H. Chan School of Public Health**, (2015, November). Host: Lisa Berkman, Ph.D.
- “Interrogating the role of sex steroid hormones in memory circuitry” Department of Psychology, **Columbia University**, (2015, May). Host: Sarah Woolley, Ph.D.
- “Interrogating the role of sex steroid hormones in memory circuitry” Department of Psychological and Brain Sciences, **University of California, Santa Barbara**, (2015, April). Host: Miguel Eckstein, Ph.D.
- “Interrogating the role of sex steroid hormones in memory circuitry” Department of Psychology, **University of Michigan**, (2015, March). Host: Martin Sarter, Ph.D.
- “Relationship between reproductive senescence and the aging of memory circuitry” Department of Medicine, Division of Women’s Health Cross-disciplinary Women’s Health Seminar Series, **Brigham and Women’s Hospital** (2015, January). Host: Tamarra James-Todd, Ph.D.
- “Use of functional MRI to investigate the role of gonadal hormones in brain function” Men’s Health: Aging and Metabolism Unit, Division of Endocrinology, **Harvard Medical School** (2014, November). Host: Shehzad Basaria, M.D.
- “Use of PET imaging and functional MRI and to investigate the role of gonadal hormones in brain function” BRI Functional and Molecular Neuroimaging Salon, **Brigham and Women’s Hospital** (2014, September). Host: Emily Stern, M.D.
- “Early chromosomal and neural markers of aging in mid-life men and women: A lifespan perspective” Center for Depression, Anxiety and Stress Research, **McLean Hospital** (2014, June). Host: Diego Pizzagalli, Ph.D.
- “Chromosomal and neural markers of aging in mid-life men and women: A lifespan perspective” Psychiatric Genetics and Translational Research Seminar, **Massachusetts General Hospital** (2014, May). Host: Jordan Smoller, M.D., Sc.D.
- “Chromosomal and neural markers of aging in mid-life men and women: A lifespan perspective” Research Initiatives Seminar, **Brigham and Women’s Hospital** (2014, January). Host: Hadine Joffe, M.D., M.Sc.

- “Estrogen’s role in shaping prefrontal cortical function” Neuroscience Seminar Series, **UCSF Center for Neurobiology and Department of Psychiatry** (2012, November). Host: Dhakshin Ramanathan, M.D., Ph.D.
- “Estrogen use and telomere attrition in post-menopausal women” Building Interdisciplinary Research Careers in Women’s Health (BIRCWH) Seminar, **UCSF School of Medicine** (2012, September). Hosts: Monica Gandhi, M.D. and Ruth Greenblatt, M.D.
- “Pharmacoendocrinology and the brain: Why estrogen’s influence on neurochemistry matters for women’s health.” **Massachusetts Neuropsychological Society**, Boston, MA. (2011, November). Host: Mary Coakley-Welch, Ph.D.
- “Estrogen and the Brain.” Seminar given at the **30<sup>th</sup> Annual Renaissance Weekend**, Charleston, SC. (2010, December) Host: Ambassador Philip Lader, J.D., Ph.D. and Linda Lader, M.Div.
- “Individual differences in cognition.” **Google**, Mountainview, CA. (2010, May) ([link](#)) Host: Peter Jin Hong
- “A women's health approach to frontal lobe function.” **Smith College**, Northampton, MA. (2009, September) Hosts: Mary Harrington, Ph.D. and President Carol Christ, Ph.D.

## CONFERENCE PRESENTATIONS: SYMPOSIA, TALKS, & POSTERS

<sup>+</sup>*Trainee-led work*

### 2019

1. Pritschet L. <sup>+</sup>, Santander T., Taylor C.T.<sup>+</sup>... **Jacobs E.G.** (June, 2019) “Estradiol shapes resting state functional connectivity strength over a complete reproductive cycle” Poster presented at the Organization of Human Brain Mapping, Rome, Italy.
2. Taylor C.T. <sup>+</sup>, Pritschet L. <sup>+</sup>, Santander T... **Jacobs E.G.** (June, 2019) “Human hippocampal subfield volume variability across one complete reproductive cycle” Poster presented at the Organization of Human Brain Mapping, Rome, Italy.
3. Layher E., Pritschet L. <sup>+</sup>, Santander T., Taylor C. <sup>+</sup>, Yu S. <sup>+</sup>, Grafton S., **Jacobs E.G.**, Miller M. (June, 2019) “Within-subject fMRI analyses of the successful retrieval effect in recognition memory” Poster presented at the Organization of Human Brain Mapping, Rome, Italy.

### 2018

4. **Jacobs E.G.** (May, 2018) “Sex Hormones and the Aging Brain” **Symposium and Talk** presented at the Association for Psychological Science, San Francisco, CA
5. **Jacobs E.G.** (October, 2018) “The middle-aged brain: Interrogating the role of sex hormones in memory circuitry” **Symposium and Talk** presented at the Society for Psychophysiological Research, Quebec City, Canada
6. Konishi J, Cherkerzian S, **Jacobs E.G.**, et al. (December, 2018) “Steroid hormones, reproductive aging and major depression: Sex differences in memory decline in early midlife. Poster presented at the 57<sup>th</sup> Annual Meeting of the American College of Neuropsychopharmacology
7. Taylor C. <sup>+</sup> & **Jacobs E.G.** (November, 2018) “The impact of oral hormonal contraceptives on the central nervous system – a population approach” Poster presented at the 48<sup>th</sup> Annual Meeting of the Society for Neuroscience, San Diego, CA.
8. Pritschet L. <sup>+</sup> & **Jacobs E.G.** (November, 2018) “Reproductive aging shapes top-down, goal-directed modulation of visual attention” Poster presented at the 48<sup>th</sup> Annual Meeting of the Society for Neuroscience, San Diego, CA.



9. **Jacobs E.G.** (October, 2018) “The middle aged brain – the role of sex hormones in memory circuitry” **Symposium and Talk** given at the 58th Annual Meeting of the Society for Psychophysiological Research, Quebec City, Canada
10. Taylor C.<sup>+</sup> & **Jacobs E.G.** (May, 2018) “Determining the impact of oral hormonal contraceptives on the central nervous system” Poster presented at the 12<sup>th</sup> Annual Meeting of the Organization for the Study of Sex Differences, Atlanta, CA. **\*Florence T. Haseltine Award for “outstanding poster by a new investigator”**
11. **Jacobs E.G.** (May, 2018) “Sex steroids and the aging brain” **Symposium and Talk** given at the 30<sup>th</sup> Annual Convention of the Association for Psychological Science, San Francisco, CA.

## 2017

12. Konishi K., **Jacobs E.G.**, Cherkerzian S., Weiss B.K, Rentz D. M. et al. (December, 2017) Impact of BDNF and sex on maintaining intact memory function in early midlife. Abstract, 56<sup>th</sup> Annual Meeting of the American College of Neuropsychopharmacology, Palm Springs, CA.
13. [“The Kavli Symposium on Sex Steroids and the Brain”](#) Co-hosted by the Kavli Foundation and the UCSB Brain Initiative, featuring Curly Distinguished Lectures by Profs. John Morrison, Roberta Brinton and **Emily Jacobs**. Moderated by Prof. Ken Kosik. Marine Science Auditorium, June 1, 2017

## 2016

14. **Jacobs E.G.**, Makris N., Kubicki M., Shenton M., DeVivo I., Goldstein J.M. (December, 2016) Leukocyte telomere length is associated with widespread grey and white matter deficits in early aging: Impact of sex and menopausal status. Abstract, 55<sup>th</sup> Annual Meeting of the American College of Neuropsychopharmacology, Hollywood, FL.
15. **Jacobs E.G.\***, Goldstein J.M.\*, Morrison J., Frick K. (May, 2016) “Early cellular, synaptic, and circuit-level biomarkers of sex differences in memory decline” **Symposium and Talk** given at the Organization for the Study of Sex Differences (Society for Women’s Health Research), Philadelphia, PA. **\*Co-Chair**
16. **Jacobs E.G.**, Weiss B., Whitfield-Gabrieli S., Klibanski A., Goldstein J.M. (June 2016) Impact of sex and menopausal status on episodic memory circuitry in early midlife. Poster presented at the NIH Office of Research on Women’s Health (ORWH), Bethesda, MD. **\*Featured as “top three posters”**

## 2015

17. **Jacobs E.G.**, Weiss B., Rentz D., Whitfield-Gabrieli S., Remington A., Aizley H., Klibanski A., Goldstein J.M. (December, 2015) Depletion of sex steroid hormones in mid-life alters hippocampal activity during verbal memory encoding: A population-based fMRI study of sex differences in memory decline. Poster presented at the 54<sup>th</sup> Annual Meeting of the American College of Neuropsychopharmacology, Hollywood, FL. **\*Selected as top 5% of posters \*Recorded as a “voice poster”**
18. Gallen C.L., Hwang K., Chen A.J., **Jacobs E.G.**, Lee T.R., D’Esposito M. (October, 2015) Influence of selective attention on brain network reconfiguration during working memory. Poster presented at the 45<sup>th</sup> Annual Meeting of the Society for Neuroscience, Chicago, IL.
19. **Jacobs E.G.**, Weiss B., Whitfield-Gabrieli S., Remington A., Aizley H., Goldstein J.M. (October, 2015) Reproductive aging modulates working memory-related neural activity in women: Implications for sex differences in memory circuitry aging. Poster presented at Brigham and Women’s Hospital’s “Discover Brigham” Research Symposium.
20. Zhu A., Pasternak O., Lyall A., Makris N., **Jacobs E.G.**, Weiss B., Shenton M.E., Goldstein J.M., Kubicki M. (April, 2015) Impact of sex on white matter integrity in aging of the memory circuitry. Poster presented at Harvard Medical School’s Annual Myself Research Day, Boston, MA.

## 2014

21. **Jacobs E.G.**, Weiss B., Whitfield-Gabrieli S., Klibanski A., Goldstein J.M. (December, 2014) Reproductive aging modulates working memory-related neural activity in women. **Talk** and poster presented at the 53<sup>rd</sup> Annual Meeting of the American College of Neuropsychopharmacology, Phoenix, AZ. **Featured presentation in the “Hot Topics” Symposium.**
22. **Jacobs E.G.**, Weiss B., Whitfield-Gabrieli S., Klibanski A., Goldstein J.M. (November, 2014) The depletion of sex steroid hormones during the menopausal transition is related to altered prefrontal and hippocampal signaling during working memory and memory encoding. **Talk** presented at the 44<sup>th</sup> Annual Meeting of the Society for Neuroscience, Washington, DC.
23. **Jacobs E.G.**, Weiss B., Whitfield-Gabrieli S., Klibanski A., Goldstein J.M. (November, 2014) Reproductive aging is associated with altered prefrontal and hippocampal signaling during working memory. Poster presented at the National Institutes of Health 11<sup>th</sup> Anniversary ORWH Interdisciplinary Women’s Health Research Symposium, Washington, DC. *Published in Journal of Women’s Health, 23(10):849-877.*
24. **Jacobs E.G.**, Weiss B., Whitfield-Gabrieli S., Klibanski A., Goldstein J.M. (September, 2014) Reproductive aging modulates working memory-related neural activity in women. Harvard Medical School and Brigham and Women’s Hospital Annual Women in Medicine and Science Symposium, Boston, MA.
25. **Jacobs E.G.**, Whitfield-Gabrieli S., Weiss B., Klibanski A., Goldstein J.M. (August, 2014) The depletion of sex steroid hormones during the menopausal transition is related to altered prefrontal cortex signaling during working memory. **Talk** given at the 44<sup>th</sup> Annual Meeting of the International Society of Psychoneuroendocrinology, Montreal, Canada. **Featured presentation in the “Young Investigators” symposium.**
26. **Jacobs E.G.**, Whitfield-Gabrieli S., Weiss B., Klibanski A., Goldstein J.M. (April, 2014) The depletion of sex steroid hormones during the menopausal transition is related to altered prefrontal cortex signaling during working memory. Poster presented at the Organization for the Study of Sex Differences (Society for Women’s Health Research), Minneapolis, MN.
27. **Jacobs E.G.**, Weiss B., Whitfield-Gabrieli S., Klibanski A., Goldstein J.M. (March, 2014) Reproductive aging is associated with altered prefrontal and hippocampal signaling during verbal encoding and working memory: Initial characterization of a 50-year follow-up study of a prenatal cohort. Poster presented at the 21<sup>st</sup> Annual Meeting of the Cognitive Neuroscience Society, Boston, MA.

## 2013

28. **Jacobs E.G.**, Holsen L.M., Lancaster K., Remington A., Buka S., Whitfield-Gabrieli S., Klibanski A., Goldstein J.M. (December, 2013) Gonadal hormone regulation of stress circuitry activity in healthy women is disrupted in Major Depressive Disorder. Poster presented at the 52<sup>nd</sup> Annual Meeting of the American College of Neuropsychopharmacology, Hollywood, FL.
29. **Jacobs E.G.** (September, 2013) Sex-specific chromosomal and neural markers of aging in mid-life men and women: A lifespan perspective. Abstract included in the Harvard Medical School and Brigham and Women’s Hospital Annual Women in Medicine and Science Symposium, Boston, MA.

## 2012

30. **Jacobs E.G.**, Laguerta E., Dang L., Jagust W., Weinberger D., D’Esposito M. (2012, October) Estradiol and COMT alter striatal dopamine release and working memory function in women: Direct evidence from [11C]-raclopride PET and fMRI imaging. Poster presented at the 42<sup>nd</sup> Annual Meeting of the Society for Neuroscience, New Orleans, LA.
31. **Jacobs E.G.**, Laguerta E., Dang L., Jagust W., D’Esposito M. (2012, May) Estradiol and COMT alter striatal dopamine release in women. Poster presented at the 67<sup>th</sup> Annual Meeting of the Society for Biological Psychiatry, Philadelphia, PA.
32. **Jacobs E.G.** (2012, April) Behavioral and hormonal interventions buffer against accelerated cell aging in at-risk women. **Talk** given at the 10<sup>th</sup> Annual Meeting of the Robert Wood Johnson Foundation, Princeton, NJ.

## 2011

33. **Jacobs E.G** (2011, November) *Symposium* – Cognitive and behavioural dysfunction in ageing: Role of sex hormones; with Pauline Maki, Ph.D., Paul Newhouse, M.D. and Julie Dumas, Ph.D. **Talk** given at the 11<sup>th</sup> Annual International College of Geriatric Psychopharmacology Meeting, Irvine, CA.
34. **Jacobs E.G** (2011, May) From parity in science to improvements in health. **Talk** given at the 9<sup>th</sup> Annual Meeting of the Robert Wood Johnson Foundation, Bethesda, MD.
35. LeWinn, K., **Jacobs E.G**, Boyce, T.W., D'Esposito, M (2011, March). *Symposium* – Childhood socioeconomic disadvantage and mental health: Psychological, physiological and neurobiological mechanisms. Society for Research in Child Development Biennial Meeting, Montreal, Canada.
36. John, N., **Jacobs E.G**, Mendoza-Denton, R., Francis, D.D. (2011, January). Subjective social status predicts immune function in a young adult cohort. Poster presented at the Annual Meeting of the Society of Personality and Social Psychology, San Antonio, Texas.

## 2010

37. **Jacobs E.G**, D'Esposito, M (2010, November). Estrogen alters top-down modulation of sensory processing. Poster presented at the 40<sup>th</sup> Annual Society for Neuroscience Meeting, San Diego, CA.
38. Vytlacil, J., **Jacobs E.G**, D'Esposito, M (2010, November). Estrogen and COMT polymorphisms interact to affect resting state connectivity with dopaminergic midbrain regions. Poster presented at the 40<sup>th</sup> Annual Society for Neuroscience Meeting, San Diego, CA.
39. Cohen, J., **Jacobs E.G**, D'Esposito, M (2010, November). The connectivity of intrinsic, task-independent networks during working memory. Poster presented at the 40<sup>th</sup> Annual Society for Neuroscience Meeting, San Diego, CA.

## 2009

40. **Jacobs E.**, D'Esposito, M (2009, October). Estrogen shapes dopamine-dependent cognitive processes in prefrontal cortex. Poster presented at the 39<sup>th</sup> Annual Society for Neuroscience Meeting, Chicago, IL.
41. **Jacobs E.**, D'Esposito, M (2009, June). *Symposium* – Individual differences in cognition: How a person's hormonal state and genetic background impacts prefrontal cortical function. **Talk** given at the 15<sup>th</sup> Annual meeting of the Organization for Human Brain Mapping, San Francisco, CA.
42. **Jacobs E.**, D'Esposito, M (2009, June). Individual differences in cognition: How a person's hormonal state and genetic background impacts prefrontal cortical function. Poster presented at the 15<sup>th</sup> Annual meeting of the Organization for Human Brain Mapping, San Francisco, CA.
43. Song, S., Turner, G., **Jacobs, E.**, Nycum, T., D'Esposito, M., Chen, A. (2009, June). Attention reduces variability of goal-relevant perceptual representations within visual association cortex. Poster presented at the 15<sup>th</sup> Annual meeting of the Organization for Human Brain Mapping, San Francisco, CA.
44. **Jacobs, E.**, Cools, R., D'Esposito, M. (2009, January). Individual differences in cognition: The role of COMT genotype and estrogen in frontal lobe function. Poster presented at the 5<sup>th</sup> International Imaging Genetics Conference, Irvine, CA.

## 2008

45. **Jacobs, E.** (2008, August). Genetic and hormonal influences on prefrontal cortical function. **Talk** given at the 5<sup>th</sup> Annual Bay Area Memory Meeting, Davis, CA.
46. **Jacobs, E.**, Cools, R., D'Esposito, M. (2008, April). Genetic and hormonal influences on prefrontal cortical function. Poster presented at the 15<sup>th</sup> Annual Meeting of the Cognitive Neuroscience Society, San Francisco, CA.
47. **Jacobs, E.**, D'Esposito, M. (2008, April). Women's health from a genetic and endocrine perspective. **Talk** given at the Annual Stanford-Berkeley Cognitive Psychology Symposium, Stanford, CA.

## Pre-2008

48. Wraga, M., Helt, M., Duncan, L.E., & **Jacobs, E.** (2006, November). Altering test instructions to improve women's spatial cognition performance. Poster presented at the 47th Annual Meeting of the Psychonomic Society, Houston, TX.
49. Wraga, M., **Jacobs, E.**, Sullivan, K., & Uysal, E. (2006, April). Neural substrates of two classes of egocentric mental transformations. Poster presented at the 13th Annual Meeting of the Cognitive Neuroscience Society, San Francisco, CA.
50. **Jacobs, E.**, Duncan, L.E., Helt, M., & Wraga, M. (2005, January). Stereotype threat, gender, and mental rotation performance. Poster presented at the Sixth Annual Meeting of the Society for Personality and Social Psychology, New Orleans, LA.
51. Helt, M., **Jacobs, E.**, Sullivan, K., & Wraga, M. (2005, January). fMRI study of women's enhanced spatial cognition performance via positive stereotype. Poster presented at the Sixth Annual Meeting of the Society for Personality and Social Psychology, New Orleans, LA.
52. Cools, R., **Jacobs, E.**, Altamirano, L., Sheridan, M., Kelley, E., D'Esposito, M. (2005, November). Dopamine D2 receptor stimulation potentiates BOLD activity in the striatum during attentional switching in visual working memory. Poster presented at the Society for Neuroscience Conference, Washington D.C.
53. **Jacobs, E.**, Wraga, M., Duncan, L., & Church, J. (2004, April). Neural correlates of enhanced spatial cognition performance in men. Presented on Capital Hill for the Council on Undergraduate Research, Washington DC.
54. Wraga, M., **Jacobs, E.**, Duncan, L., & Church, J. (2004, April). fMRI study of men's enhanced spatial cognition performance during stereotype threat. Poster presented at the 11th Annual Meeting on the Cognitive Neuroscience Society, San Francisco, CA.
55. Wraga, M., Helt, M., Duncan, L., **Jacobs, E.** (2004, January). Limits to improving women's spatial cognition performance within a positive stereotype context. Poster presented at the Society for Personality and Social Psychology Meeting, New Orleans, LA

## TEACHING

- **University of California, Santa Barbara** Psychological and Brain Sciences 196: Honors Seminar, 2020
- **University of California, Santa Barbara** Psychological and Brain Sciences 137: Behavioral Endocrinology, 2018, 2019, 2020
- **University of California, Santa Barbara** Psychological and Brain Sciences 594: Graduate Seminar, Hormones and Cognition, 2017, 2020
- **University of California, Santa Barbara** Psychological and Brain Sciences 160/163: Special Studies, Hormones and Cognition, 2017, 2018, 2019, 2020
- **University of California, San Francisco, School of Medicine** Lecturer, Essential Core Social and Behavioral Science Course (2010) (Themes: *Race and Bias in Medicine; Biopsychosocial Model in Medicine*)
- **University of California, Berkeley** Public Health 39G: *Unnatural Causes...Is Inequality Making Us Sick?* Co-taught with Darlene Francis and Kat Saxton. (2009 & 2010)
- **University of California, Berkeley** Molecular and Cellular Biology 61: *Mind, Brain & Behavior*. Graduate Instructor (2006)
- **University of California, Berkeley** Molecular and Cellular Biology MCB 60: *Drugs and the Brain*. Graduate Instructor (2005)
- **Mentoring** (sample)  
Caitlin Taylor, Ph.D. Postdoctoral fellow in the Jacobs Lab (2017- present)

\*Harvey L. Karp Discovery Award Fellow 2019-2020

\*UCSB SAGE Junior Fellow 2018-2020

\*2018 Florence T. Haseltine Prize by OSSD

Laura Pritschet, B.A.

Graduate student in the Jacobs Lab (2017- present)

Shuying Yu, B.A.

Graduate student in the Jacobs Lab (2018-present, lab technician 2016-2018)

\*UCSB Cota-Robles University Fellow (2018-2023)

\*UCSB Crossroads Fellow 2018-2019

\*2018 National Science Foundation GRFP Honorable Mention

\*2019 National Science Foundation GRFP Honorable Mention

Current Undergraduate

Honors Students:

Courtney Kenyon\*<sup>‡</sup>, Maggie Hayes<sup>‡</sup>, Aidan Galati<sup>+</sup>, Morgan Fitzgerald<sup>+</sup>

\*Morgan Award for Research Promise in Psychological and Brain Sciences

<sup>‡</sup> Distinction in the Major

<sup>+</sup>Exceptional Academic Performance

Naomi Warren, B.A.

Supervised on administering cognitive/demographic battery. (2017-2018)

Currently a neuroscience lab technician at *Texas A&M*.

Blair Weiss, M.A.

Supervised on integrating neuroendocrine data into fMRI analyses. (2013-2016)

Currently a PhD student at *Widener University*.

Julia Longenecker, M.A.

Supervised on fMRI data collection and analysis. (2012-2013)

Currently a PhD student at *University of Minnesota*.

Elaine LaGuerta, B.A.

Supervised on raclopride-PET and pharmacology research. (2009-2012)

Completed her graduate degree at *UC Berkeley*.

Katie Cheng, B.A.

Supervised on the creation of an in-house gene database. (2008-2010)

Became a research technician with Prof. Vinon Menon, *Stanford University*.

Jared Torre, M.A.

Mentored on social neuroscience theory, fMRI design and analysis. (2008-

2009) Completed his PhD at *UCLA* with an *NSF Graduate Research Fellowship*.

Erin Thompson, M.A.

Mentored on cognitive neuroscience methods. (2007)

Completed her graduate degree at *University College London*.

## SERVICE

### **Institutional Service** (representative)

- SAGE Center for the Study of the Mind, Junior Fellows Program Co-Director (2018-present)
- UCSB Crossroads Fellowship, "Sex Hormones, Aging, & Spatial Navigation" Co-Lead Faculty (2018-2020)
- UCSB Neuroscience Research Institute Advisory Committee (2017-present)
- UCSB Center for Longevity and Aging, Member (2017-present)
- UCSB Executive Committee (2016-2017)
- UC Berkeley Helen Wills Neuroscience Institute Executive Committee (2006-2010)

### **Reviewer**

American Journal of Neuroradiology; Archives of Neurology; Behavioral Brain Research; Biological Psychiatry; Frontiers in Neuroscience; The French National Research Agency (L'Agence Nationale de la Recherche); Hormones and Behavior; JAMA Neurology; Journal of Alzheimer's Disease; Journal of Cognitive Neuroscience; Neuropsychologia; Neuropsychopharmacology; Neuroscience; Neuroscience and Biobehavioral Reviews; Physiology and Behavior; Proceedings of the National Academy of Sciences; Psychiatry Research; Psychoneuroendocrinology; Psychopharmacology; Trends in Cognitive Science, Annals of the New York Academy of Sciences

### **Guest Editor**

Proceedings of the National Academy of Sciences (2018, 2019)

## Membership

2005 – present	Society for Neuroscience
2005 – present	Cognitive Neuroscience Society
2009 – present	Organization for Human Brain Mapping
2012 – present	Society for Biological Psychiatry
2013 – present	American College of Neuropsychopharmacology ( <i>travel awardee/guest member</i> )

## Media and Public Outreach (*sample*)

**Scientific American Mind**, “Is Estrogen the New Ritalin?” by Erik Vance. (2010, May) ([link](#))

**Berkeley Science Review**, “Hot flashes with a chance of brainstorms” by Ginger Jui. (2010, November) ([link](#))

**Smith Quarterly**, “Estrogen and Memory” by Christina Barber-Just. (2010, September) ([link](#))

**Robert Wood Johnson Foundation**, “Gender bias in research ignores estrogen's effect on the brain” by Sheree Crute (2011, April) ([link](#))

**Daily Californian**, “Study highlights male bias in animal studies” by Claire Perlman (2011, April) ([link](#))

**California Magazine**, “Counting the days” by Anne Pinckard (2011, June) ([link](#))

**National Public Radio**, “Social by Nature” by Alva Noë (2011, July) ([link](#))

**The Telegraph**, “HRT could help delay onset of dementia” by Stephen Adams (2013, February) ([link](#))

**Huffington Post**, “Hormone replacement therapy prevents 'rapid' ageing linked to Alzheimer's, study suggests” Associated Press (2013, February) ([link](#))

**Robert Wood Johnson Foundation**, “HRT may protect against Alzheimer’s in high-risk women” by Sheree Crute (2013, February) ([link](#))

**Stanford School of Medicine**, “Accelerated biological aging evident in women with Alzheimer’s risk factor” by Bruce Goldman (2013, February) ([link](#))

**Science Daily**, “Accelerated biological aging, seen in women with Alzheimer’s risk factor, blocked by hormone therapy” Associated Press (2013, February) ([link](#))

**Web MD**, “HRT cuts Alzheimer’s disease risk” by Peter Russell (2013, February) ([link](#))

**Fox News**, “Can hormone therapy stave off Alzheimer’s?” by Lindsey Konkel (2013, February) ([link](#))

**San Francisco Chronicle**, “Estrogen therapy may fight early Alzheimer’s” by Erin Allday (2013, February) ([link](#))

**Super Human Radio** In conversation with Carl Lanore (2013, February)

**Scientific American Mind**, “Estrogen’s Role in Impulsive Behavior” by Diana Kwon. (2014, May) ([link](#))

**UCSF School of Medicine**, “Cells’ Protective DNA Linked to Size of Brain Region Vital for Memory” by Jeff Norris. (2014, July) ([link](#))

**National Public Radio** and **Public Radio International**, “Gender Bias in Health Research Leads to Unintended Consequences” In conversation with John Hockenberry on *The Takeaway*. (2014, September) ([link](#))

**Harvard Gazette**, “Changes in memory tied to menopausal status” by Haley Bridger (2016, September) ([link](#))

**Society for Neuroscience**, “Sex and Menopausal Status Impact Memory in Early Midlife” by Alexis Wnuk (2016, September) ([link](#))



**CBS News**, “Menopause “brain fog” is real, study finds” by Amy Norton (2016, October) ([link](#))

**The Dana Foundation**, “Hormonal Contraception Linked to Increased Risk of Depression” by Kayt Sukel (2016, November) ([link](#))

**The Dana Foundation**, “Sorting Out the Links Between Menopause and Memory Decline” by Kayt Sukel (2016, November) ([link](#))

**The Dana Foundation**, “Incorporating Sex Influences into Today’s Brain Research” by Kayt Sukel (2017, January) ([link](#))

**National Public Radio and KCLU**, “Girls On South Coast Learn About Careers In Science And Engineering In Unusual Way” by Debra Greene (2017, June) ([link](#))

**The New York Times**, “The Gender War, 2018 Edition” by Thomas Edsall (2018, October) ([link](#))

**TEDx Talk**, “Gender Diversity Drives Scientific Discovery” (2019, January) ([link](#))