

## JUSTIN S. RHODES

**Personal:** Born in New York City, NY, 26 March 1972; married, 2 children

### Appointments

- 2003 Postdoctoral Fellow, Department of Behavioral Neuroscience, Oregon Health & Science University, Portland, Oregon
- 2004 Instructor, Department of Psychology, Lewis & Clark College, Portland, Oregon
- 2005 Assistant Professor, Department of Psychology, University of Illinois at Urbana-Champaign (UIUC)
- 2012 Associate Professor, Department of Psychology, University of Illinois at Urbana-Champaign (UIUC)
- 2019 Professor, Department of Psychology, University of Illinois at Urbana-Champaign (UIUC)

*Other UIUC campus appointments:* Full time member of the Beckman Institute for Advanced Science and Technology; *Affiliate*, Institute for Genomic Biology; *Faculty Member*, Neuroscience Program, Program in Ecology, Evolution, and Conservation Biology

### Education

- B.S. Stanford University, Biology, 1995
- M.S. University of Washington, Seattle, Fisheries, 1998
- M.S. University of Wisconsin-Madison, Statistics, 2002
- Ph.D. University of Wisconsin-Madison, Zoology, 2002
- Postdoc Oregon Health & Science Univ., Behavioral Neuroscience, 2005

### Awards and Honors

- 1989 Research Stipend, \$700, American Museum of Natural History
- 1993 Undergraduate Research Award, \$2500, Stanford University
- 1995 Signing Bonus, \$1000, University of Washington, Seattle
- 1996 Quistorff Fellowship, \$3000, University of Washington, Seattle
- 1999 Enteman Award, \$1500, University of Washington, Seattle
- 1998, 2000, 01 John Jefferson Davis Travel Award, \$300, U. Wisconsin-Madison
- 2003 IBANGS Travel Award, \$346
- 2004 Invited Participant, Vanderbilt University Summer Conference
- 2004 ISBRA Travel Award, \$2000
- 2005 Invited Participant, Gordon Research Conferences
- 2008 **Young Scientist Award**, International Behavioural and Neural Genetics Society, Portland, OR
- 2008-present On list of teachers ranked excellent by their students
- 2010,2012 Invited Participant, Gordon Research Conferences, Genes & Behavior
- 2012-2013 **Helen Corley Petit Scholar**, UIUC
- 2013-2014 **Evelyn Satinoff Professorial Scholar in Psychology**, UIUC

2013	<b>Outstanding Advisor Award</b> , Medical Scholars Program, UIUC
2014	<b>Outstanding Advisor Award</b> , Division of Nutritional Sciences, UIUC
2019	Cover issue, <i>Hormones and Behavior</i> , June issue
2020	Cover issue, <i>Hormones and Behavior</i> , May issue

**Grant Support**

Extramural

Current

2023-2025	<p>“Design of an Extracellular Vesicle Approach to Protect Human Health in Space”  NASA (Cooperative Agreement NNX16AO69A), Translational Research Institute for Space Health, \$107,956  Rhodes (Co-I)</p>
-----------	---

Previous

2000-2002	<p>“The neural basis of hyperactive wheel-running in mice,” NIH-NINDS, NRSA.  Role: Predoctoral fellow</p>
2005-2006	<p>“Gene expression profiles of high alcohol-drinking rodents,” NIH-NIAAA INIA Consortium Pilot Grant, \$50K  Role: PI</p>
2008-2010	<p>Technical Testing Agreement with VM Discovery Inc. to test novel compounds for efficacy in reducing excessive ethanol intake in a mouse model, \$16K.  Role: PI</p>
2011-2012	<p>Technical Testing Agreement with BioModels to test novel compounds for efficacy in reducing excessive ethanol intake in a mouse model, \$10K  Role: PI</p>
2011-2013	<p>“Therapeutic interventions for brain-immune interactions during cognitive aging.” NIH K99 AG040194, \$85,256.  Role: Sponsor</p>
2009-2015	<p>“Mouse genetic differences in exercise-induced hippocampal neurogenesis &amp; learning.” NIH RO1 MH083807, \$1,388,256.  Role: PI</p>
2009-2015	<p>“The functional significance of exercise-induced neurogenesis in cocaine reward” NIH RO1 DA027487 \$1,303,099.  Role: PI</p>

- 2012-2013 “Mouse cognition and hippocampal neurogenesis core facility” Center for Nutrition, Learning and Memory, private funding, Abbott Nutrition, \$1,519,355.  
Role: PI
- 2014-2015 “Impact of Vitamin E on neonatal development” Center for Nutrition, Learning and Memory, private funding, Abbott Nutrition, \$500,000.  
Role: PI
- 2012-2015 “Molecular bases of cognitive impairment in chemobrain and nutritional intervention” Center for Nutrition, Learning and Memory, private funding, Abbott Nutrition, \$987,225.  
Role: Co-PI (Helferich PI)
- 2012-2015 “Enhancing learning and memory in the aged: interactions between dietary supplementation and exercise” Center for Nutrition, Learning and Memory, private funding, Abbott Nutrition, \$1,450,542.  
Role: Co-PI (Woods PI)
- 2012-2015 “Nutritional enhancement of cognition through stem cells” Center for Nutrition, Learning and Memory, private funding, Abbott Nutrition, \$600,000.  
Role: Co-PI (Boppart PI)
- 2013-2016 “Visualizing diet modified brain chemistry with multifaceted chemical imaging” Center for Nutrition, Learning and Memory, private funding, Abbott Nutrition, \$892,104.  
Role: Co-PI (Sweedler PI)
- 2014-2016 “Diet-Modified Brain Chemistry and Plasticity: DHA and Vitamin E as a Case Study” Center for Nutrition, Learning and Memory, private funding, Abbott Nutrition, \$422,463.  
Role: Co-PI (Sweedler PI)
- 2014-2016 “Impact of Fiber on the Gut Microbiome and Cognition in Mice” Center for Nutrition, Learning and Memory, private funding, Abbott Nutrition, \$99,158.  
Role: Co-PI (Woods PI)
- 2014-2016 “BRAIN EAGER: Spatially-Resolved In Vivo Optogenetic Stimulation and Imaging Platform” NSF EAGER. \$300,000.  
Role: Co-PI (Boppart PI)

- 2013-2017 “Exercise as therapeutic intervention to extinguish conditioned drug associations” NIH F30 DA034480, \$231,788.  
Role: Sponsor
- 2016-2017 “Functional role of adult neurogenesis in cognitive recovery from fetal alcohol” F32 AA023444-01A1  
Role: Sponsor, \$174,000.
- 2015-2020 “Mouse cognition and hippocampal neurogenesis core facility”  
Center for Nutrition, Learning and Memory, private funding, Abbott Nutrition, \$789,828  
Role: PI
- 2018-2020 “Origins of exercise-brain interactions” NIH-NINDS, R21 NS104293, \$402,880  
Role: PI
- 2019-2023 “In Vitro Platform for Exploring Muscle-Neuron Interactions.”  
NIH-NINDS, R21 NS109894, \$396,872  
Rhodes: PI
- 2021-2023 “Examination of the bidirectional relationship between hearing loss and Alzheimer Disease pathology.” NIH-NIDCD, R21 DC019473, \$443,525  
Rhodes: Co-I

### Intramural

#### Current

- 2021-2022 “Active feminization of the brain and behavior” UIUC Campus Research Board, \$30K

#### Previous

- 2004-2005 “Neural basis of craving for natural and drug rewards,” Tartar Trust Fellowship, OHSU, \$3K
- 2006-2007 “Are new neurons required for improved cognitive performance following aerobic exercise training?” Center for Healthy Minds, UIUC, seed grant. \$15K
- 2010 “A common ground biomarker of mental health for translation between mouse and human,” Research Board, UIUC, \$9,250
- 2014-2016 “Optical stimulus and control platform for neural circuits” Beckman Seed grant. Role: Co-investigator (Boppart PI). \$200K

2017-2018 “Origins of exercise-brain interactions” UIUC Campus Research Board, Award RB17119, \$25K

### **Symposia and Meetings Organized**

- 2009 “Adult hippocampal Neurogenesis” International Behavioural & Neural Genetics Society, Dresden, Germany.
- 2009 “Exercise and Brain Health” Winter Conference on Brain Research, Breckenridge, Co.
- 2010 “Interactions between physical activity and drug abuse” International Behavioural & Neural Genetics Society, Halifax, Canada.
- 2016 “Why Zebras Don’t Get Ulcers: Stress and Health” inaugural lecture delivered by Robert Sapolsky, Fenton-Rhodes Lectures on Proactive Wellness.

### **Invited Talks at Symposia**

- 2004 “Evaluation of a simple model of ethanol drinking to intoxication in C57BL/6J mice” International Society for Biomedical Research on Alcoholism, Heidelberg, Germany
- 2004 “Genetic hyperactivity, adult hippocampal neurogenesis, and learning” Federation of American Societies for Experimental Biology, Washington, DC.
- 2004 “Neural basis of motivation for exercise” Society for Integrative and Comparative Biology, New Orleans, LA.
- 2008 “Exercise-induced adult hippocampal neurogenesis improves spatial memory in C57BL/6J mice” Center for Healthy Minds, Sarasota, FL
- 2009 “Functional analysis of exercise-induced neurogenesis in laboratory mice” International Behavioural & Neural Genetics Society, Dresden, Germany
- 2010 “Behaviour genetics analysis in the collaborative cross” International Behavioral & Neural Genetics Society, Halifax, Canada.
- 2013 “Exercise-induced adult hippocampal neurogenesis” Research Society on Alcoholism, Orlando, FL
- 2014 “Exercise reduces inflammatory microglia in the hippocampus: role in neurogenesis and behavioral learning” American Physiological Society/American College of Sports Medicine Exercise, Miami, FL
- 2019 “Feminization of behavior, plasma sex hormone profile, gonadal histology and brain gene expression from endocrine disruption in

sexually labile anemonefish” North American Society for Comparative Endocrinology, Gainesville, FL

### **Invited Seminars**

2001	Dept. Zoology, Univ. Wisconsin-Madison, Madison, WI
2001	Wisconsin Regulation of Respiration Symposium, Madison, WI
2002	Dept. Behavioral Neuroscience, OHSU, Portland, OR
2003	Dept. Behavioral Neuroscience, OHSU, Portland, OR
2005	Dept. Psychology, SUNY-Binghamton, Binghamton, NY
2005	Dept. Psychology, UIUC, Champaign, IL
2005	Dept. Animal Biology, UIUC, Urbana, IL
2005	Dept. Pharmacology & Toxicology, Virginia Commonwealth Univ, Richmond, VA
2006	Neuroscience Program, UIUC, Urbana, IL
2006	Dept. Kinesiology, UIUC, Urbana, IL
2007	Dept. Animal Sciences, UIUC, Urbana, IL
2007	Dept Cell Biology, Loyola University Chicago, IL
2008-2012	Annual Illinois Summer Neuroscience Institute, Urbana, IL
2008	Waggoner Center for Alcohol and Addiction Research, Univ Texas, Austin, TX
2009	Neuroscience Program, Univ. Colorado at Boulder, CO
2009	Institute for Behavioral Genetics, Univ. Colorado at Boulder, CO
2009	Department of Psychology, IUPUI, Indianapolis, IN
2010, 2011	Short Course on the Genetics of Addiction, The Jackson Laboratory, Bar Harbor, ME
2011	Directors Seminar, Beckman Institute, UIUC, Urbana, IL
2012	Brain and Cognition division, Department of Psychology, UIUC
2013	Division of Nutritional Sciences, UIUC
2014	National Institute on Aging, Baltimore, MD
2017	Dept. of Nutrition & Exercise Physiology, University of Missouri
2019	Neuroscience Program, University of Chicago
2021	NeuroSports conference, Deerfield Beach, FL
2022	Neuroscience Program, UC Riverside, CA
2022	GenBioPac, zoom, contact: Tim Lightfoot
2023	Wesleyan University, CN

### **Contributed Presentations**

1995	Gilbert Ichthyological Society, Eatonville, WA
1995	American Society Ichthyologists & Herpetologists, Edmonton, CA
1997	Pacific Ecology Conference, Victoria, CA
1997	American Society Ichthyologists & Herpetologists, Seattle, WA
1999	Society for Integrative and Comparative Biology, Denver, CO
1999	Society for the Study of Evolution, Madison, WI
1999	American College of Sports Medicine, Seattle, WA
2000	The American Physiological Society, San Diego, CA
2001	Society for Integrative and Comparative Biology, Chicago, IL
2001	Fed. of Am. Societies for Experimental Biology, Orlando, FL

2001	Society for Neuroscience, San Diego, CA
2002	Society for Integrative and Comparative Biology, Anaheim, CA
2003	International Behav. Neural Genetics Society, New Orleans, LA
2004	Vanderbilt Summer Conferences, Nashville, TN
2004	Society for Neuroscience, San Diego, CA
2004	Society for Integrative and Comparative Biology, San Diego, CA
2005	Society for Neuroscience, Washington, DC
2006	Gordon Conferences, Genes and Behavior, Ventura, CA
2006	Society for Neuroscience, Atlanta, GA
2007	Society for Neuroscience, San Diego, CA
2008	Gordon Conferences, Genes and Behavior, Barga, Italy
2008	International Behav. Neural Genetics Society, Portland, OR
2008	Society for Neuroscience, Washington DC
2009	International Behav. Neural Genetics Society, Dresden Germany
2009	Society for Neuroscience, Chicago, IL
2010	International Behav. Neural Genetics Society, Halifax, Canada
2010	Society for Neuroscience, San Diego, CA
2011	International Behav. Neural Genetics Society, Rome, Italy
2011	Psychoneuroimmunology Research Society, Chicago, IL
2011	Society for Neuroscience, San Diego, CA
2012	International Behav. Neural Genetics Society, Boulder, Co
2012	Society for Neuroscience, New Orleans, LA
2013	International Behav. Neural Genetics Society, Leuven, Belgium
2013	Society for Neuroscience, San Diego, CA
2014	International Behav. Neural Genetics Society, Chicago, IL
2014	Research Society on Alcoholism, Bellevue, WA
2014	Experimental Biology, San Diego, CA
2014	Society for Neuroscience, Washington D.C.
2015	International Behav. Neural Genetics Society, Uppsala, Sweeden
2015	Research Society on Alcoholism, San Antonio, TX
2015	Experimental Biology, Boston, MA
2015	Society for Neuroscience, Chicago, IL
2016	Experimental Biology, San Diego, CA
2017	Society for Neuroscience, Washington D.C.
2019	North American Society for Comparative Endocrinology, Gainesville, FL
2019	Society for Neuroscience, Chicago, IL
2023	Society for Neuroscience, Washington D.C.

### Postdoctoral Fellows

**Rachel Kohman**, 2009-2012, NIH K99/R00 award, currently Professor and Head of the Department of Psychology at the University of North Carolina, Wilmington.

**Gillian Hamilton**, 2013-2017, Beckman Institute fellow, NIH NRSA individual Fellowship (F32 award), currently Science writer for the Houston Methodist Research Institute

**Samuel Perez**, 2013-2016, currently tenure track Assistant Professor in the Department of Biology and Chemistry at Washington Adventist University, in Washington, D.C.

**Jonathan Mun**, 2014-2016, currently Senior Nutrition Scientist at Pharmavite in Los Angeles, CA.

**Catarina Rendeiro**, 2014-2017, Center for Nutrition, Learning and Memory fellow, currently Lecturer at Birmingham University, UK.

## **Graduate Students**

**Jonathan Zombeck**, Neuroscience (Ph.D.), 2006-2010, Neuroscience Fellowship; currently employed by Technology Licensing Office, MIT, Boston, MA

**Peter Clark**, Psychology (Ph.D.), 2006-2011, Center for Healthy Minds grant, \$5000; currently Assistant Professor at Iowa State University, Department of Food Science and Human Nutrition

**Martina Mustroph**, Neuroscience (MD/PhD), 2009-2014, Neuroscience Fellowship, Beckman Fellowship, NIH NRSA individual Fellowship (F30 award); currently neurosurgery resident at Harvard Medical School

**Jonathan Mun**, Division of Nutritional Sciences (Ph.D.), 2013-2014; currently Senior Nutrition Scientist at Pharmavite in Los Angeles, CA.

**Petra Majdak**, Neuroscience (MD/PhD), 2011-2016; currently in residency program in anesthesiology at Harvard.

**Kristy Du**, Division of Nutritional Sciences (Ph.D.), 2013-2017; currently nutritional scientist at Pepsi company

**Ross DeAngelis**, Program in Ecology, Evolution, and Conservation Biology (Ph.D.), 2014-2018, postdoc with Hans Hofmann, U Texas, Austin. Monica Fabiani and Gabriele Gratton's lab

**Ed Clint**, Neuroscience (Ph.D.), 2018-2022, Assistant Professor at Oregon Institute of Technology, Klamath Falls, Oregon

**Coltan Parker**, Neuroscience (Ph.D.), 2018-2022, currently postdoc with Scott Juntti at University of Maryland.

**Meghan Connolly**, Neuroscience (Ph.D.), 2022-present.

## Final Exam committee

Jason Ebaugh, Neuroscience  
Amy Richwine, Animal Sciences  
James Lee, Neuroscience  
Seth Ament, Neuroscience  
Laura Chaddock, Psychology  
Molly Kent, Neuroscience  
Heather Huntsman, Kinesiology  
Sophia Liang, Neuroscience  
Sarah Dowd, Chemistry  
Chen Fu, Neuroscience



Marcus Lawson, Neuroscience  
Harry Rosenberg, Neuroscience  
Itamar Livnat, Neuroscience  
Al Towers, Division of Nutritional Sciences  
Kevin Ambrose Stebbings, Neuroscience  
Christopher Seward, Developmental and Cell Biology

Preliminary

Exam committee

Emily Venheim, Psychology  
Annie Weisner, Neuroscience

Qualifying

Exam committee

Chris Whalen, Neuroscience  
Shuo Kang, Neuroscience  
Jim Monti, Psychology  
Lindsey Hammerslag, Psychology  
Mariam Bonyadi, Neuroscience  
Connor Courtney, Neuroscience  
Natasha Y Mazumdar, Anthropology

Diagnostic  
committee

Benjamin Zimmerman, Neuroscience  
Tae-Jin Kim, Neuroscience  
Sook-Eun Park, Neuroscience  
Chelsea Wong, Neuroscience  
Laura Moody, Division of Nutritional Sciences  
Zoë A. MacDowell Kaswan, Neuroscience  
Coltan Gable Parker, Neuroscience  
Taylor Jorgensen  
Muxiao Wang  
Meghan Connolly  
Usan Dan

**Visiting students**

Christine Venghaus, UIUC Vet student, summer rotation, 2010  
Lindsey Peterson, UIUC Vet student, summer rotation, 2011  
Anne Wyer, UIUC Vet student, summer rotation, 2012  
Gabrielle Hofmann, UIUC Vet student, summer rotation, 2014  
Danielle Marie Engel UIUC Vet student, summer rotation, 2016  
Elisabeth Bacon, UIUC Vet student, summer rotation, 2020  
Monica Lee Shotwell, UIUC Vet student, summer rotation, 2023

**Undergraduate Students**

Neil Kamdar, 2005-2007  
Rishi Bhayana, 2005-2007

Yaqoob Syed, 2005-2008  
Tripta Gupta, 2005-2008  
Samantha Miller, 2005-2008  
Guan-Ting Chen, 2006-2007  
Cannie Yu Sze-To, 2006-2007  
Adam Craig, 2006-2007  
David Rosenberg, 2006-2007, currently MD student.  
Zack Johnson, 2007-2009, “Neuroanatomical specificity of brain activation elicited by contextual cues paired with cocaine versus lithium chloride in male outbred Hsd:ICR mice”, currently postdoc at Georgia Tech.  
Andrew Revis, 2007-2009  
Erik Haferkamp, 2007-2010  
Michael DeMeyer, 2007-2008  
Kellen Cohn, 2007-2008  
Keven Patel, 2007-2008  
Mallory Burdick, 2007-2009  
Bryana Close, 2007-2008  
Daniel Miller, 2007-2010, “Evaluation of a C57BL/6J x 129S1/SvImJ hybrid nestin-thymidine kinase transgenic mouse model for studying the functional significance of exercise-induced adult hippocampal neurogenesis,” Tritsch award, currently PhD student at OHSU.  
David Krone, 2007-2010  
Brian Clague, 2007-2008  
Dominic Hahn, 2008-2009  
Kris Deters, 2008-2010  
Emily Dabe, 2008-2011, “The Effects of d-amphetamine on the survival of new neurons in the hippocampus”, currently PhD student at U. Florida Gainesville  
Amber Duarrani, 2008-2009  
David Sohn, 2008-2011  
Sean Swearingen, 2009-2010, “Differential acute locomotor stimulation from cocaine in adolescent versus adult mice across 4 divergent strains of mice.”  
Sarah Ludmer, 2009-2010  
Peter Fernandez, 2009-2010  
Tushar Bhattacharya, 2009-2010  
Molly Odum, 2009-2011  
Erica Lopata, 2009-2010  
Derrick Stobaugh, 2010  
Stephanie Treece, 2010  
Zachary Bulwa, 2010-2011  
Jordy Sharlin, 2010-2011  
Elzbieta Wojcik, 2010-2012  
Anna Ros, 2010-2012  
Cindy Alkass, 2010  
Dylan Calewarts, 2010  
Heeyoon Kim, 2010 - 2011  
Thomas Romanow, 2010  
Sarah Sciortino, 2010

Sonal Patel, 2010  
Aya Kobeissi, 2010-2014  
Charlie Swanson, 2010-2013  
Chessa Kilby, 2010-2012  
Lisa Lauderdale, 2010-2011  
Mruga Nanavati, 2010  
Shalin Desai, 2010-2012  
Shannon Stanis, 2010-2011  
Shi Chen, 2010-2012  
Ed Clint, 2010-2012, “Male superiority in spatial navigation, adaptation or side effect”, Tritsch award, currently PhD student at UCLA  
Courtney Yaeger, 2011-2014, “Blockade of arginine vasotocin signaling reduces aggressive behavior and c-Fos expression in the preoptic area and periventricular nucleus of the posterior tuberculum in male *Amphirion ocellaris*” Neuroscience 267:205-18.  
Jill Anne Nakayama, 2011  
Josh Lim, 2011-2012  
Adam Cobert, 2012-2015, “Development of a mouse model of chemobrain for nutritional intervention”, currently PhD student at UC Davis  
Ashley Holloway, 2012-2014, “Abolishment of conditioned place preference for cocaine as a result of voluntary wheel running is independent of new neurons”  
Christopher Krebs, 2012-2015, “The functional significance of neurogenesis in a mouse model of fetal alcohol spectrum disorder”  
Elizabeth Abushevitz, 2012-2014  
Heinrich Pinaro, 2012-2015, currently MD student at Boston University  
Robert Holland, 2012-2014  
Jacynl Hastings, 2011-2012  
Jennifer Merritt, 2012-2014, “Genetic variation in exercise-induced hippocampal neurogenesis and learning”, currently PhD student at Emory  
Ashley Masnik, 2012-2014, “Fructose decreases physical activity and increases body fat without affecting hippocampal neurogenesis and learning relative to an isocaloric glucose diet”  
Ashley Holloway, 2012-2014, Ashley worked in the Wainwright lab at Ann and Robert H. Lurie Children's Hospital, associated with Northwestern University, as a research associate in neurology until September 2017 when she started as a graduate student in Neuroscience at Northwestern University  
Paula Bucko, 2012-2014, “Impact of exercise on hippocampal adult neurogenesis and learning following either a single or binge exposure to alcohol during neonatal development”, currently PhD student at U. Washington  
Peter Wingard, 2012-2014  
Natalia Sopiarcz, 2012-2013  
Michael Kozak, 2013-2014  
Brent Panozzo, 2013-2015, “Effects of d-amphetamine on regional neural activation in a mouse model of genetic hyperactivity”  
Victoria Cross, 2013-2014  
Paul Kozak, 2013-2015, currently MD student at Midwestern

Andrew Sheriff, 2013-2015, “Chemotherapy impairs cognitive performance and reduces neurogenesis in mice, independent of nutritional intervention,” currently PhD student at U. Chicago

Madison Barker, 2013-2016, “Novel mouse model for studying the functions of new neurons,” currently PhD student at U. North Carolina

Ivy Hernandez, 2013-2015, “Neonatal alcohol exposure decreases parvalbumin expressing GABAergic interneurons in the medial prefrontal cortex”

Kevin Jorgensen, 2013-2015

Elizabeth Grogan, 2013-2016, “Evaluating the effect of environment vs genetics on development of hyperactivity in a novel mouse model of ADHD”

Joseph Gogola, 2014-2016, currently PhD student at U. Chicago

Stephen Tse, 2014-2016

Logan Dodd, 2015-2017, “Sex differences in cytoarchitecture of the peroptic area in *Amphiprion ocellaris*”

Anastassia Sorokina, 2015-2018, Tritsch award, “Striatal transcriptome of a mouse model of ADHD reveals a pattern of synaptic remodeling”

Amanda Snyder, 2015-2017

Clara Stezowski, 2015-2017

Dominca Lange, 2016-2018

Sailee Karmarkar, 2017-2018

Achint Kaur, 2018

Pragya Thaman, 2015-2019

Supriya Bhuvanagiri, 2017-2019

Marcellus Tseng, 2017-2019

Elizabeth Phillips, 2017-2019

Ewelina Nowak, 2017-2019

Lotanna Ezenekwe, 2018

Sumeet Sunil Thosar, 2018

Kendra Diane Zwonitzer, 2018-2019

Joey Ramp, 2017-2019

Jose Antonio Gonzalez Abreu, 2018-2020

Wendy Yang, 2018-2020

Sanjana Venkataraman, 2018-2021

Joanne Seungwon Lee, 2019-2021

Abigail Renee Histed, 2019-2022

Sarah Emily Craig, 2019-2022

Shiping Li, 2020-2021

Veronica Pronitcheva, 2020-2021

Emma Ibanez, 2020-2022

Prithika Ravi, 2021-present

Leah Malan, 2021-2023

Gabriel Graham, 2022-present

Malaika Mathan, 2022-2023

Meher Swamy, 2022-2023

Emily Panczyk, 2023- present

Isabella Marie Wilton, 2024- present

Ryan Robert Adolph, 2024- present

### Summer Research Opportunities Program

Marina Martinez, 2007  
Lauren Jeffries, 2008  
Phillip Luu, 2009  
Ashley Walker, 2009

### **Courses Taught**

PSYC 302	Applied Neuroscience, 2017-present
PSYC/NEUR 433	Evolutionary Neuroscience, Fall 06- present
NEUR 598	Neuroscience I and II, Fall and Spring, 2015-2020
PSYC 593	Analysis of your messy data, Spring 2016
PSYC 398, 498, 493	Honors Seminar in Psychology, Spring 2010, Fall and Spring 2011
PSYC 492	Capstone Seminar in Psychology, Fall 2013, Spring 2014
PSYC 510	Advances in Psychobiology, Spring 06- Spring 16
PSYC 311	Techniques of Biological Psychology, Fall 06-08
PSYC 210	Behavioral Neuroscience, 06-16
PSYC 270	Health Psychology, Fall 04, Lewis & Clark College

### **National and International Service**

Interim Associate Editor, *Brain, Behavior and Immunity*, 2012-2013  
Editorial board, *Brain, Behavior and Immunity*, 2012-present  
Elected Member at Large, International Behavioural and Neural Genetics Society, 2011- 2014  
Reviewer, NIH Special Emphasis panel ZRG1 BDCN-W (03), 2012  
Reviewer, NIH Molecular Neurogenetics study section, ad hoc, 2010-2011  
Reviewer, NIH Neurogenesis and Cell Fate study section, mail in review, 2011  
Reviewer, NIH RC1 Challenge Grants, 2009  
Reviewer, NIH Behavioral Neuroscience Fellowship panel, 2014  
Reviewer, NIH Neurobiology of Motivated Behavior study section, 2015  
Reviewer, NIH Neurobiology of Learning and Memory study section, 2016  
Reviewer, NIH US-China collaborative biomedical research, BDCN N 51, 2016  
Reviewer, NIH Biobehavioral Regulation, Learning and Ethology study section, 2016  
Reviewer, NIH Genetics of Health and Disease Study Section, 2018, 2019  
Reviewer, NIH Mitochondrial Function and Neurodegeneration, 2019  
Reviewer, NIH Biobehavioral Regulation, Learning and Ethology, 2020  
Reviewer, NIH Transition to Aging (F99/K00) Special Emphasis Panel, 2021  
Reviewer, Grant proposal, National Science Centre, Poland, 2021  
Reviewer, NIH Director's Transformative Research Award, 2022  
Reviewer, NIH, NIH Transition to Aging (F99/K00) Special Emphasis Panel, 2022  
Reviewer, NIH, NIH Transition to Aging (F99/K00) Special Emphasis Panel, 2023  
Reviewer, NIH, NIH Transition to Aging (F99/K00) Special Emphasis Panel, 2024

Ad hoc Reviewer, *Nature Neuroscience*, *Proceedings of the National Academy of Sciences USA*, *Journal of Neuroscience*, *Biological Psychiatry*, *Journal of*

*Evolutionary Biology, Scientific Reports, Genes, Brain & Behavior, Psychopharmacology, Neuron, European Journal of Neuroscience, Journal of Pharmacology and Experimental Therapeutics, Neuroscience and Biobehavioral Reviews, Journal of Neuroendocrinology, Hormones & Behavior, Neuroscience Letters, Journal of Comparative Physiology, Physiological and Biochemical Zoology, Physiology & Behavior, Alcoholism: Clinical and Experimental Research, Brain, Behavior and Immunity, Pharmacology Biochemistry and Behavior, Learning and Motivation, Canadian Journal of Fisheries and Aquatic Sciences,*

### **Professional Affiliations**

Research Society on Alcoholism  
International Behavioural and Neural Genetics Society  
Society for Neuroscience (active)  
Society for Integrative and Comparative Biology  
Faculty for Undergraduate Neuroscience

### **University Service**

Graduate Admissions Committee, Psychology, 06-10  
Neuroscience Admissions Committee, 07  
Senate, 07-09  
Undergraduate Studies Committee, 08, 09, 10,17,18  
Evaluation committee for potential hire, Roberto Galvez, 08  
Beckman Institute Media Advisory Board, 10  
Beckman Institute Erik Haferkamp Memorial Fund, 10-18  
Beckman Institute Graduate and Postdoctoral Fellowships Committee, 11-17  
Campus General Education Board, 12-15  
Neuroscience Program Executive Committee, 2014-present  
Biotechnology Center Faculty Advisory Committee, 2015-present

### **Public Outreach**

#### Research featured in instructional videos:

*Not Finding Nemo: Clownfish in the Lab and the Wild (Emmy award winner)*

*Why Clownfish are #1 Dads*

*60 Second Science: Justin Rhodes on Studying Mice and Clownfish*

*Clownfish Sex Tape*

*Why Men Are Better Navigators Than Women*

*Explaining Evolutionary Adaptations and Side Effects: The Spandrels of San Marco*

*Why Men Are Better Navigators Than Women: Adaptation or Testosterone Side Effect? (Emmy award winner)*

*Sex-Changing Clownfish*

*Investigating Sex-Changing Clownfish*

#### Huffington Post online articles:

*Orgasms Are Like Nipples, They Are Functional in One Sex and Inherited in the Other*

*Calorie for Calorie, Fructose Packs On More Pounds*

*Naturally Occurring Sex Change and the Rise of the Alpha Female*

## *How Exercise Boosts Memory*

### **Publications**

#### Peer reviewed papers

1. Rhodes J.S., Quinn T.P. 1998. Factors affecting the outcome of territorial contests between hatchery and naturally reared coho salmon parr in the laboratory. *Journal of Fish Biology* 53:1220-1230.
2. Rhodes J.S., Quinn T.P. 1999. Comparative performance of genetically similar hatchery and naturally reared juvenile coho salmon in streams. *North American Journal of Fisheries Management* 19:670-677.
3. Rhodes J.S., Koteja P., Swallow J.G., Carter P.A., Garland T., Jr. 2000. Body temperatures of house mice artificially selected for high voluntary wheel-running behavior: repeatability and effect of genetic selection. *Journal of Thermal Biology* 25:391-400. PMID 10838179
4. Girard I., McAleer M.W., Rhodes J.S., Garland T., Jr. 2001. Selection for high voluntary wheel-running increases speed and intermittency in house mice (*Mus domesticus*). *Journal of Experimental Biology* 204:4311-4320. PMID 11815655
5. Dumke C.L., Rhodes J.S., Garland T., Jr., Maslowski E., Swallow J.G., Wetter A.C., Cartee G.D. 2001. Genetic selection of mice for high voluntary wheel running: effect on skeletal muscle glucose uptake. *Journal of Applied Physiology* 91:1289-1297. PMID 11509528
6. Bronikowski A.M., Carter P.A., Swallow J.G., Girard I.A., Rhodes J.S., Garland T., Jr. (2001) Open-field behavior of house mice selectively bred for high voluntary wheel-running. *Behavior Genetics* 31:309-316. PMID 11699603
7. Rhodes J.S., Hosack G.R., Girard I., Kelley A.E., Mitchell G.S., Garland T., Jr. 2001. Differential sensitivity to acute administration of cocaine, GBR 12909, and fluoxetine in mice selectively bred for hyperactive wheel-running behavior. *Psychopharmacology* 158:120-131. PMID 11702085
8. Girard I., Swallow J.G., Carter P.A., Koteja P., Rhodes J.S., Garland T., Jr. 2002. Maternal-care behavior and life-history traits in house mice (*Mus domesticus*) artificially selected for high voluntary wheel-running activity. *Behavioural Processes* 57:37-50. PMID 11864774
9. Garland T., Jr., Morgan M.T., Swallow J.G., Rhodes J.S., Girard I., Belter J.G., Carter P.A. 2002. Evolution of a small-muscle polymorphism in lines of house mice selected for high activity levels. *Evolution* 56:1267-1275. PMID 12144025
10. Crabbe J.C., Cotnam C.J., Cameron A.J., Schlumbohm J.P., Rhodes J.S., Metten P., Wahlsten D. 2003. Strain differences in three measures of ethanol intoxication in mice: the screen, dowel, and grip strength tests. *Genes, Brain and Behavior* 2:201-213. PMID 12953786
11. Gammie S.C., Hasen N.S., Rhodes J.S., Girard I., Garland T., Jr. 2003. Predatory aggression, but not maternal or intermale aggression, is associated with high voluntary wheel-running behavior in mice. *Hormones and Behavior* 44:209-221. PMID 14609543

12. Johnson R.A., Rhodes J.S., Jeffrey S.L., Garland T., Jr., Mitchell G.S. 2003. Hippocampal brain-derived neurotrophic factor but not neurotrophin-3 increases more in mice selected for increased voluntary wheel running. *Neuroscience* 121:1-7. PMID 12946694
13. Rhodes J.S., Garland T., Jr. 2003. Differential sensitivity to acute administration of Ritalin, apomorphine, SCH 23390, but not raclopride in mice selectively bred for hyperactive wheel-running behavior. *Psychopharmacology* 167:242-250. PMID 12669177
14. Rhodes J.S., Garland T., Jr., Gammie S.C. 2003. Patterns of brain activity associated with variation in voluntary wheel-running behavior. *Behavioral Neuroscience* 117:1243-1256. PMID 14674844
15. Rhodes J.S., van Praag H., Jeffrey S., Girard I., Mitchell G.S., Garland T., Jr., Gage F.H. 2003. Exercise increases hippocampal neurogenesis to high levels but does not improve spatial learning in mice bred for increased voluntary wheel running. *Behavioral Neuroscience* 117:1006–1016. PMID 14570550
16. Gammie S.C., Negron A., Newman S.M., Rhodes J.S. 2004. Corticotropin-releasing factor inhibits maternal aggression in mice. *Behavioral Neuroscience* 118:805-814. PMID 15301606
17. Bronikowski A.M., Rhodes J.S., Garland T., Jr., Prolla T.A., Awad T., Gammie S.C. 2004. The hippocampal gene expression profile of mice selectively bred for increased voluntary exercise. *Evolution* 58:2079-2086. PMID 15521463
18. Li G., Rhodes J.S., Girard I., Gammie S.C., Garland T., Jr. 2004. Opioid-mediated pain sensitivity in mice bred for high wheel running. *Physiology & Behavior* 83:515-524. PMID 15581674
19. Swallow J.G., Rhodes J.S., Garland T., Jr. 2005. Phenotypic and evolutionary plasticity of organ masses in response to voluntary exercise in house mice. *Integrative and Comparative Biology* 45:426-437.
20. Rhodes J.S., Best K., Belknap J.K., Finn D.A., Crabbe J.C. 2005. Evaluation of a simple model of ethanol drinking to intoxication in C57BL/6J mice. *Physiology & Behavior* 84:53-63. PMID 15642607
21. Rhodes J.S., Ryabinin A.E., Crabbe J.C. 2005. Patterns of brain activation associated with contextual conditioning to methamphetamine in mice. *Behavioral Neuroscience* 119:759-771. PMID 15998197
22. Blednov Y.A., Metten P., Finn D.A., Rhodes J.S., Bergeson S.E., Harris R.A., Crabbe J.C. 2005. Hybrid C57BL/6J x FVB/NJ mice drink more alcohol than do C57BL/6J mice. *Alcoholism: Clinical and Experimental Research* 29:1949-1958. PMID 16340451
23. Krugner-Higby L., Girard I., Welter J., Gendron A., Rhodes J.S., Garland T., Jr. 2006. Clostridial enteropathy in lactating out bred Swiss-derived (ICR) mice. *Journal of the American Association for Laboratory Animal Science* 45: 80-87. PMID 17089998
24. Rhodes, J.S., Ford, M.M., Yu, C.H., Brown, L.L., Finn, D.A., Garland, T., Jr., and Crabbe, J.C. 2007. Mouse inbred strain differences in ethanol drinking to intoxication. *Genes, Brain & Behavior* 6:1-18. PMID 17233637



25. Kamdar N.K., Miller S.A., Syed Y.M., Bhayana R., Gupta T., Rhodes J.S. 2007. Acute effects of Naltrexone and GBR 12909 on ethanol drinking-in-the-dark in C57BL/6J mice. *Psychopharmacology* 192: 207-217. PMID 17273875
26. Zombeck J.A., Chen G., Johnson Z.V., Rosenberg D.M., Craig A.B., Rhodes J.S. 2008. Neuroanatomical specificity of conditioned responses to cocaine versus food in mice. *Physiology & Behavior* 93: 637-650. PMID 18155256
27. Clark P.J., Brzezinska W.J., Thomas M.W., Ryzhenko N.A., Toshkov S.A., Rhodes J.S. 2008. Intact neurogenesis is required for benefits of exercise on spatial memory but not motor performance or contextual fear conditioning in C57BL/6J mice. *Neuroscience* 155: 1048-58. PMID 18664375
28. Gupta T., Syed Y.M., Revis A.A., Miller S.A., Martinez M., Cohn K.A., Demeyer M.R., Patel K.Y., Brzezinska W.J., Rhodes J.S. 2008. Acute effects of acamprosate and MPEP on ethanol Drinking-in-the-Dark in male C57BL/6J mice. *Alcoholism: Clinical and Experimental Research* 32: 1992-1998. PMID 18782337
29. Zombeck J.A., Gupta T., Rhodes J.S. 2009. Evaluation of a pharmacokinetic hypothesis for reduced locomotor stimulation from methamphetamine and cocaine in adolescent versus adult male C57BL/6J mice. *Psychopharmacology* 201: 589-599. PMID 18797848
30. Clark P.J., Brzezinska W.J., Puchalski E.K., Krone D.A., Rhodes J.S. 2009. Functional analysis of neurovascular adaptations to exercise in the dentate gyrus of young adult mice associated with cognitive gain. *Hippocampus*. 19: 937-950. PMID 19132736
31. Crabbe J.C., Metten P., Rhodes J.S., Yu C.H., Brown L.L., Phillips T.J., Finn D.A. 2009. A line of mice selected for drinking in the dark to intoxication. *Biological Psychiatry*. 65: 662-670. PMID 19095222
32. Zombeck J.A., Lewicki A.D., Patel K., Gupta T., Rhodes J.S. 2009. Patterns of neural activity associated with differential acute locomotor stimulation to cocaine and methamphetamine in adolescent versus adult male C57BL/6J mice. *Neuroscience*. 165: 1087-99. PMID 19932887
33. Johnson Z.V., Revis A.A., Burdick M.A., Rhodes J.S. 2010. A similar pattern of neuronal Fos activation in 10 brain regions following exposure to reward- or aversion-associated contextual cues in mice. *Physiology & Behavior*. 99: 412-418. PMID 20026143
34. Clark P.J., Kohman R.A., Miller D.S., Bhattacharya T.K., Haferkamp E.H., Rhodes J.S. 2010. Adult hippocampal neurogenesis and c-Fos induction during escalation of voluntary wheel running in C57BL/6J mice. *Behavioral Brain Research*. 213: 246-252. PMID 20472002
35. Zombeck J.A., Swearingen S.P., Rhodes J.S. 2010. Acute locomotor responses to cocaine in adolescents versus adults from 4 divergent inbred mouse strains. *Genes, Brain and Behavior*. 9: 892-898. PMID 20662938
36. Mulligan M.K., Rhodes J.S., Crabbe, J.C., Mayfield, R.D., Harris, R.A., Ponomarev, I. 2011. Molecular profiles of drinking alcohol to intoxication in C57BL/6J mice. *Alcoholism: Clinical and Experimental Research*. 35: 659-70. PMID 21223303
37. Zombeck J.A., DeYoung E., Brzezinska W.J., Rhodes J.S. 2011. Selective breeding for increased home cage physical activity in Collaborative Cross and Hsd:ICR mice. *Behavior Genetics*. 41: 571-82. PMID 21184167

38. Clark P.J., Kohman R.A., Miller D.S., Bhattacharya T.K., Brzezinska W.J., Rhodes J.S. 2011. Genetic influences on exercise-induced adult hippocampal neurogenesis across 12 divergent mouse strains. *Genes, Brain and Behavior*. 10: 345-53. PMID 21223504
39. Clark P.J., Bhattacharya T.K., Miller D.S., Rhodes J.S. 2011. Induction of c-Fos, Zif268, and Arc from acute bouts of voluntary wheel running in new and pre-existing adult mouse hippocampal granule neurons. *Neuroscience*. 184: 16-27. PMID 21497182
40. Bulwa Z.B., Sharlin J.A., Clark P.J., Bhattacharya T.K., Kilby C.N., Wang Y., Rhodes J.S. 2011. Increased consumption of ethanol and sugar water in mice lacking the dopamine D2 long receptor. *Alcohol*. 45: 631-639. PMID 21803530
41. Kohman R.A., Rodriguez-Zas S.L., Kelley K.W., Dantzer R., Rhodes J.S. 2011. Voluntary wheel running reverses age-induced changes in hippocampal gene expression. *PLoS ONE*. 6: e22654. PMID 21857943
42. Mustroph M.L., Stobaugh D.J., Miller D.S., DeYoung E. K., Rhodes J.S. 2011. Wheel running can accelerate or delay extinction of conditioned place preference for cocaine in male C57BL/6J mice depending on timing of wheel access. *European Journal of Neuroscience*. 34: 1161-9. PMID 21864322
43. Kohman R.A., Clark P.J., DeYoung E.K., Bhattacharya T.K., Venghaus C.E., Rhodes J.S. 2011. Voluntary wheel running enhances contextual but not trace fear conditioning. *Behavioural Brain Research*. 226: 1-7. PMID 21896289
44. Kohman R.A., DeYoung E.K., Bhattacharya T.K., Peterson L.N., Rhodes J.S. 2012. Wheel running attenuates microglia proliferation and increases expression of a proneurogenic phenotype in the hippocampus of aged mice. *Brain, Behavior, and Immunity*. 26: 803-810.
45. Clark P.J., Bhattacharya T.K., Miller D.S., Kohman R.A., DeYoung E.K., Rhodes, J.S. 2012. New neurons generated from running are broadly recruited into neuronal activation associated with three different hippocampus-involved tasks. *Hippocampus*. 22(9):1860-7.
46. Clint E.K., Sober E., Garland T.J., and Rhodes J.S., 2012. Male superiority in spatial navigation: adaptation or side effect? *Quarterly Review of Biology*. 87(4): 289-313.
47. Mustroph M.L., Chen S., Desai S.C., Cay E.B., DeYoung E.K., Rhodes J.S. 2012. Aerobic exercise is the critical variable in an enriched environment that increases hippocampal neurogenesis and water maze learning in male C57BL/6J mice. *Neuroscience*. 219:62-71.
48. Dabe E.C., Majdak P., Bhattacharya T.K., Miller D.S., Rhodes J.S. 2013. Chronic d-amphetamine administered from childhood to adulthood dose-dependently increases the survival of new neurons in the hippocampus of male C57BL/6J mice. *Neuroscience*. 231: 125-135.
49. Kohman R.A., Bhattacharya T.K., Kilby C., Bucko P., Rhodes J.S. 2013. Effects of minocycline on spatial learning, hippocampal neurogenesis and microglia in aged and adult mice. *Behavioural Brain Research*. 242: 17-24.
50. Kohman R.A., Bhattacharya T.K., Wojcik E., Rhodes J.S. 2013. Exercise reduces activation of microglia isolated from hippocampus and brain of aged mice. *Journal of neuroinflammation* 10:114.

51. Kelly S.A., Rezende E.L., Chappell M.A., Gomes F.R., Kolb E.M., Malisch J.L., Rhodes J.S., Mitchell G.S., Garland T., Jr. 2014. Exercise training effects on hypoxic and hypercapnic ventilatory responses in mice selected for increased voluntary wheel running. *Experimental Physiology* 99: 403-413.
52. Yaeger C., Ros A.M., Cross V., DeAngelis R.S., Stobaugh D.J., Rhodes J.S. 2014. Blockade of arginine vasotocin signaling reduces aggressive behavior and c-Fos expression in the preoptic area and periventricular nucleus of the posterior tuberculum in male *Amphiprion ocellaris*. *Neuroscience* 267:205-218.
53. Gibbons T.E., Pence B.D., Petr G., Ossyra J.M., Mach H.C., Bhattacharya T.K., Perez S., Martin S.A., McCusker R.H., Kelley K.W., Rhodes J.S., Johnson R.W., Woods J.A. 2014. Voluntary wheel running, but not a diet containing (-)-epigallocatechin-3-gallate and beta-alanine, improves learning, memory and hippocampal neurogenesis in aged mice. *Behavioural Brain Research* 272C:131-140.
54. Majdak P., Bucko P.J., Holloway A.L., Bhattacharya T.K., DeYoung E.K., Kilby C.N., Zombeck J.A., Rhodes J.S. 2014. Behavioral and pharmacological evaluation of a selectively bred mouse model of home cage hyperactivity. *Behavior Genetics* 44:516-534.
55. Conrad M.S., Harasim H., Rhodes J.S., Van Alstine W., Johnson R.W. 2015. Postnatal respiratory viral infection alters hippocampal neurogenesis, cell fate, and neuron morphology in the neonatal piglet. *Brain Behavior and Immunity* 44:82-90.
56. Mustroph M.L., Merritt J.R., Holloway A.L., Pinaro H., Miller D.S., Kilby C.N., Bucko P., Wyer A., Rhodes J.S. 2015. Increased adult hippocampal neurogenesis is not necessary for wheel running to abolish conditioned place preference for cocaine in mice. *European Journal of Neuroscience* 41:216-226.
57. Merritt J., Rhodes J.S. 2015. Mouse genetic differences in voluntary wheel running, adult hippocampal neurogenesis and learning on the multi-strain-adapted plus water maze. *Behavioural Brain Research* 280:62-71.
58. Bhattacharya T.K., Pence B.D., Ossyra J.M., Gibbons T.E., Perez S., McCusker R.H., Kelley K.W., Johnson R.W., Woods J.A., Rhodes J.S. 2015. Exercise but not (-)-epigallocatechin-3-gallate or beta-alanine enhances physical fitness, brain plasticity, and behavioral performance in mice. *Physiology & behavior* 145:29-37.
59. Rendeiro C., Masnik A.M., Mun J.G., Du K., Clark D., Dilger R.N., Dilger A.C., Rhodes J.S. 2015. Fructose decreases physical activity and increases body fat without affecting hippocampal neurogenesis and learning relative to an isocaloric glucose diet. *Scientific reports* 5:9589.
60. Romanova E.V., Rubakhin S.S., Ossyra J.R., Zombeck J.A., Nosek M.R., Sweedler J.V., Rhodes J.S. (2015) Differential peptidomics assessment of strain and age differences in mice in response to acute cocaine administration. *Journal of neurochemistry* 135(5):1038-48.
61. Park, S.I., Shin, G., Banks, A., McCall, J.G., Siuda, E.R., Schmidt, M.J., Chung, H.U., Noh, K.N., Mun, J.G., Rhodes, J.S., Bruchas, M.R., and Rogers, J.A. 2015. Ultraminiaturized photovoltaic and radio frequency powered optoelectronic systems for wireless optogenetics. *Journal of Neuroengineering* 12(5):056002.
62. Pence, B.D., Gibbons, T.E., Bhattacharya, T.K., Mach, H.M., Ossyra, J.M., Petr, G., Martin, S.A., Wang, L., Rubakhin, S.S., Sweedler, J.V., McCusker, R.H., Kelley,

- K.W., Rhodes, J.S., Johnson, R.W., and Woods, J.A. 2016. Effects of exercise and dietary EGCG and B-Alanine on skeletal muscle in aged mice. *Applied Physiology, Nutrition, and Metabolism* 41:181-90.
63. Hamilton, G.F., Majdak, P., Miller, D.S., Bucko, P.J., Merritt, J.R., Krebs, C.P., and Rhodes, J.S. 2015. Evaluation of a C57BL/6J x 129S1/SvImJ hybrid nestin-thymidine kinase transgenic mouse model for studying exercise-induced adult hippocampal neurogenesis. *Brain Plasticity* 1:83-95.
64. DeAngelis R.S., Rhodes J.S. 2016. Sex differences in steroid hormones and parental effort across the breeding cycle in *Amphiprion ocellaris*. *Copeia*, 104(2):586-593.
65. Mustroph, M.L., Pinardo, H., Merritt, J.R., and Rhodes, J.S. 2016. Parameters for abolishing conditioned place preference for cocaine from running and environmental enrichment in male C57BL/6J mice. *Behavioural Brain Research* 312:366-373.
66. Majdak, P., Grogan, E.L., Gogola, J.V., Sorokina, A., Tse, S., and Rhodes, J.S. 2016. The impact of maternal neglect on genetic hyperactivity. *Behavioural Brain Research* 313:282-292
67. Rendeiro, C., Sheriff, A., Bhattacharya, T.K., Gogola, J.V., Baxter, J.H., Chen, H., Helferich, W.G., Roy, E.J., Rhodes, J.S. 2016. Long-lasting impairments in adult neurogenesis, spatial learning and memory from a standard chemotherapy regimen used to treat breast cancer. *Behavioural Brain Research*. 315:10-22.
68. Caetano-Anollés, K., Rhodes, J.S., Garland, T., Jr., Perez, S.D., Hernandez, A.G., Southey, B.R., Rodriguez-Zas, S.L. 2016. Cerebellum transcriptome of mice bred for high voluntary activity offers insights into locomotor control and reward-dependent behaviors. *Plos One*. 11:e0167095.
69. Majdak P., Ossyra J.R., Ossyra J.M., Cobert A.J., Hofmann G.C., Tse S., Panozzo B., Grogan E.L., Sorokina A., Rhodes J.S. 2016. A new mouse model of ADHD for medication development. *Scientific Reports* 6:39472.
70. Hamilton G.F., Bucko P.J., Miller D.S., DeAngelis R.S., Krebs C.P., Rhodes J.S. 2016. Behavioral deficits induced by third-trimester equivalent alcohol exposure in male C57BL/6J mice are not associated with reduced adult hippocampal neurogenesis but are still rescued with voluntary exercise. *Behavioural Brain Research* 314:96-105.
71. Saul, M., Majdak, P., Perez, S., Reilly, M., Garland. T., Jr., Rhodes J.S. 2017. High motivation for exercise is associated with altered chromatin regulators of monoamine receptor gene expression in the striatum of selectively bred mice. *Genes, brain, and behavior*. 16:328-341
72. Pence B.D., Bhattacharya T.K., Park P., Ryttych J.L., Allen J.M., Sun Y., McCusker R.H., Kelley K.W., Johnson R.W., Rhodes J.S., Woods J.A. 2017. Dose-dependent decrease in mortality with no cognitive or muscle function improvements due to dietary EGCG Supplementation in aged mice. *Applied Physiology, Nutrition, and Metabolism*. 42:495-502.
73. Perez, S.D., Du, K., Rendeiro, C., Wang, L., Qian, W., Rubakhin, S.S., Vazhappilly, R., Baxter, J.H., Sweedler, J.V., Rhodes, J.S. 2017. A unique combination of micronutrients rejuvenates cognitive performance in aged mice. *Behavioural Brain Research*. 320:97-112.

74. Du K., Markus E., Fecych M., Rhodes J.S., Beverly J.L. 2017. Satiety and memory enhancing effects of a high-protein meal depend on the source of protein. *Nutritional neuroscience*. 1-11.
75. DeAngelis R.S., Rhodes J.S. 2017. Opposite effects of nonapeptide antagonists on paternal behavior in the teleost fish *Amphiprion ocellaris*. *Hormones and Behavior*. 90:113-119.
76. Munroe M., Pincu Y., Merritt J., Cobert A., Brander R., Jensen T., Rhodes J.S., Boppart M.D. 2017 Impact of  $\beta$ -hydroxy  $\beta$ -methylbutyrate (HMB) on age-related functional deficits in mice. *Experimental Gerontology*. 87:57-66.
77. Hamilton G.F., Hernandez I.J., Krebs C.P., Bucko P.J., Rhodes J.S. 2017. Neonatal alcohol exposure reduces number of parvalbumin-positive interneurons in the medial prefrontal cortex and impairs passive avoidance acquisition in mice deficits not rescued from exercise. *Neuroscience*. 352:52-63.
78. Ujjainwala A.L., Courtney C.D., Rhoads S.G., Rhodes J.S., Christian C.A. 2017. Genetic loss of diazepam binding inhibitor in mice impairs social interest. *Genes, Brain and Behavior*. 17:e12442.
79. Huntsman H.D., Rendeiro C., Merritt J.R., Pincu Y., Cobert A., De Lisio M., Kolyvas E., Dvoretzkiy S., Dobrucki I.T., Kemkemmer R., Jensen T., Dobrucki L.W., Rhodes J.S., Boppart M.D. 2018. The impact of mechanically stimulated muscle-derived stromal cells on aged skeletal muscle. *Experimental Gerontology*. 103:35-46.
80. Davis R. D., Park H.M., Kim K., Greer J., Fellers R., LeDuc R., Romanova E., Rubakhin S., Zombeck J., Wu C., Yau P., Gao P., VanNispen A., Patrie S., Thomas P., Sweedler J.V., Rhodes J.S., Kelleher N. 2018. Top-down proteomics enables comparative analysis of brain proteoforms between mouse strains. *Analytical Chemistry*. 90(6):3802-10.
81. Rendeiro C., Rhodes, J.S. 2018. A new perspective of the hippocampus in the origin of exercise-brain interactions. *Brain Structure and Function*. 223(6): 2527–2545.
82. Munroe M., Mahmassani Z.S., Dvoretzkiy S., Miller B.F., Hamilton K.L., Rhodes J.S., Boppart M.D. 2018. Cognitive function is preserved in aged mice following long-term  $\beta$ -hydroxy  $\beta$ -methylbutyrate (HMB) supplementation. *Nutritional Neuroscience*. In press.
83. DeAngelis R., Dodd L., Snyder A., Rhodes J.S. 2018. Dynamic regulation of brain aromatase and isotocin receptor gene expression in *Amphiprion ocellaris* pairs depending on breeding status. *Hormones and Behavior* 103:62-70.
84. Sorokina A.M., Saul M., Goncalves T.M., Gogola J.V., Majdak P., Rodriguez-Zas S.L., Rhodes J.S. 2018. Striatal transcriptome of a mouse model of ADHD reveals a pattern of synaptic remodeling. *PLOS ONE*, 13(8):e0201553.
85. Zhang P., Rhodes J.S., Garland T., Jr., Perez S.D., Southey B.R., Rodriguez-Zas S.L. 2018. Brain region-dependent gene networks associated with selective breeding for increased voluntary wheel-running behavior. *PLOS ONE*, 13(8): e0201773.
86. Mailing L., Allen J., Brandt P., Rytch J., Sun Y., Bhattacharya T., Park P., Liu T., McCusker R., Swanson K., Fahey G.C., Rhodes J.S., Kelley K.W., Johnson R., Woods J. 2018. Behavioral response to fiber feeding is cohort-dependent and associated with gut microbiota composition in mice. *Behavioural Brain Research*. 359: 731-736.

87. Dowd S., Mustroph M.L., Romanova E., Southey B., Pinardo H., Rhodes J.S., Sweedler J.V. 2018. Exploring exercise- and context-induced peptide changes in mice by quantitative mass spectrometry. *ACS Omega*. 3(10): 13817-13827.
88. Ujjainwala A.L., Courtney C.D., Wojnowski N.M., Rhodes J.S., Christian C.A. 2019. Differential impacts on multiple forms of spatial and contextual memory in diazepam binding inhibitor knockout mice. *Journal of Neuroscience Research*. 97: 683-697.
89. Dodd L.D., Nowak E., Lange D., Parker C.G., DeAngelis R., Gonzalez J.A., Rhodes J.S. 2019. Active feminization of the preoptic area occurs independently of the gonads in *Amphiprion ocellaris*, *Hormones & Behavior*. 112: 65-76.
90. Du K., Markus E., Fecych M., Beverly L., Rhodes J.S., Rendeiro C. 2019. Metabolic consequences of egg white versus wheat gluten protein consumption in a rodent model, *Journal of Nutrition & Food Sciences*, 9:761.
91. Kim E.C., Patel J., Zhang J., Soh H., Rhodes, J.S., Tzingounis A., Chung H.J. 2019. Heterozygous loss of epilepsy gene *kcnq2* alters social, repetitive, and exploratory behaviors. *Genes, Brain and Behavior*, 19(1):e12599.
92. Dvoretzkiy S., Garg K., Munroe M., Pincu Y., Mahmassani Z., Coombs C., Blackwell B., Garcia G., Waterstradt G., Lee I, Drnevich J., Rhodes J.S., Boppart M.D. 2019. The Impact of Skeletal Muscle Contraction on CD146+Lin- Pericytes. *American Journal of Physiology-Cell Physiology*, 317:C1011-C1024.
93. Southey B.R., Rodriguez Zas S.L., Rhodes J.S., Sweedler J.V. 2020. Characterization of the prohormone complement in Amphiprion and related fish species integrating genome and transcriptome assemblies. *Plos One*, 15:e0228562.
94. Maclaine K.D., Stebbings K.A., Llano D.A., Rhodes J.S. 2020. Voluntary wheel running has no impact on brain and liver mitochondrial DNA copy number or mutation measures in the PolG mouse model of aging. *Plos One*, 15:e0226860.
95. DeAngelis R., Dodd L.D., Rhodes J.S. 2020. Nonapeptides mediate trade-offs in parental care strategy. *Hormones and Behavior*, 121:104717.
96. Phillips E., DeAngelis R., Gogola, J.V., Rhodes J.S. 2020. Spontaneous alloparental care of unrelated offspring by non-breeding *Amphiprion ocellaris* in absence of the biological parents *Scientific Reports*, 10:1-11.
97. Rhodes J.S., Rendeiro C., Mun J.G., Du K., Thaman P., Snyder A., Pinardo H., Drnevich J., Chandrasekaran S., Lai C., Schimpf K.J., Kuchan M.J. 2020. Brain  $\alpha$ -tocopherol concentration and stereoisomer profile alter hippocampal gene expression in weanling mice. *Journal of Nutrition*, 150:3075-3085.
98. Schmill M.P., Cadney M.D., Thompson Z., Hiramatsu L., Albuquerque R.L., McNamara M.P., Castro A.A., Kay J.C., Buenaventura D.G., Ramirez J.L., Rhodes J.S., Garland T. Jr. 2020. Conditioned place preference for cocaine and methylphenidate in female mice from lines selectively bred for high voluntary wheel-running behavior. *Genes, Brain and Behavior*, e12700.
99. Gardner J.C., Dvoretzkiy S.V., Yang Y., Venkataraman S., Lange D.A., Li S., Boppart A.L., Kim N., Rendeiro C., Boppart M.D., Rhodes J.S. 2020. Electrically stimulated hind limb muscle contractions increase adult hippocampal astroglialogenesis but not neurogenesis or behavioral performance in male C57BL/6J mice. *Scientific Reports*, 10(1), 1-13.

100. Lee K.Y., Zhu J. Cutia C.A., Christian-Hinman C.A., Rhodes J.S., Tsai N.P. 2021. Infantile spasms–linked Nedd4-2 mediates hippocampal plasticity and learning via cofilin signaling. *EMBO Reports*, 22(10), e52645.
101. Gonzalez J.A., Histed A.R., Nowak E., Lange D., Craig S.E., Parker C.G., Kaur A., Bhuvanagiri S., Kroll K.J., Martyniuk C.J., Denslow N.D., Rosenfeld C.S., Rhodes J.S. 2021. Impact of bisphenol-A and synthetic estradiol on brain, behavior, gonads and sex hormones in a sexually labile coral reef fish. *Hormones and Behavior*, 136, 105043.
102. Ramp J., Parker C.G., Rhodes J.S., and Malik P. 2021. Comment on “Service Dogs and Safety in Academic Laboratories.” *Journal of Chemical Education*. 98, 250-251.
103. Kim E.C., Zhang J, Tang A.Y., Bolton E.C., Rhodes J.S., Christian-Hinman C.A., Chung H.J. 2021. Spontaneous seizure and memory loss in mice expressing an epileptic encephalopathy variant in the calmodulin-binding domain of Kv7.2. *PNAS*, 118(51).
104. Mitchell L.J., Tettamanti V., Rhodes J.S., Marshall N.J., Cheney K.L., Cortesi F. 2021. CRISPR/Cas9-mediated generation of biallelic F0 anemonefish (*Amphiprion ocellaris*) mutants. *Plos One*, 16(12), e0261331.
105. Tracy, G. C., Wilton, A. R., Rhodes, J. S., & Chung, H. J. 2022. Heterozygous deletion of epilepsy gene *KCNQ2* has negligible effects on learning and memory. *Frontiers in Behavioral Neuroscience*, 16.
106. Parker, C.G., Lee, J.S., Histed, A.R., Craig, S.E. & Rhodes, J.S. 2022. Stable and persistent male-like behavior during male-to-female sex change in the common clownfish *Amphiprion ocellaris*. *Hormones & Behavior*, 145, 105239.
107. Parker, C. G., Craig, S. E., Histed, A. R., Lee, J. S., Ibanez, E., Pronitcheva, V., & Rhodes, J. S. 2022. New cells added to the preoptic area during sex change in the common clownfish *Amphiprion ocellaris*. *General and Comparative Endocrinology*, 114185.
108. Lee, K. Y., Rhodes, J. S., & Saif, M. T. A. 2023. Astrocyte-mediated transduction of muscle fiber contractions synchronizes hippocampal neuronal network development. *Neuroscience*, 515, 25-36.
109. Hulst, C.M., Francis, R.C., Clint, E.K, Smith, W., Sober, E.R., Garland, T., Jr., & Rhodes, J.S. 2024. Still little evidence sex differences in spatial navigation are evolutionary adaptations. *Royal Society Open Science*.
110. Mathis, V., Points, L., Pope, B., Lee, C. M. J., Mohamed, M., Rhodes, J. S., ... & Yuan, L. L. 2024 . Estrogen-mediated individual differences in female rat voluntary running behavior. *Journal of Applied Physiology*. In press.
111. Kumar ,V., Lee, K.W., Acharya, A., Babik, M.S., Christian-Hinman C.A., Rhodes, J.S., & Tsai, N.P. 2024 . mGluR7 allosteric modulator AMN082 corrects protein synthesis and pathological phenotypes in FXS. *EMBO Molecular Medicine*. In press.
112. Parker, C. G., Gruenhagen, G. W., Hegarty, B. E., Histed, A. R., Streelman, J. T., Rhodes, J. S., & Johnson, Z. V. 2024 . Adult sex change leads to extensive forebrain reorganization in clownfish. *bioRxiv*, 2024-01. Preprint.

Invited reviews and book chapters

113. Rhodes J.S., Crabbe J.C. 2003. Progress towards finding genes for alcoholism in mice. *Clinical Neuroscience Research* 3:315-323.
114. Rhodes J.S., Gammie S.C., Garland T., Jr. 2005. Neurobiology of mice selected for high voluntary wheel running activity. *Integrative and Comparative Biology* 45:438-455.
115. Rhodes J.S., Crabbe J.C. 2005. Gene expression induced by drugs of abuse. *Current Opinion in Pharmacology* 5:26-33.
116. Rhodes J.S., Kawecki, T. 2009. Behavior and Neurobiology. In: Garland T., Jr., Rose, M.R. (eds) *Experimental Evolution*. University of California Press.
117. Rhodes J.S., Majdak, P. 2013. Physical activity and reward: The role of dopamine. In: Ekkekakis P. (ed) *Routledge Handbook of Physical Activity and Mental Health*. Routledge.
118. Kohman, R.A. and Rhodes, J.S. 2013. Neurogenesis, inflammation and behavior. *Brain, Behavior, and Immunity* 27: 22-32
119. Garcia-Fuster, MJ, Rhodes, J.S., and Mandyam, C.D. 2013. The role of dentate gyrus neurogenesis in neuropsychiatric disorders. *Neural Plasticity*.
120. Hamilton G.F., Rhodes J.S. 2015. Animal models of exercise-brain interactions. In: McMorris (ed) *Exercise-Cognition Interaction*. Elsevier.
121. Hamilton G.F., Rhodes J.S. 2015. Exercise regulation of cognitive function and neuroplasticity in the healthy and diseased brain. In: Bouchard C. (ed) *Progress in Molecular Biology and Translational Science: Molecular and Cellular Regulation of Adaptation to Exercise*. Elsevier.
122. Rendeiro C., Rhodes J.S., Spencer J.P. 2015. The mechanisms of action of flavonoids in the brain: Direct versus indirect effects. *Neurochemistry International* 89:126-139.
123. Kohman R.A., Rhodes J.S. 2016. Role of adult hippocampal neurogenesis in psychiatric disorders. In Halaris A. and Leonard B. (eds) *Neuroprogression in Psychiatric Disorders*. Karger Verlag.
124. Rhodes J.S. 2018. Neurogenetics of motivation for exercise. In Lightfoot T.J., Roth S., Hubal M. (eds) *Rutledge Handbook of Sport and Exercise Systems Genetics*, Routledge.
125. Rendeiro C., Rhodes J.S. 2020. Dietary flavonoids and brain health in aging: food for thought. In Preedy V.R. (ed) *Neuroscience of Aging*, Elsevier.
126. Barbasch T. A., DeAngelis R., Rhodes J.S., Buston, PM. 2022. Parental care: Patterns, proximate and ultimate causes, and consequences. In: *Evolution, Development and Ecology of Anemonefishes* (pp. 159-166). CRC Press.
127. Casas, L., Parker, C.G., Rhodes, J.S. 2022. Sex change from male to female: Active feminization of the brain, behavior, and gonads in anemonefish. In: *Evolution, Development and Ecology of Anemonefishes* (pp. 117-125) . CRC Press.