

# Michael J. Chumley

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## EDUCATIONAL BACKGROUND

PhD	Immunology, University of Colorado Health Sciences Center, 2000
MS	Exercise Physiology, University of Wyoming, 1994
BS	Education, University of Wyoming, 1987

## YEAR OF APOINTMENT TO THE UNIVERSITY AND RANK

Professor of Biology, Texas Christian University, Promoted 2020  
Associate Professor of Biology, Texas Christian University, Promoted 2014  
Assistant Professor of Biology, Texas Christian University, Appointed 2008

## PREVIOUS RESEARCH POSITIONS

Instructor, University of Texas Southwestern Medical Center, Center for Developmental Biology, Dallas, TX. 2005–2008.

Postdoctoral Fellow, University of Texas Southwestern Medical Center, Center for Developmental Biology, Dallas, TX. 2001–2004.

Postdoctoral Fellow, University of Kansas, Department of Pharmacology and Toxicology, Lawrence, KS. 2000–2001.

Postdoctoral Fellow National Jewish Medical Research Center, Denver, CO. 2000.

Graduate Student, Immunology, National Jewish Medical Research Center and the University of Colorado Health Sciences Center, Denver, CO. Thesis Title: *Antigen Receptor Specificity Directs B-Cell Differentiation to the B1 and B2 Subsets*. 1995–2000.

Graduate Student, Exercise Physiology, University of Wyoming Department of Kinesiology and Health Sciences, Laramie, WY. Thesis Title: *The Immunoregulatory Effects of High-Intensity Interval Exercise*. 1992–1994.

Graduate research project conducted at the United States Olympic Training Center, Colorado Springs, CO.

## TCU TEACHING ASSIGNMENTS

Introduction to Biology II (BIOL 10503)  
Cell, Molecular, and Developmental Biology (BIOL 30603)  
Mammalian Physiology (BIOL 40403)  
Immunology (BIOL 40254/70950)  
Seminar in Stem Cell Biology (BIOL 40001/60910)

Immunobiology of Disease (BIOL 40800/70950)  
Neurobiology of Aging (BIOL/PSYC 50401)  
Assigned Problems in Biology – Advanced Microscopy (BIOL 70950)  
Assigned Problems Biology – Advanced Cellular and Molecular Immunology (BIOL 70950)  
Skills and Techniques in Biological Research (BIOL 60220)

## PREVIOUS TEACHING EXPERIENCE

Instructor, University of Texas Southwestern Medical Center, Dallas, TX. Graduate Instructor. 2003-2007

Graduate Instructor, The Ohio State University, Columbus, OH. Physiology of Exercise I, Physiology of Exercise II, Diet and Exercise, Conditioning for Performance (Lab), Racquetball. 1994–1995.

Graduate Instructor, The University of Wyoming, Laramie, WY. Physiology of Exercise (Lab), Golf, Rock Climbing, Racquetball. 1992–1994.

Teacher, Lander Valley High School, Lander, WY. General Chemistry, General Physics, Advanced Placement Chemistry, Head Wrestling Coach, Assistant Volleyball Coach, Assistant Soccer Coach. 1989–1992.

Teacher, Kenneth Henderson Middle School, Garden City, KS. Life Sciences, Football, Wrestling, and Track Coach. 1988-1989.

## FUNDED EXTERNAL RESEARCH SUPPORT

National Institutes of Health R15 (1 R15 GM123463-01A1), Targeting oxidative stress in neurodegeneration using pyridol-derived small molecules, 06/2018 – 05/2021, \$378,914 (Direct+Indirect), PIs: Dr. Kayla Green (TCU), Dr. Giri Akkaraju (TCU), and Dr. Michael Chumley (TCU)

Texas Higher Education Coordinating Board Norman Hackerman Advanced Research Program (NHARP 003636–0003–2011), *Systemic Inflammation as a Treatable Risk Factor in the Onset of Alzheimer's Disease*, 07/2012 – 08/2014, \$80,000

Christopher Reeve Paralysis Foundation (HBI–0302), *Eph-Ephrin Signaling in the Growth Cone*, 12/03–12/05, \$150,000

National Institutes of Health NRSA (F32–NS42526–02), *The Molecular Mechanisms of B-Class Eph Receptor and Ephrin Signal Transduction in Neuronal Development*, 12/01–12/03 \$42,000 year 1 and \$45,000 year 2.

## EXTERNAL RESEARCH SUPPORT REQUESTED (Unfunded)

National Institutes of Health R15 (PA–13-313), *Pyridol derived small molecules targeting oxidative stress*, Submitted 02/25/2015, \$376,045 (with Dr. Kayla Green and Dr. Gary Boehm)

Alzheimer's Association New Research Grant, *Assessing the in vivo effects of pyridol derived small molecules*, Submitted 05/04/2015, \$99,7924 (with Dr. Kayla Green)

National Institutes of Health R15 (PA–13-313), *Pyridol derived small molecules targeting oxidative stress in neurodegeneration*, Submitted 06/25/14, \$390,161 (with Dr. Kayla Green and Dr. Gary Boehm)

BrightFocus Foundation Alzheimer's Disease Research proposal, *Assessing cyclic amines' chemical activity in remediation of AD pathology*, Submitted 10/14/14, \$249,666 (with Dr. Kayla Green and Dr. Gary Boehm)

Alzheimer's Association New Investigator Research Grant, *Assessing the in vivo effects of pyridol derived small molecules*, Submitted 02/25/14, \$99,914 (with Dr. Kayla Green)

National Institutes of Health R15 (PA–12–006), *Hybrid Therapeutics of AD: N-Heterocyclic Amines with Lipoic Acid*, Submitted 06/25/13, \$381,660 (with Dr. Kayla Green)

National Institutes of Health R15 (PA–12–006), *Pyclen Derivatives as Antioxidant Bimodal Therapeutics for Alzheimer's Disease*, Submitted 06/25/12, \$385,559. (with Dr. Kayla Green)

National Institutes of Health R01. *Plaque Formation in the Brains of Aged EphB Mutant Mice: A New Alzheimer's Model*. Submitted as a consortium by Dr. Mark Henkemeyer, UT Southwestern Medical Center on 10/03/2012. \$2,937,974.00 (\$411,398.00 to Dr. Chumley and TCU)

National Science Foundation Research Experience for Undergraduates (REU) Site: *Exposing Undergraduates to Science through Research in Ecology and Conservation Biology or Cellular and Molecular Biology*, \$203,200, Co-PI with Dr. Matthew Chumchal, 8/15/2010

## INTERNAL RESEARCH SUPPORT

BRCA-1 and Alzheimer's Disease. John V. Roach Honors College student research grant awarded to Charley Edgar (M.Chumley, advisor), \$2,457.31. 2019-2020

Effects of Chronic Unpredictable Stress on Alzheimer's Disease Pathology. John V. Roach Honors College student research grant awarded to Amanda Key (M.Chumley, advisor), \$2,500. 2019-2020

Plant-based Mediterranean Diet vs. High-fat Western Diet. John V. Roach Honors College student research grant awarded to Claire Munster (M.Chumley, advisor), \$2,440. 2019-2020

Effects of Therapeutic Antioxidant Compounds on the Production of Proinflammatory Cytokines in BV2 Microglial Cells. John V. Roach Honors College student research grant awarded to Caitlyn Vilas (M.Chumley, advisor), \$2,488.54. 2019-2020

The effects of amyloid- $\beta$  on extinction learning. Science and Engineering Research Center Award for Undergraduate Students to Charley Edgar (M.Chumley, advisor), \$1,462. 2019-2020

Effect of prenatal stress on Alzheimer's disease pathology. John V. Roach Honors College student research grant awarded to Jack Figg (M.Chumley, advisor), \$1,610. 2018-2019

- Analysis of synapse alterations in Alzheimer's disease. John V. Roach Honors College student research grant awarded to Sarah Nagel (M.Chumley, advisor), \$1,070. 2018-2019
- FKBP genes and post-traumatic stress disorder. John V. Roach Honors College student research grant awarded to Sofia Lopez (M.Chumley, advisor), \$1,500. 2018-2019
- Dendritic spine analysis in Alzheimer's disease. John V. Roach Honors College student research grant awarded to Gabrielle Frediani (M.Chumley, advisor), \$2,000. 2018-2019
- The effects of amyloid- $\beta$  on extinction learning. Science and Engineering Research Center Award for Undergraduate Students to Charley Edgar (M.Chumley, advisor), \$1,427. 2018-2019
- The role of inflammation and amyloid beta in the destruction of neuronal connections. Science and Engineering Research Center Award for Undergraduate Students to Claire Munster (M.Chumley, advisor), \$1,500. 2018-2019
- Acute Stress in Old Age and its Impact on Amyloid  $\beta$ . Science and Engineering Research Center Award for Undergraduate Students to Rachel Jordan (M.Chumley, advisor), \$1,456. 2018-2019
- Plant-Based Diet and its effect on Inflammation and Amyloid Beta in Alzheimer's Disease. Science and Engineering Research Center Award for Undergraduate Students to Caitlyn Vilas (M.Chumley, advisor), \$1,453. 2018-2019
- Effects of Octyl Gallate on Amyloid Beta Levels and Inflammation in Alzheimer's Disease. Science and Engineering Research Center Award for Undergraduate Students to Austin Williams (M.Chumley, advisor), \$1,474. 2018-2019
- Effects of Stress on Contextual Acquisition and Extinction in Mouse Models of Alzheimer's Disease. Science and Engineering Research Center Award for Undergraduate Students to Amanda Key (M.Chumley, advisor), \$1,435. 2018-2019
- Differential effects of amyloid beta on CFC performance in young versus adult 5xFAD mice. Science and Engineering Research Center Award for Undergraduate Students to Christian Franklin (M.Chumley, advisor), \$1,150. 2017-2018
- Developing a novel model of PTSD in the mouse. Science and Engineering Research Center Award for Undergraduate Students to Jack Figg (M.Chumley, advisor), \$1,150. 2017-2018
- Effects of isolation stress on amyloid beta levels in C57BL/6J mice. Science and Engineering Research Center Award for Undergraduate Students to Gabby Frediani (M.Chumley, advisor), \$1,150. 2017-2018
- The effect of exercise on amyloid plaque levels, oxidative stress, and death receptor 6 levels in a transgenic mouse. Science and Engineering Research Center Award for Undergraduate Students to Lauren Nakhleh (M.Chumley, advisor), \$1,150. 2017-2018
- Can exercise and environmental enrichment prevent stress-induced increases in amyloid beta and cognitive deficits? Science and Engineering Research Center Award for Undergraduate Students to Mark Quiring (M.Chumley, advisor), \$1,150. 2017-2018

- Inflammation and amyloid-beta's effects on dendritic spines. Science and Engineering Research Center Award for Undergraduate Students to Michaela O'Connor (M.Chumley, advisor), \$1,150. 2017-2018
- The length of lipopolysaccharide's effects on dendritic spine morphology. Science and Engineering Research Center Award for Undergraduate Students to Sarah Nagel (M.Chumley, advisor), \$1,150. 2017-2018
- Neurobiological effects of prenatal stress on 5xFAD transgenic mice. Science and Engineering Research Center Award for Undergraduate Students to Rachel Donaldson (M.Chumley, advisor), \$1,150. 2017-2018
- B Cells in Alzheimer's Disease Prevention. TCU Invests in Scholarship to M. Chumley. \$25,000. 2016-2017
- Isolation of Primary Microglial Cells from the Mouse Brain. Science and Engineering Research Center Award for Undergraduate Students to Meg Cooksey (M.Chumley, advisor), \$1,500, 2016-2017
- Can Octyl Gallate Ameliorate LPS-Induced A $\beta$  Accumulation and Memory Deficits. Science and Engineering Research Center Award for Undergraduate Students to Alexa Calcagno (M. Chumley, advisor), \$1,500, 2016-2017
- Immunization Against Alzheimer's Disease. Science and Engineering Research Center Award for Undergraduate Students to Michaela O'Connor (M.Chumley, advisor), \$1,500, 2016-2017
- Can Rolipram Slow the Progression of Alzheimer's Disease? Science and Engineering Research Center Award for Undergraduate Students to Taylor Hayes (M. Chumley, advisor), \$1,500, 2016-2017
- Resveratrol as a Therapeutic Agent Against Amyloid Beta-Induced Oxidative Stress. Science and Engineering Research Center Award for Undergraduate Students to Taylor Hayes (M. Chumley, advisor), \$1,351, 2015-2016.
- Do Omega-3 Fatty Acids Reduce Inflammation Produced by Microglial Cells. Science and Engineering Research Center Award for Undergraduate Students to Alex Sanders (M. Chumley, advisor), \$1,210, 2015-2016.
- Peritoneal B-1 Cells Offer Resistance to LPS-Induced Amyloid Beta Production and May Have Therapeutic Value. Science and Engineering Research Center Award for Undergraduate Students to Elie Rominger (M. Chumley, advisor), \$1,407, 2015-2016.
- The Expression of NR4A Family Orphan Receptors in Response to Repeated Bouts of Poly:IC Injections. Science and Engineering Research Center Award for Undergraduate Students to Sruthi Reddy (M. Chumley, advisor), \$1,305, 2015-2016.
- The Role of Exercise in the Anti-Inflammatory Response of Microglial Cells from the Hippocampus. Science and Engineering Research Center Award for Undergraduate Students to Hannah Wilkerson (M. Chumley, advisor), \$1,500, 2015-2016.
- Minimum LPS Dose to Induce Amyloid Beta Production in Aged Mouse Model. Science and Engineering Research Center Award for Undergraduate Students to Sydney DeSpain (M. Chumley, advisor), \$1,305, 2015-2016.

- The Interaction Between Exercise and Increased Cerebrospinal Fluid Flow on Amyloid Beta Clearance from the Brain Following Inflammation. Science and Engineering Research Center Award for Undergraduate Students to Terrul Ratcliff (M. Chumley, advisor), \$1,500, 2015-2016.
- Does Forced Exercise Provide a Benefit to Alzheimer's Disease Similar to Voluntary Exercise? Science and Engineering Research Center Award for Undergraduate Students to Jake Powell (M. Chumley, advisor), \$1,447, 2015-2016.
- Exercise-induced microglial phenotypic changes that reduce Alzheimer's pathology. TCU Research and Creative Activities Fund Grant, \$4,000, 2015-2016.
- The effect of  $\beta$ -amyloid on neuron growth and communication. Science and Engineering Research Center Award for Undergraduate Students to Jenny Hagemeyer (M. Chumley, advisor), \$1,500, 2015-2016.
- The Use of Omega-3 Fatty Acids to Reduce Peripheral LPS-Induced Inflammation in Alzheimer's Disease. Science and Engineering Research Center Award for Undergraduate Students to Alex Sanders (M. Chumley, advisor), \$600, 2014-2015.
- Evaluation of the influence of chronic stress on the development of cognitive dysfunction and hallmark Alzheimer's pathologies. Science and Engineering Research Center Award for Undergraduate Students to Jacob Ortega (M. Chumley, advisor), \$900, 2014-2015.
- Effect of high fat and sugar diet on accumulation of brain amyloid beta and associated cognitive deficits. Science and Engineering Research Center Award for Undergraduate Students to Laila Abdeljalil (M. Chumley, advisor), \$1,200, 2014-2015.
- Steroidal Anti-Inflammatories and Their Role in the Progression of Alzheimer's Disease. Science and Engineering Research Center Award for Undergraduate Students to Janelle Salisbury (M. Chumley, advisor), \$1,000, 2014-2015.
- Triazine dendrimers as potential disruptors of LPS:TLR4 interactions. Science and Engineering Research Center Award for Undergraduate Students to Kelsey Paulhus (M. Chumley, advisor), \$1,000, 2014-2015.
- How Early Life Inflammation Affects Brain Amyloid-Beta Accumulation and Cognitive Deficits Following Subsequent Inflammation in Aged Mice. Science and Engineering Research Center Award for Undergraduate Students to Hailey Hayes (M. Chumley, advisor), \$1,000, 2014-2015.
- The Effectiveness of the Antioxidant Pycnogenol in the Disaggregation of A $\beta$  plaques, Reduction of Oxidative Stress, and Restoration of Cognitive Function in Alzheimer's Disease. Science and Engineering Research Center Award for Undergraduate Students to Troy Gurney (M. Chumley, advisor), \$1,000, 2014-2015.
- The role of imatinib methanesulfonate salt reduction of hippocampal amyloid-beta in the hyperphosphorylation of Tau, Science and Engineering Research Center Award for Undergraduate Students to Laurel Gardner (M. Chumley, advisor), \$1,200, 2014-2015.
- Development of Molecular tools for studying the amyloid protein in Alzheimer's disease. TCU Invests in Scholarship. \$23,387. (CoInvestigator with Dr. Green, TCU Department of Chemistry) 2014-2015.

- The effect of 7 days of LPS injections on the amount of pTau in the mouse brain. Science and Engineering Research Center Award for Undergraduate Students to Laurel Gardner (M. Chumley, advisor), \$1,000, 2013-2014.
- The Effectiveness of the Antioxidant PycLen-OH in the Disaggregation of A $\beta$  plaques, Reduction of Oxidative Stress, and Restoration of Cognitive Function in Alzheimer's Disease. Science and Engineering Research Center Award for Undergraduate Students to Troy Gurney (M. Chumley, advisor), \$1,000, 2013-2014.
- The Expression of NR4A Family mRNA in the Hippocampus following Peripheral Inflammation. Science and Engineering Research Center Award for Undergraduate Students to Hailey Hayes (M. Chumley, advisor), \$1,000, 2013-2014.
- Analysis of amyloid beta clearance in exercised mice following inflammation. Science and Engineering Research Center Award for Undergraduate Students to Jessica Mussatto (M. Chumley, advisor), \$1,000, 2013-2014.
- Exercise-induced clearance of amyloid- $\beta$  mediated by NG2 expressing oligodendroglial precursor cells. Science and Engineering Research Center Award for Undergraduate Students to Stephanie Turner (M. Chumley, advisor), \$1,000, 2013-2014.
- The Effects of EphB1 and EphB3 Proteins on Amyloid-Beta Plaque Formation and the Progression of Alzheimer's Disease. Science and Engineering Research Center Award for Undergraduate Students to Christine Riddle (M. Chumley, advisor), \$1,200, 2013-2014.
- The Role of NR4A Family Proteins in the Memory Enhancement seen in Alzheimer's Disease Mouse Models Treated with Rolipram. Science and Engineering Research Center Award for Undergraduate Students to Tanner Robertson (M. Chumley, advisor), \$1,100, 2013-2014.
- Changes in Expression of Alzheimer's Disease-Related Heat Shock Proteins Following Inflammation. Science and Engineering Research Center Award for Undergraduate Students to Thomas Parnell (M. Chumley, advisor), \$1,200, 2013-2014.
- Steroidal Anti-Inflammatories and Their Role in the Progression of Alzheimer's Disease. Science and Engineering Research Center Award for Undergraduate Students to Jenelle Salisbury (M. Chumley, advisor), \$900, 2013-2014.
- The Effects of Ibuprofen Administration After Lipopolysaccharide Injections in Prevention of Cognitive Dysfunction and Alleviation of Central Accumulation of Amyloid-Beta. Science and Engineering Research Center Award for Undergraduate Students to Ceci Canelos (M. Chumley, advisor), \$700, 2013-2014.
- The Role and Implications of Eph Receptors EphB1 and EphB3 in Alzheimer's Disease. Science and Engineering Research Center Award for Undergraduate Students to Brock Boren (M. Chumley, advisor), \$1,500, 2013-2014.
- The Effects of Viral Inflammation on Neuronal Health and the Onset of Alzheimer Disease Pathology. TCU Research and Creative Activities Fund Grant, \$4,000, 2012-2013.
- PycLen Derivatives as Therapeutics for Alzheimer's Disease. TCU Invests In Scholarship. \$4,000. 2012-2013.

The Effect of Amyloid Beta on Neuron Cellular Function. Student Government Association Undergraduate Research Grant Program to Jigna Patel (M. Chumley, advisor), \$500, 2012.

The Effects of Forced Exercise on Neurogenesis and Inflammation in the Hippocampus. Student Government Association Undergraduate Research Grant Program to Ashley Bolin (M. Chumley, advisor), \$500, 2012.

Age-Related Differences in Heat Shock Protein Induction in the Hippocampus. Student Government Association Undergraduate Research Grant Program to Adam Furman (M. Chumley, advisor), \$500, 2012.

Viral Induction of Alzheimer's Disease Pathology. Student Government Association Undergraduate Research Grant Program to Clay Fox (M. Chumley, advisor), \$500, 2012.

A Potential Role for the Cancer Drug Gleevec in the Prevention of Alzheimer's Disease. Student Government Association Undergraduate Research Grant Program to Jessica Nouri (M. Chumley, advisor), \$500, 2012.

Age-Related Changes in Heat Shock Protein Expression in the Hippocampus. TCU Research and Creative Activities Fund Grant, \$3,795, 2011-2012.

Inflammation & Alzheimer's Disease. TCU Research and Creative Activities Fund Grant, \$2,900, 2010-2011.

The Role of Adult-Derived Neurons in Learning and Memory. TCU Research and Creative Activities Fund Grant and Junior Summer Research Program, \$10,000, 2009-2010.

Mouse Model of Alzheimer's Disease Brain. Science and Engineering Research Center Award for Undergraduate Students to Chris Alonzo (M. Chumley, advisor), \$2,500, 2010.

Role of Viral Inflammation in the Progression of Alzheimer's Disease. Science and Engineering Research Center Award for Undergraduate Students to Mary Martin (M. Chumley, advisor), \$2,500, 2010.

Mouse Model of Alzheimer's Disease Brain. Science and Engineering Research Center Award for Undergraduate Students to Chris Alonzo (M. Chumley, advisor), \$2,000, 2009.

The Effects of Maternal Age on Neonatal Stem Cell Number in the Mouse Hippocampus. Science and Engineering Research Center Award for Undergraduate Students to Jay Blasingame (M. Chumley, advisor), \$2,000, 2009.

The Relationship Between the Behavioral Effects of Antidepressants and Hippocampal Neurogenesis. Science and Engineering Research Center Award for Undergraduate Students to Mary Martin (M. Chumley, advisor), \$2,000, 2009.

Binding of BODIPY to Amyloid Peptides in Animal Tissues. Science and Engineering Research Center Award for Undergraduate Students to Jeff Mitchel (M. Chumley, advisor), \$2,000, 2009.

Role of EphB1 in Learning and Memory. Science and Engineering Research Center Award for Undergraduate Students to Kelsey Shideler (M. Chumley, advisor), \$2,000, 2009.



Role of EphB1 on the Organization of Adult Hippocampus Stem Cell Niche. Science and Engineering Research Center Award for Undergraduate Students to Chris Trinh (M. Chumley, advisor), \$2,000, 2009

## **GRADUATE THESIS DIRECTED or CO-DIRECTED**

Kelly Brice, MS, Psychology (2019). *Chronic Sleep Restriction Exacerbates Alzheimer's Disease-Like Pathology and Alters Peripheral IL-1 $\beta$  Expression in C57BL/6 Mice*

Christopher Hagen, MS, Biology (2019). *The Impact of Early Developmental Stress on Inflammation in Adulthood.*

Julia Peterman, MS, Psychology (2018). *Extended Isolation-Stress-Induced Exacerbation of Alzheimer's Disease Pathology in 5xFAD Mice.*

Jordon White, PhD, Psychology (2017). *The Role of Exogenously Administered Murine Amyloid-Beta in Disrupting Different Phases of the Learning Process: From Consolidation to Extinction.*

Hailey Hayes, MS, Biology (2017). *Regulation of Nuclear Orphan Receptors Following Inflammation*

Morgan Thompson, MS, Biology (2017). *A Potential Role for B-1 Lymphocytes in the Fight Against Alzheimer's Disease*

Kelsey Paulhus, MS, Biology (2017). *Pyridol Derivatives as Potential Treatments for Alzheimer's Disease*

Jordon White, MS, Psychology (2015). *Exercise Induced Microglial-Dependent Clearance of A $\beta$  Following Inflammation in Mice*

Amy Hardy, MS, Biology (2015). *Do Repeated Bouts of Inflammation Lead to Sustained Elevation of Amyloid Beta in the Brain?*

Marielle Kahn, PhD, Psychology (2014). *A Potential Role for Peripheral Inflammation in the Onset of Alzheimer's Disease-Related Pathology and Cognitive Deficits.*

Scott Pearson, MS, Biology (2014). *Inflammation- and Age-Related Alterations in Tau Expression and Phosphorylation.*

Ben Vinson, MS, Biology (2013). *A Role for Exercise in the Alleviation of Central Accumulation of Amyloid-Beta and Prevention of Cognitive Dysfunction Following Peripheral Inflammation*

Jeffrey Mitchel, MS, Biology (2012). *Age-Related Changes in Heat Shock Protein Expression in the Hippocampus*

Shannon Gettel, MS, Biology (2010). *The Role of Adult Neurogenesis on Antidepressant-Induced Behavioral Changes.*

Stephanie Wallace, MS, Biology (2009). *The Role of Adult-Derived Neurons in Learning and Memory.*

## **GRADUATE COMMITTEES**

Mike Levitt, MS, Kinesiology (2019)

Maria Cardenas, MS, Kinesiology (2018)

Micah Eimerbrink, PhD, Psychology (2017)  
Peter Bruns, MS, Biology (2017)  
Stephanie Turner, MS, Kinesiology, (2016)  
Catherine Urbano, PhD, Psychology (2015)  
Yuyang Huang, MS, Biology (2015)  
Leah Thornton, MS, Biology (2015)  
“Lily” Wu Wen Jing, MS, Biology, (2013)  
Catherine Urbano, MS, Psychology (2013)  
Chris Evans, MS, Biology (2013)  
Elizabeth Franks, MS, Biology (2013)  
Adam Jajtner, MS, Kinesiology (2012)  
Kenneth Christensen, MS, Kinesiology (2012)  
Mathew Unthank, MS, Kinesiology (2012)  
Jonathan Woodson, MS, Kinesiology (2012)  
James Gleaton, MS, Biology, TCU (2011)  
Kristina McLinden, PhD, Psychology, TCU (2011)  
Dinko Kranjac, MS, Psychology, TCU (2011)  
Kelyn Rola, MS, Kinesiology, MS, Kinesiology (2010)  
Andrew Tarr, PhD, Experimental Psychology (2009)

#### **UNDERGRADUATE HONORS RESEARCH MENTORED**

Charley Edgar, 2020, Extinction Learning Deficits Develop Prior to Contextual Acquisition Deficits in Mice Expressing Alzheimer’s Pathologies.

Caitlyn Vilas, 2020, *The Effects of Therapeutic Antioxidant Compounds on the Production of Proinflammatory Cytokines in BV-2 Microglial Cells*

Anna C. Munster, 2020, *The Effect of High-Fat, Western Diet VS Plant-Based, Mediterranean Diet on Alzheimer’s Pathology in Mice*

Amanda Key, 2020, *The Effects of Chronic Unpredictable Stress on Cognitive Dysfunction and Alzheimer’s Disease Pathology*

Gabrielle Frediani, 2019, *The Effect of Amyloid Beta on Synapses*

Sarah Nagel, 2019, *Quantifying Neuronal Synapses in 5xFAD Mice Utilizing Immunolabeling and Tissue Clearing*

Jack Figg, 2019, *The Impact of Early Life Stress on Inflammation in Adulthood*

Lauren Nakhleh, 2019, *Oxidative Stress as a Target for Alzheimer’s Disease Therapeutics*

Rachel Jordan, 2019, *Investigating the Role of Glymphatic Clearance of Amyloid Beta Through Exercise in C57BL6/J Mice*

Sofia Lopez, 2019, *Attenuated Inflammation and Amyloid Beta Accumulation Following Repeated Inflammatory Events in Adult Male Mice*

Brooke Hardiman, 2018, *Effects of Chronic Mild Sleep Restriction Following Repeated Endotoxin Exposure on Alzheimer’s Disease Pathology in Healthy Wild Type Mice*

Michaela O’Connor, 2018, *The Effects of Lipopolysaccharide on Dendritic Spine Density*

- Alexa Calcagno, 2018, *Effects of Exercise and an Enriched Environment on Alzheimer's Disease Pathology in Chronically Stressed Mice*
- Hannah Wilkerson, 2016, *The Role of Exercise in the Anti-Inflammatory Response of Microglial Cells from the Hippocampus*
- Alex Sanders, 2016, *The Effects of yhe Omega Three Fatty Acid, DHA, on Raw 264.7 Macrophage Cells*
- Eleanore Rominger, 2016, *The Role of B Cells in Targeting Alzheimer's Pathology*
- Hailey Hayes, 2015, *The Regulation of Nur77 in Response to Inflammation, Amyloid-Beta, and Exercise in an LPS-Induced Alzheimer's Disease Model.*
- Laurel Gardner, BS, Biology (2015), *The Role of Imatinib Methanesulfonate Salt-Mediated Reduction of Hippocampal Amyloid Beta in the Hyperphosphorylation of Tau.*
- Troy Gurney, 2015, *The Effectiveness of Hydroxypycnolone in the Dysaggregation of Amyloid Beta Plaques and Restoration of Cognitive Function in Alzheimer's Disease.*
- Stephanie Turner, 2014, *Bioactive Dendrimer Drugs as Potential Therapeutic Treatments for Inflammation.*
- Thomas Parnell, 2014, *How Early Life Inflammation Affects Brain Amyloid Beta Accumulation Following Subsequent Inflammation in Aged Mice.*
- Christine Riddle, 2014, *The Effects of EphB Receptor Tyrosine Kinases On Levels Of Amyloid-Beta Protein In The Hippocampus And The Progression Of Alzheimer's Disease.*
- Jessica Mussatto, 2014, *Analysis of amyloid beta clearance in exercised mice following inflammation.*
- Jigna Patel, 2013, *Could Your Cold be Giving You Alzheimer's? A Role for Amyloid Beta in Cognitive Dysfunction.*
- Courtney Bisson, 2013, *Could an Anti-Cancer Drug Be a Cure for Alzheimer's Disease? Effects of Imatinib Methanesulfonate on Inflammation-induced Amyloid Beta and Cognition.*
- Whitney Summers, 2012, *A Potential Role for Virus-Induced Inflammation in the Onset and Progression of Various Alzheimer's Disease Pathologies*
- Rachel Lowry, 2011, *Effects of the Green Tea Catechin EGCG on Body Weight, Amyloid beta, and Cognitive Deficits*
- Jennifer Haase, 2011, *Effects of EphB1 Knockout on Hippocampus-Based Learning Tasks in Mice*
- Jay Blasingame, 2010, *Maternal Age and Its Effects on Neurogenesis in the Offspring of Mice*

## **UNDERGRADUATE STUDENTS MENTORED IN RESEARCH**

Shelby Kay Miller (Current)  
Kassandra Goytia (Current)  
Sienna Partipilo (Current)

Connie Linardos, John V. Roach Honors College (Current)  
Tess Elizabeth Brown, John V. Roach Honors College (Current)  
Margaret Vo, John V. Roach Honors College (Current)  
Caroline O'Connor, John V. Roach Honors College (Current)  
Taylor Jamali (Current)  
Lauren McCue (Current)  
Filza Qureshi (Current)  
Sarah Patton (Current)  
Gabrielle Salinas (Current)  
Brooke Boisvert (Current)  
Carley Alley, John V. Roach Honors College (Current)  
Charley Edgar, BS, Biology, Departmental Honors (2020)  
Frenki Behaj, BS, Biology (2020)  
Madison Johnson, BS, Biology (2020)  
Caitlyn Vilas, BS, Biology, Departmental Honors (2020)  
Austin Williams, BS, Biology (2020)  
Amanda Key, BS, Biology, Departmental Honors (2020)  
Claire Munster, BS, Biology, Departmental Honors (2020)  
Sofia Lopez, BS, Biology, Departmental Honors (2019)  
Gabrielle Frediani, BS, Biology, Departmental Honors (2019)  
Jack Figg, BS, Biology, Departmental Honors (2019)  
Sarah Nagel, BS, Biology, Departmental Honors (2019)  
Rachel Jordan, BS, Biology, Departmental Honors (2019)  
Lauren Nakhleh, BS, Biology, Departmental Honors (2019)  
Brooke Hardiman, BS, Biology, Departmental Honors (2019)  
Rachael Donaldson, BS, Biology (2019)  
Christian Franklin, BS, Biology (2019)  
Mark Quiring, BS, Biology (2018)  
Michaela O'Conner, BS, Biology, Departmental Honors (2018)  
Alexa Calcagno, BS, Biology, Departmental Honors (2018)  
Haley Moore, BS, Biology, Departmental Honors (2018)  
Meg Cooksey, BS, Biology (2018)  
Taylor Hayes, BS, Biology, Departmental Honors (2016)  
Eleanore Rominger, BS, Biology, Departmental Honors (2016)  
Sruthi Reddy, BS, Biology, Departmental Honors (2016)  
Jake Powell, BS, Biology, Departmental Honors (2016)  
Terrul Ratcliff, BS, Biology, Departmental Honors (2016)  
Hannah Wilkerson, BS, Biology, Departmental Honors (2016)  
Laila Abdeljalil, BS, Biology, Departmental Honors (2016)  
Alex Sanders, BS, Biology, Departmental Honors (2016)  
Mia Eriksson, BS, Psychology (2016)  
Jenny Hagemeyer BS, Biology (2016)  
Sydney DeSpain BS, Biology (2016)  
Stephanie Turner, BS, Biology, Departmental Honors (2016)  
Hailey Hayes, BS, Biology, Departmental Honors (2015)  
Laurel Gardner, BS, Biology, Departmental Honors (2015)  
Troy Gurney, BS, Biology, Departmental Honors (2015)  
Thomas Parnell, BS, Biology, Departmental Honors (2015)  
Kelsey Paulhus, BS, Biology (2015)  
Jenelle Salisbury, BS, Biology (2015)

Christine Riddle, BS, Biology, Departmental Honors (2014)  
Jessica Mussatto, BS, Biology (2014)  
Jacob Ortega, BS, Biology, Departmental Honors (2014)  
Brock Boren, BS, Biology (2014)  
Ceci Canelos, BS, Biology (2014)  
Tanner Robertson, BS, Biology (2014)  
Courtney Bisson, BS, Biology, Departmental Honors (2013)  
Jigna Patel, BS, Biology, Departmental Honors (2013)  
Whitney Summers, BS, Biology, Departmental Honors (2012)  
Clayton Fox (BS, Biology (2012)  
Adam Furman, BS, Biology (2012)  
Hayden Fuller, BS, Biology (2012)  
Kaitlyn Vann, BS, Biochemistry (2012)  
Ashley Bolin, BS, Biology (2012)  
Chris Trinh, BS, Biology (2012)  
Jessica Nouri, BS, Biology (2012)  
Rachel Lowry, BS, Biology, Departmental Honors (2011)  
Jennifer Haase, BS, Biology, Departmental Honors (2011)  
Rudy Cedillos, Ronald E. McNair Scholar. BS, Biology (2011)  
Mary Martin, BS, Biology (2011)  
Jay Blasingame, BS, Biology, Departmental Honors (2010)  
Jeff Mitchell, BS, Biology (2010)  
Chris Alonzo, BS, Biology (2010)  
Marina Guerra, BS, Biology (2010)  
Kelsey Shideler, BS, Biology (2010)  
Emily Hamm, BS, Biology (2009)  
Addison Whetstone, BS, Biology (2009)

## HIGH SCHOOL STUDENTS MENTORED IN RESEARCH

Kylie Fuller, Junior, Weatherford High School, Weatherford, TX (Summer 2018)  
Audree Green, Prosper High School, Prosper, TX (Summer 2017)  
Lakshmi Menon, Senior, Flower Mound High School, Flower Mound, TX, (Summer 2013)  
Parker Berg, Senior, RL Paschal High School, Fort Worth, TX (Spring/Summer 2010)

## PRESENTATION OF SCHOLARLY AND CREATIVE ACTIVITIES (\*denotes graduate student, \*\* denotes undergraduate student)

### a. Refereed Publications

Peterman JL\*, White JD\*, Calcagno A\*\*, Hagen C\*, Quiring M\*\*, Paulhus K\*, Gurney T\*\*, Eimerbrink MJ\*, **Curtis M, Boehm GW, Chumley MJ.** Prolonged isolation stress accelerates the onset of Alzheimer's disease-related pathology in 5xFAD mice despite running wheels and environmental enrichment. *Behav Brain Res.* 2020 Feb 3;379:112366. doi: 10.1016/j.bbr.2019.112366. Epub 2019 Nov 16. PubMed PMID: 31743728.

- White JD\*, Urbano CM\*, Taylor JO\*\*, Peterman JL\*, Cooksey M\*\*, Eimerbrink M\*, Eriksson MD\*, **Cooper BG, Chumley MJ, Boehm GW**. Intraventricular murine A $\beta$  infusion elicits hippocampal inflammation and disrupts the consolidation, but not retrieval, of conditioned fear in C57BL6/J mice. *Behav Brain Res*. 2020 Jan 27;378:112303. doi: 10.1016/j.bbr.2019.112303. Epub 2019 Oct 14. PubMed PMID: 31622640.
- Johnston HM\*, Pota K\*, Barnett MM\*\*, Kinsinger O\*\*, Braden P\*, Schwartz TM\*\*, Hoffer E\*\*, Sadagopan N\*\*, Nguyen N\*\*, Yu Y, Gonzalez P\*, Tircs  G, Wu H, **Akkaraju G, Chumley MJ, Green KN**. Enhancement of the Antioxidant Activity and Neurotherapeutic Features through Pyridol Addition to Tetraazamacrocyclic Molecules. *Inorg Chem*. 2019 Dec 16;58(24):16771-16784. doi: 10.1021/acs.inorgchem.9b02932. Epub 2019 Nov 27. PubMed PMID: 31774280.
- Eimerbrink, M.J.\* , Pendry, R.J.\*\* , Hodges, S.M.\*\* , Wiles, J.D.\* , Peterman, J.L.\* , J.D.\*\* , White, Hayes H.B.\* , **Chumley, M.J. & Boehm, G.W**, 2019, The  $\alpha$ 5-GABAAR inverse agonist MRK-016 upregulates hippocampal BDNF expression and prevents cognitive deficits in LPS-treated mice, despite elevations in hippocampal A $\beta$ . *Behav Brain Res*, 359: p. 871-877
- White JD\*, Eimerbrink MJ\*, Hayes HB\*\*, Hardy A\*, Van Enkevort EA\*, Peterman JL\*, **Chumley MJ**, Boehm GW, 2016, Hippocampal A $\beta$  expression, but not phosphorylated tau, predicts cognitive deficits following repeated peripheral poly I:C administration. *Behav Brain Res*, 313: p. 219-225.
- Gardner LE\*\*, White JD\*, Eimerbrink MJ\*, Boehm GW, **Chumley MJ**, 2016, Imatinib methanesulfonate reduces hyperphosphorylation of tau following repeated peripheral exposure to lipopolysaccharide, *Neuroscience*, 331: p. 72-7.
- Eimerbrink MJ\*, Kranjac D\*, St Laurent C\*\*, White JD\*, Weintraub MK\*, Pendry RJ\*\*, Madigan R\*\*, Hodges SL\*\*, Sadler LN\*\*, **Chumley MJ**, Boehm GW, 2016, Pre-treatment of C57BL6/J mice with the TLR4 agonist monophosphoryl lipid A prevents LPS-induced sickness behaviors and elevations in dorsal hippocampus interleukin-1 $\beta$ , independent of interleukin-4 expression, *Behav Brain Res*, 302: p. 171-4.
- Eimerbrink MJ\*, White JD\*, Pendry RJ\*\*, Sadler LN\*\*, Wiles JD\*\*, Weintraub MK\*, **Chumley MJ**, and Boehm GW. Administration of the inverse benzodiazepine agonist MRK-016 rescues acquisition and memory consolidation following peripheral administration of bacterial endotoxin. *Behavioral Brain Research*, 2015, 288, 50-53.
- Weintraub MK\*, Kranjac D\*, Eimerbrink MJ\*, Pearson, SJ\*, Vinson BT\*, Patel, J\*\*, Summers WM\*\*, Parnell, TB\*\*, Boehm GW, **Chumley MJ**. Peripheral administration of polyI:C leads to increased hippocampal amyloid-beta and cognitive deficits in a non-transgenic mouse. *Behavioural Brain Research*, 2014, 266, 183-187.
- Weintraub MK\*, Bisson CM.\*\* , Nouri JN\*\*, Vinson BT\*, Kranjac D.\* , Eimerbrink MJ\*, Boehm GW, **Chumley MJ**. Imatinib Methanesulfonate Reduces Hippocampal Amyloid-Beta And Restores Cognitive Function Following Repeated Endotoxin Exposure. *Brain, Behav, and Imm*, 2013, 33, 24-28.
- Kranjac D\*, Koster KM\*\*, Weintraub MK\*, Eimerbrink MJ\*, Womble BM\*\*, Cooper BG, **Chumley MJ**, Boehm GW. Peripheral administration of d-cycloserine rescues

- memory consolidation following bacterial endotoxin exposure. *Behavioral Brain Research*, 2013. 243: p. 38–43.
- Kahn MS\*, Kranjac D\*, Alonzo CA\*\*, Haase JH\*\*, Cedillos RO\*\*, McLinden KA\*, Boehm GW, and **Chumley MJ**. Prolonged elevation in hippocampal Abeta and cognitive deficits following repeated endotoxin exposure in the mouse. *Behavioral Brain Research*, 2012. 229(1): p. 176–84.
- Kranjac D\*, McLinden KA\*, Koster KM\*\*, Kaldenbach DL\*\*, **Chumley MJ**, and Boehm, GW. Peripheral administration of poly I:C disrupts contextual fear memory consolidation and BDNF expression in mice. *Behavioural Brain Research*, 2012. 228(2): p. 452–7.
- McLinden K\*, Kranjac D\*, Deodati LE \*\*, Kahn M \*\*, **Chumley MJ**, Boehm GW. Age Exacerbates Sickness Behavior Following exposure to a viral mimetic. *Physiol Behav*, 2012. 105(5): p. 1219–25.
- Kranjac D\*, McLinden KA\*, Deodati LE\*\*, Papini MR, **Chumley MJ**, Boehm GW. Peripheral bacterial endotoxin administration triggers both memory consolidation and reconsolidation deficits in mice, *Brain, Behav, and Imm*. 2012. 228(2): p. 452–7.
- Genander M, Halford MM, Xu NJ, Eriksson M, Yu Z, Qiu Z, Martling A, Greicius G, Thakar S, Catchpole T, **Chumley MJ**, Zdunek S, Wang C, Holm T, Goff SP, Pettersson S, Pestell RG, Henkemeyer M, Frisén J. Dissociation of EphB2 signaling pathways mediating progenitor cell proliferation and tumor suppression. *Cell*, 2009, 139(4):679–92.
- García-Ceca J, Jiménez E, Alfaro D, Cejalvo T, **Chumley MJ**, Henkemeyer M, Muñoz JJ, Zapata AG. On the role of Eph signalling in thymus histogenesis; EphB2/B3 and the organizing of the thymic epithelial network. *Int J Dev Biol*, 2009, 53(7): 971–82
- Chumley MJ**, Catchpole T, Silvany RE, Kernie SG, Henkemeyer M. EphB receptors regulate stem/progenitor cell proliferation, migration, and polarity during hippocampal neurogenesis. *J Neurosci*, 2007, 27(49):13481–13490.
- Dravis C, Wu T, **Chumley MJ**, Yokoyama N, Wei S, Wu DK, Marcus DC, Henkemeyer M. EphB2 and Ephrin-B2 Regulate the Ionic Homeostasis of Vestibular Endolymph. *Hear Res*, 2007,223(1–2): 93–104.
- Holmberg J, Genander M, Halford M, Anneren C, Sondell M, **Chumley MJ**, Silvany RE, Henkemeyer M, Frisén J. EphB receptors coordinate migration and proliferation in the intestinal stem cell niche. *Cell*, 2006, 125(6): 1151–1163
- Cowan CA, Yokoyama N, Saxena A, **Chumley MJ**, Silvany RE, Baker LA, Srivastava D, Henkemeyer M. "Ephrin-B2 reverse signaling is required for axon pathfinding and cardiac valve formation but not early vascular development." *Dev Biol*, 2004, 271(2): 263–71.
- Dravis C, Yokoyama N, **Chumley MJ**, Cowan CA, Silvany RE, Shay J, Baker LA, Henkemeyer M. "Bidirectional signaling mediated by ephrin-B2 and EphB2 controls urorectal development." *Dev Biol*, 2004, 271(2): 272–90.
- Himanen JP, **Chumley MJ (Co-First Author)**, Lackmann M, Li C, Barton WA, Jeffrey PD, Vearing C, Geleick D, Feldheim DA, Boyd AW, Henkemeyer M, Nikolov DB.

- "Repelling class discrimination: ephrin-A5 binds to and activates EphB2 receptor signaling." *Nat Neurosci*, 2004, 7(5): 501–9.
- Ait-Azzouzene D, Skog P, Retter M, Kouskoff V, Hertz M, Lang J, Kench J, **Chumley M**, Melamed D, Sudaria D, Gavin A, Martensson A, Verkoczy L, Duong B, Vela J, Nemazee D. "Tolerance-induced receptor selection: scope, sensitivity, locus specificity, and relationship to lymphocyte-positive selection." *Immunol Rev*, 2004, 197: 219–30.
- Halford MM, **Chumley MJ**, Henkemeyer M. "Ephective endocytosis." *Dev Cell*, 2003, 5(4): 536–7.
- Sprott KM, **Chumley MJ**, Hanson JM, Dobrowsky RT. "Decreased activity and enhanced nuclear export of CCAAT-enhancer-binding protein beta during inhibition of adipogenesis by ceramide." *Biochem J*, 2002, 365(Pt 1): 181–91.
- Chumley MJ**, Dal Porto JM, Cambier JC. "The unique antigen receptor signaling phenotype of B-1 cells is influenced by locale but induced by antigen." *J Immunol*, 2002, 169(4): 1735–43.
- Chumley MJ**, Dal Porto JM, Kawaguchi S, Cambier JC, Nemazee D, Hardy RR. "A VH11V kappa 9 B cell antigen receptor drives generation of CD5+ B cells both in vivo and in vitro." *J Immunol*, 2000, 164(9): 4587–93.

#### **b. Papers Presented At Scholarly Meetings**

- Brice, K.N.\* , Hagen, C.\* , Peterman, J.L.\* , Braden, P.N.\* , Figg, J.\*\* , **Chumley, M.J. and Boehm, G.W.** (2019) Effects of Chronic Sleep Restriction on Amyloid Beta and Cognition in C57BL6/J Mice. Society for Neuroscience Annual Conference, Chicago, IL.
- Hagen, C.\* , Figg, J\*\* , Peterman, J.L.\* , **Boehm, G.W., & Chumley, M.J.** (2019) The impact of early developmental stress on anxiety, cognition, and inflammation in adulthood. Society for Neuroscience Annual Conference, Chicago, IL.
- Peterman, J.L.\* , White, J.D.\* , Lopez, S\*\* , Johnson, M.\*\* , **Chumley, M.J. and Boehm, G.W.** (2019) Sex-specific effects of maternal separation on cognition and LPS-induced accumulation of amyloid beta in adult C57BL6/J mice. Society for Neuroscience Annual Conference, Chicago, IL.
- Peterman, J.L.\* , White, J.D.\* , Calcagno, A.\*\* , Eimerbrink, M.J.\* , Hagen, C.\*\* , **Boehm, G.W. & Chumley, M.J.** (2018). Exercise and Enriched Environment are Unable to Prevent Isolation Stress-Induced Exacerbation of Alzheimer's Pathology in 5xFAD Mice. Society for Neuroscience Annual Conference, San Diego, CA.
- Hagen, C.\* , Peterman, J.L.\* , White, J.D.\* , **Curtis, M., Boehm, G.W., & Chumley, M.J.** (2018) Impact of Isolation Stress on Inflammation and Alzheimer's Pathologies in C57BL6/J Mice. University of Texas- San Antonio College of Sciences Research Conference, San Antonio, TX.
- Lopez, S.\*\* , Peterman, J.L.\* , White, J.D.\* , Hardy, A.\* , Eimerbrink, M.J.\* , Paulhus, K.\* , Thompson, M.\* , **Boehm, G.W., Chumley, M.J.** (2018). Previous exposure to LPS increases IgG and IgM while attenuating inflammatory response and A $\beta$  accumulation in mouse hippocampus. University of Texas- San Antonio College of Sciences Research Conference, San Antonio, TX.



- Brice, K. \*, Peterman, J. \*, White, J.D. \*, **Boehm, G.W., & Chumley, M.J.** (2018). Effects of Stress on Contextual Acquisition and Extinction in Mouse Models of Alzheimer's Disease. University of Texas- San Antonio College of Sciences Research Conference, San Antonio, TX.
- Hagen, C. \*, Peterman, J.L. \*, White, J.D. \*, Eimerbrink, M.J. \*, Cooksey, M. \*\*, **Curtis, M., Boehm, G.W., & Chumley, M.J.** (2018) Inflammation and Amyloid-Beta in Conjunction with Isolation Stress in C57BL6/J Mice. Keystone Symposium on Neuroinflammation, Keystone, CO.
- Calcagno, A. \*\*, Quiring, M. \*\*, Peterman, J.L. \*, White, J.D. \*, Hagen, C. \*, **Curtis, M., Boehm, G.W., & Chumley, M.J.** (2018) Effects of Exercise and Enriched Environment on Alzheimer's Disease Pathology in Chronically Stressed Mice. Keystone Symposium on Neuroinflammation, Keystone, CO.
- Peterman, J. L. \*, M.J. Eimerbrink\*, J. D. White\*, **G.W. Boehm and, M.J.Chumley,** (2017) Effects of social isolation on inflammation, LPS-induced hippocampal amyloid-beta expression, and cognitive dysfunction in C57BL/6J mice. Psychoneuroimmunology Research Society, Galveston, TX
- White, J. D. \*, J.L. Peterman\*, A. Hardy\*, M.J. Eimerbrink\*, K.C. Paulhus\*, M.A. Thompson\*, **M.J. Chumley, & G.W. Boehm.** (2017) Prior exposure to repeated LPS injections prevents further accumulation of A $\beta$ . Psychoneuroimmunology Research Society, Galveston, TX
- White, J. D. \*, Peterman, J. L. \*, Hardy, A. \*, Eimerbrink, M. J. \*, Paulhus, K. C. \*, Thompson, M. A. \*, **G.W. Boehm and M.J. Chumley.** (2017) Prior exposure to repeated LPS injections prevents further accumulation of A $\beta$ . Society for Neuroscience, Washington, D.C.
- Peterman, J.L. \*, J.D. White\*, M.J. Eimerbrink\*, K.C. Paulhus\*, M.A. Thompson\*, H.B. Hayes\*, **G.W. Boehm,** and **M.J. Chumley** (2016) Effects of extended isolation stress on A $\beta$  production and cognition in 5xFAD mice. Society for Neuroscience Annual Conference, San Diego, CA.
- Thompson, M.A. \*, K.C. Paulhus\*, J.D. White\*, M.J. Eimerbrink\*, H.D. Moore\*\*, **G.W. Boehm,** and **M.J. Chumley** (2016) Inflammation exacerbates natural anti-amyloid beta antibodies in a murine alzheimer's disease model. Society for Neuroscience Annual Conference, San Diego, CA.
- Eimerbrink, M.J. \*, J.D. White\*, J.L. Peterman\*, R. Pendry\*\*, C. Hagen\*, Moore H\*, **M.J. Chumley** and **G.W. Boehm,** (2016) The influence of stress and inflammation on A $\beta$  production. Society for Neuroscience Annual Conference, San Diego, CA.
- White JD\*, Eimegbrink MJ\*, Hayes HB\*\*, Hardy A\*, Van Enkevort EA\*, Peterman JL\*, **Chumley MJ,** Bohm GW (July 2016), Hippocampal A $\beta$  expression, but not phosphorylated tau, predicts cognitive deficits following repeated peripheral poly I:C administration. Alzheimer's Association International Conference, Toronto, Canada.
- Eimerbrink, M.J. \*, Pendry, R.J. \*\*, Hodges, S.M. \*\*, Wiles, J.D. \*\*, White, J.D. \*, Peterman, J.L. \*, **Chumley, M.J. & Boehm, G.W** (April 15th 2016), Effects of MRK-016 on amyloid-beta induced learning deficits in mice within a contextual fear conditioning paradigm, Texas A&M Institute for Neuroscience 8th Annual Symposium, College Station, TX.

- White, J.D.\* , M.J. Eimerbrink\*, H.B. Hayes\*\*, A. Hardy\*, **G.W. Boehm** and **M.J. Chumley** (October, 2015). Repeated exposure to poly i:c leads to elevations in hippocampal amyloid-beta, cognitive dysfunction, and sustained deficits in burrowing. Society for Neuroscience Annual Conference, Chicago, IL.
- Hodges, S.L.\*\* , M.J. Eimerbrink\*, J.D. Wiles\*\*, J.D. White\*, J.L. Peterman\*, **M.J. Chumley** and **G.W. Boehm** (October, 2015). Effects of MRK-016 on amyloid-beta induced learning deficits in mice in a contextual conditioning paradigm. Society for Neuroscience Annual Conference, Chicago, IL.
- Pendry, R.J.\*\* , R.P. Madigan\*\*, M.D. Eriksson\*\*, J.D. White\*, M.J. Eimerbrink\*\*, **M.J. Chumley**, and **G.W. Boehm**, (October, 2015). *L. reuteri* decreases baseline anxiety, alters fear-related memory, and buffers stress- induced anxiety in C57/BL6 mice. Society for Neuroscience Annual Conference, Chicago, IL.
- White, J.D.\* , M.K. Weintraub\*, M.J. Eimerbrink\*, A.L. Morin\*, S.M. Turner\*\*, S.L. Hodges\*\*, L.N. Sadler\*\*, **G.W. Boehm** and **M.J. Chumley**, 2014, Voluntary Exercise Reduces Alzheimer's-like Pathology After Inflammation in Mice. Society for Neuroscience, Washington, D.C.
- Weintraub, M.K.\* , J.D. White\*, S.M. Turner\*\*, S.L. Hodges\*\*, A.L. Morin\*, L.N. Sadler\*\*, **G.W. Boehm** and **M.J. Chumley**, 2014, Voluntary Exercise Reduces Alzheimer's-like Pathology After Inflammation in Mice, Texas Chapter of the American College of Sports Medicine, Fort Worth, TX.
- Weintraub, M.K.\* , D. Kranjac\*, M.J. Eimerbrink\*, B. T. Vinson\*, J. Patel\*\*, W. Summers\*\*, B. Womble\*\*, **G.W. Boehm**, and **M.J. Chumley**, 2013, The Effects of Poly I:C on Hippocampal Amyloid-Beta and Cognition, Society for Neuroscience, San Diego, CA.
- Weintraub, M. K.\* , C.M. Bisson\*\*, B.T. Vinson\*, M.J. Eimerbrink\*, D. Kranjac\*, **G. W. Boehm** and **M. J. Chumley**, 2013, Imatinib methanesulfonate reduces hippocampal amyloid-beta and restores cognitive function following repeated endotoxin exposure. Psychoneuroimmunology Research Society, Stockholm, Sweden.
- Weintraub, M.K.\* , C.M. Bisson\*\*, and **M.J. Chumley**, 2013, Imatinib Reverses Amyloid Beta-Induced Cognitive Deficits. Southwest Psychological Association, Fort Worth, TX.
- Weintraub, M.K.\* and **M.J. Chumley**, 2013, The Impact of Viral Inflammation on Alzheimer's Disease-Like Pathology. Southwest Psychological Association, Fort Worth, TX.
- Weintraub, M.K.\* , C. Bisson\*\*, B. Vinson\*, M. Eimerbrink\*, D. Kranjac\*, B. Womble\*\*, **G.W. Boehm** and **M.J. Chumley**, 2012, Effects Of Imatinib Methanesulfonate On Inflammation-Induced Amyloid-Beta Production And Cognition, 2012, Society for Neuroscience, New Orleans, LA.
- Kahn, M\*, W. Summers\*\*, D. Kranjac\*, B. Vinson\*, M. Eimerbrink\*, **G. Boehm** and **M. Chumley**, A Potential Link Between Viral Inflammation And Alzheimer's Disease, 2012, Society for Neuroscience, New Orleans, LA.
- Bisson, C.\*\* , M. Kahn\*, J. Nouri\*\*, B. Vinson\*, D. Kranjac\*, M. Eimerbrink\*, **G.W. Boehm** and **M.J. Chumley**, 2012, Gleevec Attenuates Inflammation-Induced

- Amyloid-Beta Production And Restores Cognition, North Texas Life Science Research Symposium, Fort Worth, TX.
- Summers, W.\*\*, M. Kahn, D\*. Kranjac, B. Vinson\*, M. Eimerbrink\*, **G. Boehm, M. Chumley**, 2012, Viral Inflammation And The Onset Of Alzheimer's Disease, North Texas Life Science Research Symposium, Fort Worth, TX.
- Influence of Fitness and Adiposity on Whole Blood Response to  $\alpha$ -MSH Treatment. Integrative Biology of Exercise Scientific Conference, Westminster, CO, October 2012.
- Influence of fitness and adiposity on melanocortin-1 and melanocortin-3 receptors on monocytes. Integrative Biology of Exercise Scientific Conference, Westminster, CO, October 2012.
- Potential Link Between Viral Inflammation and Alzheimer's Disease. Society for Neuroscience National Convention, New Orleans, LA, 2012
- Influence of fitness and adiposity on melanocortin-1 and melanocortin-3 receptors on monocytes. Texas Chapter, American College of Sports Medicine, Annual Meeting, Austin, TX, 2012.
- Potential role for LPS-induced induction of Alzheimer's disease-related pathology and cognitive deficits. Society for Neuroscience National Convention, Washington, D.C., 2011
- The Effects of Heat Acclimation on Heat Shock Protein-72 mRNA and Apoptosis in Lymphocytes. American College of Sports Medicine National Meeting, Denver, CO., 2011
- Potential role for LPS-induced induction of Alzheimer's disease-related pathology and cognitive deficits. Arlington-Ft Worth Society for Neuroscience, Texas Christian University, Fort Worth, TX, 2011
- Influence of aerobic fitness on melanocortin receptor expression in inflammatory monocytes – a novel mechanism of exercise-induced inflammatory reduction. John Peter Smith Health Network Intramural Research Day, Fort Worth TX, 2011
- Lipopolysaccharide-Induced Amyloid-Beta Formation as a Model of Alzheimer's Disease Pathology, Texas Academy of Science. Austin, TX, 2010
- Working and Reference Memory in Ephrin-B1 Knockout Mice. 17<sup>th</sup> Annual National McNair Research Conference, Delavan, WI, 2010
- The effects of peripheral poly I:C on species-typical behavior in adult and aged mice. Psychoneuroimmunology Research Society, Trinity College, Dublin, Ireland, 2010
- The effects of immediate and delayed peripheral LPS administration on contextual fear memory consolidation, BDNF mRNA, and brain/serum expression of cytokines/chemokines in mice. Psychoneuroimmunology Research Society, Trinity College, Dublin, Ireland, 2010
- A Neurogenic Role for EphB Receptors and Ephrins in the Hippocampal Formation. Southwest-Gulf Regional Meeting, Society for Developmental Biology. M.D. Anderson Cancer Center, Houston, TX, 2008

EphB Receptors Coordinate Stem/Progenitor Cell Proliferation and Migration During Hippocampal Neurogenesis. Reprogramming the Human Brain Symposium. University of Texas at Dallas Center for Brain Health, Dallas, TX, 2007

Eph/ephrin Signaling in the Growth Cone. Christopher Reeve Paralysis Foundation, Chicago, IL, 2004

Eph Receptor Tyrosine Kinase and Ephrin Signaling in the Axonal Growth Cone. Southwest and Gulf Coast Regional Society for Developmental Biology, Dallas, TX, 2004

The unique antigen receptor signaling phenotype of B-1 cells is influenced by locale but induced by antigen. Midwinter Conference of Immunologists, Monterey, CA, 1998

A VH11V kappa 9 B cell antigen receptor drives generation of CD5+ B cells both in vivo and in vitro. Midwinter Conference of Immunologists, Monterey, CA, 1997

Immune Dysfunction Following High-Intensity Interval Training. National Strength and Conditioning Association Meeting, New Orleans, LA, 1994

Searching for Markers of Overtraining: Immune Dysfunction Following High-Intensity Interval Training. American College of Sports Medicine National Meeting, Seattle, WA, 1994

Effects of Cold Whirlpool Treatment on Delayed-Onset Muscle Soreness Following Eccentric Exercise. Rocky Mountain Chapter of the American College of Sports Medicine Winter Conference, Frisco, CO, 1993

#### **b. Invited Speaking Engagements**

Could “Catching” a Cold Lead to Alzheimer’s Disease. Department of Molecular Biology and Immunology Seminar, University of North Texas Health Sciences Center, Fort Worth, TX, 2013

EphB Receptors in the Hippocampus: Roles in Neurogenesis and Cognition. Department of Biology Seminar Series, Texas Women’s University, Denton, TX, 2010

What the Eph is Wrong with My Hippocampus? Arlington-Fort Worth Society for Neuroscience, University of Texas at Arlington, Arlington, TX, 2009

Daddy, I Got Lots of Ephs: A Role for B-Class Eph Receptors and Ephrins in Hippocampal Neurogenesis. Department of Biological Sciences, Southern Methodist University, Dallas, TX, 2006

Eph-ective Inflammation: A Role for the EphB Receptor Tyrosine Kinases During Acute Inflammation. Department of Molecular Biology and Immunology, University of North Texas Health Sciences Center, Fort Worth, TX, 2006

A Role for EphB Receptors and Ephrins in the Hippocampal Formation. Stem Cells in Neuroscience Series. University of Texas Southwestern Medical Center. 2006

To B-1 or Not To B-1: Development of B-1 Lymphocytes from the Adult Bone Marrow. University of Kansas, Department of Molecular Biosciences, Lawrence, KS, 2000

Immune Dysfunction Following High-Intensity Interval Training. American College of Sports Medicine National Meeting, Seattle, WA, 1994

## ACADEMIC ADVISING ACTIVITIES

Summer 2020: 5 Medical School mock interviews  
Spring 2020: 17 formal appointments (Undergraduate)  
Fall 2019: 19 formal appointments (Undergraduate)  
Summer 2019: 11 formal appointments (Undergraduate – 3, Graduate – 2, Medical School Mock Interviews – 6)  
Spring 2019: 29 formal appointments (Undergraduate)  
Fall 2018: 30 formal appointments (Undergraduate)  
Summer 2018: 11 formal appointments (Undergraduate – 3, Graduate – 2, Medical School Mock Interviews – 6)  
Spring 2018: 26 formal appointments (Undergraduate)  
Fall 2017: 39 formal appointments (Undergraduate)  
Summer 2017: 11 formal appointments (Undergraduate – 3, Graduate – 2, Medical School Mock Interviews – 6)  
Spring 2017: 32 formal appointments (Undergraduate – 32)  
Fall 2016: 24 formal appointments (Undergraduate)  
Summer 2014: 19 formal appointments (Undergraduate – 6, Graduate – 2, Medical School Mock Interviews – 11)  
Spring 2015, 58 formal appointments (Undergraduates)  
Fall 2014: 37 formal appointments (Undergraduate)  
Summer 2014: 15 formal appointments (Undergraduate – 3, Graduate – 2, Medical School Mock Interviews – 10)  
Spring 2014: 49 formal appointments (Undergraduate – 49)  
Fall 2013: 50 formal appointments (Undergraduate – 47, Graduate – 3)  
Summer 2013: 17 formal appointments (Undergraduate – 4, Graduate – 2, Medical School Mock Interviews – 11)  
Spring 2013: 36 formal appointments (Undergraduate – 34, Graduate – 2)  
Fall 2012: 44 formal appointments (Undergraduate – 43, Graduate – 1)  
Summer 2012: 6 formal appointments (Medical School Mock Interviews – 6)  
Spring 2012: 26 formal appointments (Undergraduate – 25, Graduate – 1)  
Fall 2011: 29 formal appointments (Undergraduate – 28, Graduate – 1)  
Summer 2011: 9 formal appointments (Medical School Mock Interviews – 9)  
Spring 2011: 34 formal appointments (Undergraduate – 34)  
Fall 2010: 20 formal appointments (Undergraduate – 20)

## PROFESSIONAL ACTIVITIES

Journal Referee: *Animal Cells and Systems; Journal of Neuroinflammation; Behavioural Brain Research; Brain, Behavior, and Immunity, Frontiers in Psychiatry, Neuroscience,*

Textbook Review: *The Immune System*, by Peter Parham. Published by Garland Scientific

Proposal Referee: Medical Research Council, London, U.K.

## **DEPARTMENTAL SERVICE**

Chair, Department of Biology, 2016-2019  
Committee on Graduate Studies, 2011– 2016  
Curriculum Committee, 2012 – 2016  
Tenure-Track Geneticist Search Committee Chair, 2013  
Tenure-Track Physiologist Search Committee, 2012  
Monday at TCU, 2009 – present

## **COLLEGE SERVICE**

Health Professions Advisory Committee (2010 – present)  
CSE Safety Committee (2009)

## **UNIVERSITY SERVICE**

TCU/UNTHSC Medical School Curriculum Committee (2015 – 2016)  
TCU Honor's College Task Force on Departmental Honors (2016)  
TCU Environmental Health and Safety Committee (2009 – 2012)

## **COMMUNITY SERVICE AND OUTREACH**

UNTHSC Institutional Biosafety Committee, 2019 – Present  
Keller High School Music Department photographer, 2018-Present  
Keller Independent School District Educational Improvement Committees (2017-Present)  
Steering committee member, North Texas Life Science Research Symposium (2012 – 2016)  
*Ad hoc* Microscopy Core Tours and Demonstrations, 2010 – Present  
Keller Independent School District Campus Educational Improvement Committees, Hidden Lakes Elementary (2012 – 2014), Bear Creek Intermediate (2014-2016), Keller Middle School (2016-present)

## **MEMBERSHIPS IN PROFESSIONAL ORGANIZATIONS**

Psychoneuroimmunology Research Society (2008 – present)  
American Association for the Advancement of Science (2007 – present)  
Society for Neuroscience (2007 – present)

## **PROFESSIONAL HONORS AND AWARDS**

Wassenich Award for Mentoring, Winner, 2014  
Wassenich Award for Mentoring, Nominee, 2013  
John V. Roach Honors College Professor of the Year, 2013  
Mortar Board Preferred Professor, 2010 – 2011  
TCU Senior Class Legacy Honoree, 2010, 2011, 2013, 2014, 2016  
Mortar Board Preferred Professor, 2009 – 2010

## **RESEARCH HONORS AND AWARDS FOR MENTORED STUDENTS**

Jordon White, TCU Outstanding Dissertation Award, 2018  
Marielle K. Weintraub, Trainee Scholar Travel Award, PsychoNeuroImmunology Research Society Annual Meeting, Stockholm, Sweden, 2013  
Marielle K. Weintraub, Graduate Presentation Award Showcase, Southwest Psychological Association Annual Conference, Fort Worth, TX, 2013  
Whitney Summers, Undergraduate Presentation Award Showcase, Southwest Psychological Association, Fort Worth, TX, 2013  
Marielle K. Weintraub, 1<sup>st</sup> place Graduate Interdisciplinary Poster, TCU College of Science and Engineering Student Research Symposium, 2012  
Whitney Summers, 1<sup>st</sup> place Undergraduate Interdisciplinary Poster, TCU College of Science and Engineering Student Research Symposium, 2012  
Matt Unthank, 2<sup>nd</sup> place Graduate Presentation Award, Texas Chapter of the American College of Sports Medicine Annual Meeting, 2012  
Marielle S. Kahn, 1<sup>st</sup> place Graduate Interdisciplinary Poster, TCU College of Science and Engineering Student Research Symposium, 2011  
Kelyn Rola, 2<sup>nd</sup> place Graduate Presentation Award, Texas Chapter of the American College of Sports Medicine Annual Meeting, 2011