Leeds School of Business
UNIVERSITY OF COLORADO BOULDER

Current Vita

Mathew R. Arnold, Ph.D.
Résumé/Abbreviated Curriculum Vitae
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ResearchGate: https://www.researchgate.net/profile/Mathew_Arnold

1. EDUCATION

University of Colorado Boulder, Boulder, CO 2011 – 2018
Doctor of Philosophy (Neuroscience, Psychopharmacology)
Doctor of Philosophy (Integrative Physiology, Behavioral Neuroendocrinology) *Dissertation title: Organic Cation Transporter 3 (OCT3): Characterization and description of a second serotonin presynaptic transporter*

University of Colorado Boulder, Boulder, CO 2007 – 2011
Pre-medicine post-baccalaureate studies

University of Colorado Boulder, Boulder, CO 2000 – 2006
Bachelor of Arts (Psychology)
Bachelor of Arts (Environmental, Population, and Organismic Biology)

2. TEACHING EXPERIENCE

Aug 2023 –Dec 2023 University of Colorado Boulder, Boulder, CO. Leed's School of Business. Instructor.
- BCOR 2205 (4 sections)

Aug 2023 University of Colorado Boulder, Boulder, CO. Leed's School of Business. Instructor •
BCOR 1025 (1 section)

Jan 2023 –May 2023 University of Colorado Boulder, Boulder, CO. Leed's School of Business. Instructor
- BCOR 1025 (3 sections)
  BUSM 3010 (2 sections)

Aug 2022 –Dec 2022 University of Colorado Boulder, Boulder, CO. Leed's School of Business. Instructor.
- BCOR 2205 (8 sections)
  BUSM 3010 (2 sections)

August 2022 University of Colorado Boulder, Boulder, CO. Leed's School of Business. Instructor. •
BCOR 1025 (1 section)

Jan 2022 –May 2022 University of Colorado Boulder, Boulder, CO. Leed's School of Business. Instructor
- BCOR 1025 (3 sections)
  BUSM 3010 (3 sections)

Aug 2021 –Dec 2021 University of Colorado Boulder, Boulder, CO. Leed's School of Business. Instructor.
- BUSM 3010 (3 sections)

BCOR 2205 (7 section)

May 2021 University of Colorado Boulder, Boulder, CO. Leed's School of Business. Lecturer. •
BAIM 4065 (1 section)

Jan 2021 –May 2021 University of Colorado Boulder, Boulder, CO. Leed's School of Business. Lecturer.
- BCOR 1025 (3 sections)

BUSM 3010 (3 sections) BCOR 2205 (1 section)

Jan 2020- Dec 2020 University of Leeds School of Business UNIVERSITY OF COLORADO BOULDER Colorado Boulder, Boulder, CO. Leed's School of Business. Adjunct Professor.

- BCOR 1025 (3 sections)
  BCOR 2205 (1 section)

Jan 2019 –May 2019 University of Colorado Boulder, Boulder, CO. Department of Psychology. Teaching Assistant. •
NRSC 2100 (5 sections)

Aug 2012 –Dec 2018 University of Colorado Boulder, Boulder, CO. Department of Integrative Physiology. Teaching Assistant.

- IPHY 3415 Human Anatomy (2 sections per semester)
  IPHY 4720 Neurophysiology (3 sections per semester)
  IPHY 2800 Statistics- (R statistical stoftware) (3 sections per semester)
  IPHY 3480 Human Physiology II (grader and office hours)
  IPHY 3470 Human Physiology I (grader and office hours)

2004-2005, 2011 University of Colorado Boulder, Boulder, CO. Department of Chemistry and Biochemistry, Teaching Assistant.

- CHEM 1021 Principles of Chemistry (3 sections per semester)
  CHEM 1111 Inorganic Chemistry I (2 sections per semester)

2003, 2011-2012 University of Colorado Boulder, Boulder, CO. Department of Ecology and Evolutionary Biology. Teaching Assistant.

- EBIO 1240 General Biology 2 (3 sections per semester)

May 2001 –May 2002 Red Rock Community College, Lakewood, CO. Department of Biology. Teaching Assistant.

- BIO 111 (1 section per semester)
  BIO 112 (1 section per semester)

3. PROFESSIONAL/CLINICAL EXPERIENCE

May 2018 - current	University of Colorado Boulder, Boulder, Colorado, Post-doctoral research associate/ consultant.
August 2011 - May 2018	University of Colorado Boulder, Boulder, Colorado, Graduate research associate
December 2005 – August 2009	University of Colorado Boulder, Boulder, Colorado, Research assistant
June 2007 – December 2009	Wardenburg Health Center/Centura Health, Emergency Medical Technician

4. OUTREACH/SERVICE/VOLUNTEER

March 2023-current	CU Fly Fishing Team, Boulder, CO. Faculty Sponsor
October 2022- March 2023	Teaching Innovation Award Committee, Boulder, CO.
March 2022-Current	Integrative Psychiatric Institute, Boulder, CO. Consultant.
November 2019	BrainStormLive, Evanston, IL. Guest lecturer
June 2018	Science Discovery, Boulder, CO. Guest lecturer
May 2017	Ignite Boulder, Boulder, CO. Speaker
May 2013 – November 2015	Lighthearted Ranch, Boulder, CO. Ranch Manager
September 2011 – May 2014	LabEx, Boulder, CO. Director
May 2013	Denver Public Schools, Denver, CO. Regional Science Fair Judge
April 2013	University of Colorado Boulder, Boulder, CO. Graduate Teacher Program

September 2011– September 2012 Adelante!, Boulder, CO. High school tutor
May 2008 – September 2011 University of Colorado Boulder, Boulder, CO. Research assistant- exercise physiology May 2007 – August 2010 Lyft service, Littleton, CO. Volunteer EMT

SUPERVISED RESEARCH TRAINEES

Date	*Name, and Current Position*
2011-2015	Piper Williams, *HHMI-funded undergraduate trainee*
2011-2015	Jessi McArthur, *HHMI-funded undergraduate trainee*
2015	Solana Archuleta, *HHMI-funded undergraduate trainee*
2016-2018	Tessa Smith, *UROP-funded undergraduate trainee*
2016-2018	Kaley Holmes, *UROP-funded undergraduate trainee*
2016	Emma Simmerman, *UROP-funded undergraduate trainee*
2016	Alex Outzen, *UROP-funded undergraduate trainee*
2016-2018	Kadi Nguyen, *UROP-funded undergraduate trainee*
2016-2018	K'loni Schnabel, *UROP-funded undergraduate trainee*
2017-2018	Chloe Gates, *UROP-funded undergraduate trainee*
2016-2018	Meg Lieb Masters student
2017-2018	Kelsey Loupy Masters student
2017-2018	Sylvana Noronha PhD Student
2019	Ama Luthens, *UROP-funded undergraduate trainee*
2019	Stephanie Salazar, *UROP-funded undergraduate trainee*
2022-2023	Zoey Donahue, High School Science Fair

PROFESSIONAL SOCIETIES

2012-present Society for Neuroscience

5. SELECT PEER REVIEWED SCIENTIFIC PUBLICATIONS

- Sylvana ISRN, Arnold MR, et al., High fat diet, microbiome-gut-brain axis signaling, and anxiety-like behavior in male rats. Biological Research (Submitted 10/2023)
- Jones AS, Arnold MR, et al, Whole-body heating activates spinoparabrachial pathways, spinothalamic pathways, and hedonic circuitry in male rats. Behavioral and Cognitive Neuroscience (Response to reviewer's comments letter)
- Cho C, Arnold MR, et al., Effects of immunization with the soil-derived bacterium Mycobacterium vaccae on stress coping behaviors and cognitive performance in a "two hit" stressor model". (2021)
- Loupy KM, Cler KE, Marquart BM, Yifru TW, D'Angelo HM, Arnold MR, Elsayet AI, Gebert MJ, Fierer N, Fonken LK, Frank MG, Zambrano CA, Maier SF, Lowry CA; Comparing the effects of two different strains of Mycobacterium vaccae, M. vaccae NCTC 11659 and M. vaccae ATCC 15483, on stress-resilient behaviors and lipid-immune signaling in rats (2021) Brain, Behavior, and Immunity
- Smith Z, Arnold MR, et al, Effects of immunization with heat-killed Mycobacterium vaccae on autism spectrum disorder-like behavior and epileptogenesis in a rat model of comorbid autism and epilepsy (2020). Brain, Behavior, and Immunity
- Arnold MR, McArthur J, Greenwood BN, Fleshner M, Lowry CA, Effects of repeated voluntary or forced exercise on rat brain serotonergic systems. (2020) Brain and Behavioural Research
- Arnold MR, McArthur J, Williams P, Bachtell R, Lowry CA. Effects of chronic caffeine exposure on rat brain serotonergic systems. (2019). Neuropharmacology
- Hassell Jr. JE,, Arnold MR, et al., Treatment with a heat-killed preparation of Mycobacterium vaccae enhances fear extinction in the fear-potentiated startle paradigm. (2019). Brain Behav Immun
- Lieb MW, Weidner M, Arnold MR, Nguyen KT, Hassell Jr. JE, Schnabel KS, Kern R, Day HEW, Lesch KP, Waider J, Lowry CA, Effects of maternal separation on serotonergic systems in the dorsal and median raphe nuclei of adult Tph2deficient mice. (2019) Behav Brain Res

- Loupy KM, Arnold MR, et al., Evidence that preimmunization with a heat-killed preparation of Mycobacterium vaccae reduces corticotropin-releasing hormone mRNA expression in the extended amygdala in a fear-potentiated startle paradigm. (2019) Brain Beha Immun
- Fox JH, Hassell JE Jr, Siebler PH, Arnold MR, Lamb AK, Smith DG, Day HEW, Smith TM, Simmerman EM, Outzen AA, Holmes KS, Brazell CJ, Lowry CA (2017) Preimmunization with a heat-killed preparation of Mycobacterium vaccae enhances fear extinction in the fear-potentiated startle paradigm. Brain Behavior and Immunity. 66, 70-84.
- Waider J, Popp S, Lange MD, Kern R, Kolter JF, Kobler J, Donner NC, Lowe KR, Malzbender JH, Brazell CJ, Arnold MR, Aboagye B, Schmitt-Bohrer A, Lowry CA, Pape HC, Lesch KP (2017) Genetically driven brain serotonin deficiency facilitates panic-like escape behavior in mice. Transl Psychiatry 7(10):e1246.

6. MANUSCRIPTS IN PREPARATION OR SUBMITTED IN PEER-REVIEWED JOURNALS

- Arnold MR, McArthur J, Williams P, Talboom J, Lowry CA. Organic cation transporter 3 (SLC22a3), an alternative presynaptic transporter of serotonin. In preparation.
- Kolarz A, Arnold MR, et al., Assessing the role of CRHR2 in stress vulnerability. In preparation.
- Arnold MR, Stafford N, et al., Direct comparison of intermittent swim stress. In preparation.
- Heinze JD, Arnold MR, et al., Chronic amphetamine treatment and withdrawal increases anxiety like behaviors in association altered corticotropin-releasing hormone systems in the rat extended amygdala. In preparation.
- Arnold MR, et al., Efficacy of N-methyl Citalopram, selective serotonin reuptake inhibitors that do not cross the blood brain barrier. In preparation.
- Zambrano C, Arnold MR, et al., Effects of inescapable shock after m. vaccae treatment on serotonin system activation. In preparation.
- Arnold MR, et al., Effects of selectively breading High versus Low activity mice on microbiome and key serotonergic gene expression. In preparation.

PAPERS PUBLISHED IN NON-REFEREED CONFERENCE PROCEEDINGS

• **Arnold M**R*, et al, Organic Cation Transporter 3 (OCT3): Characterization and description of a second serotonin presynaptic transporter. San Diego, CA*, USA: Society for Neuroscience, Online. 2019.
• **Arnold M**R, Greenwood B, McArthur J, Clark P, Fleshner M, Lowry C (2015) Effects of repeated voluntary or forced exercise on rat brain serotonergic systems. Program No. 435.11. 2015 Neuroscience Meeting Planner. Chicago, IL, USA: Society for Neuroscience, Online. 2015.
• Williams P, **Arnold MR**, McArthur J, Bachtell R, Lowry CA. Effects of chronic caffeine exposure on rat brain serotonergic systems Soc for Neuroscience Abstr. (2015).
• **Arnold MR**, Greenwood BN, McArthur JA, Clark PJ, Fleshner M, Lowry CA. Effects of chronic voluntary or forced exercise on rat brain thermosensitive serotonergic systems. Program No. 277.20. *2013 Neuroscience Meeting Planner. San Diego, CA, USA: Society for Neuroscience, Online*. 2013.

PAPERS PRESENTED AT PROFESSIONAL CONFERENCES BUT NOT PUBLISHED

• **Arnold MA**, Greenwood BN, McArthur JA, Clark PJ, Fleshner M, Lowry CA. Effects of repeated voluntary or forced exercise on rat brain thermosensitive serotonergic systems. Front Range Neuroscience Group Meeting, Fort Collins, CO, USA, December 4, 2013.

• **Arnold MA**, Williams PH, McArthur JA, O'Neill, CE, Lowry CA, Bachtell RK. Effects of chronic caffeine exposure on rat brain serotonergic systems. Front Range Neuroscience Group Meeting, Fort Collins, CO, USA, December 9, 2015.

Skills/Experience Overview: Study plan/protocol development and implementation, research assistant mentoring and management, problem solving, literature reviews and written communication, public speaking and scientific presentations, intramural and extramural proposal preparation and evaluation, internal and external collaboration with industry and university colleagues.

Professional Skills Overview: Single, double, triple, and quadruple label immunohistochemistry; Single label *in situ* hybridization; Double label fluorescent *in situ* hybridization (d-FISH); c-Fos brain mapping; Extracellular single-unit recording (electrophysiology); Super resolution microscopy including n-SIM and n-STORM; 3-D n-STORM; Cloning, PCR, and rt-PCR; Riboprobe design and construction; Brain sectioning and tissue punch; Whole body perfusions; Stereotaxic surgery; In cisterna magna injection; Running wheel set-up and data analysis; Novel controllable / yoked uncontrollable wheel running protocol; Software packages including- CorelDraw, SigmaPlot, Mendeley, Excel, R, Data Robot, NIS, Image J, Spike 2, SPSS