

CURRENT POSITION

2024 – Present **California State University, Long Beach (CSULB)**
Assistant Professor of Evolutionary Biology
Cadney Lab PI

EDUCATION

2015 – 2021 **University of California, Riverside (UCR)**
Ph.D. in Evolution, Ecology, and Organismal Biology
2014 **Los Angeles Natural History Museum**
Herpetology, Phylogenetics Internship
2008 – 2013 **California State University, Long Beach (CSULB)**
B.Sc. in General Biology (minor in Chemistry)

GRANTS AND AWARDS

2022 – 2024 **UC President's Postdoctoral Fellowship Program (PPFP)**
UCSB Mentorship with Dr. Soojin Yi
2016 – 2021 **Graduate Research Fellowship Program (GRFP)**
National Science Foundation
2015 – 2016 **Eugene Cota Robles Award (ECRA)**
UCR Fellowship

SKILLS & RESEARCH EXPERIENCE

2022 – 2024 **University of California, Santa Barbara**
Postdoctoral Researcher; Mentor: Dr. Soojin Yi
Exploration of the epigenetics of the high-runner mouse model:

- HPC (Linux cluster) data analysis of RNA-seq (DESeq2, WGCNA)
- DNA and RNA extraction
- Gel electrophoresis, spectrophotometry, and fluorometry QC, PCR

2015 – 2021 **University of California, Riverside**
Graduate Researcher; Advisor: Theodore Garland Jr
Selection experiment and whole-body performance of house mouse bred for voluntary wheel-running:

- Statistical modeling (R, Python, SAS, SPSS)
- Measured maximal aerobic capacity (VO₂max) via open-system respirometry
- Ran ELISA kits for various hormones, such as corticosterone and leptin
- Measured body fat composition (via MRI) and blood lipid profile in longitudinal study
- Conducted various experiments involving animal behavior
- Misc. skills: Office 365 Suite, 3D Modeling (Blender), Educational course development

Curriculum Vitae

Marcell D. Cadney, Ph.D.

(562) 241 – 2357
marcellcadney.com

2010 – 2013

California State University, Long Beach

Undergraduate Research Project with Dr. Ashley J. Carter

“A Comparative Analysis of Brain Size & Environmental Temperature”

- Comparative methods

TEACHING EXPERIENCE

2024 – Present

California State University, Long Beach

Instructor

2024 Fall BIOL 312 Evolutionary Biology

2024 Fall BIOL 342L Mammalian Physiology Lab

2017 – 2021

University of California, Riverside

Teaching Assistant

2021 Winter HNPG 150 Honors 3rd Year (Remote)

2020 Summer BIOL 105 Evolution (Remote)

2018 Spring BIOL 005B Introduction to Organismal Biology

2018 Winter BIOL 005C Introductory Evolution & Ecology

2017 Fall BIOL 105 Evolution (Remote)

PROFESSIONAL SOCIETIES

- American Physiological Society
- Society for Integrative and Comparative Biology

CONFERENCE PRESENTATIONS

May 2024
Pasadena, CA

100 Generations of Artificial Selection: Differential gene expression and the evolution of gene networks in response to selection of a complex trait
Southern California Evolution Regional Meeting (SCaE)

May 2023
Irvine, CA

The Evolution of Gene Expression in the Hippocampus of High Runner Mice after 100 Generations of Artificial Selection
Southern California Evolution Regional Meeting (SCaE)

January 2023
Austin, TX

100 Generations of Selection in the High Runner Mice: Perspectives
Society of Integrative and Comparative Biology (SICB)

January 2022
Phoenix, AZ

Long-lasting effects of early fructose diet on adult activity
Society of Integrative and Comparative Biology (SICB)

April 2021
Remote Meeting

Symposium: Evolutionary physiology of locomotor behavior
Invited speaker at Experimental Biology (EB)

February 2021
Remote Meeting

Early post-natal maternal effects on voluntary physical activity
Society of Integrative and Comparative Biology (SICB)

January 2018
San Francisco, CA

Early-life effects of a high-fructose diet on adult physical activity
Society of Integrative and Comparative Biology (SICB)

November 2016
Phoenix, AZ*Early-life effects of diet and exercise on adult physical activity*
Exercise: American Physiological Society (APS)**PUBLICATIONS**

Schwartz, N. E., M. P. Schmill, **M. D. Cadney**, A. A. Castro, D. A. Hillis, M. P. McNamara, J. O. Rashid, W. Lampman, D. F. DeLaCruz, B. D. Tran, N. L. Trutalli, and T. Garland, Jr. 2024. Maternal exercise opportunity before, during, and after pregnancy alters maternal care behavior, offspring development, and offspring survival, but has few effects on offspring adult physical activity or body composition. *Physiology & Behavior*. In press.

Latchney, S. E., **M. D. Cadney**, A. Hopkins, and T. Garland Jr. 2023. Maternal upbringing and selective breeding for voluntary exercise behavior modify patterns of DNA methylation and expression of genes in the mouse brain. *Genes, Brain and Behavior* e12858. [PDF](#)

McNamara, M. P., E. M. Venable, **M. D. Cadney**, A. A. Castro, M. P. Schmill, L. Kazzazi, R. N. Carmody, and T. Garland, Jr. 2022. Weanling gut microbiota composition of a mouse model selectively bred for high voluntary wheel-running behavior. *Journal of Experimental Biology*. In review. [PDF](#)

Cadney, M. D., R. L. Albuquerque, N. E. Schwartz, M. P. McNamara, A. A. Castro, M. P. Schmill, D. A. Hillis, and T. Garland. 2022. Effects of early-life voluntary exercise and fructose on adult activity levels, body composition, aerobic capacity, and organ masses in mice bred for high voluntary wheel-running behavior. *J Dev Orig Health Dis* 1–12. [LINK](#)

Latchney, S. E., **M. D. Cadney**, A. Hopkins, and T. Garland, Jr. 2022. DNA methylation analysis of imprinted genes in the cortex and hippocampus of cross-fostered mice selectively bred for increased voluntary wheel-running. *Behav Genet* 52:281–297. [PDF](#)

McNamara, M. P., **M. D. Cadney**, A. A. Castro, D. A. Hillis, K. M. Kallini, J. C. Macbeth, M. P. Schmill, N. E. Schwartz, A. Hsiao, and T. Garland Jr. 2022. Oral antibiotics reduce voluntary exercise behavior in athletic mice. *Behavioural Processes* 199:104650. [PDF](#)

Cadney, M. D., L. Hiramatsu, Z. Thompson, M. Zhao, J. C. Kay, J. M. Singleton, R. L. de Albuquerque, M. P. Schmill, W. Saltzman, and T. Garland Jr. 2021. Effects of early-life exposure to Western diet and voluntary exercise on adult activity levels, exercise physiology, and associated traits in selectively bred High Runner mice. *Physiology & Behavior* 234:113389. [PDF](#)

Cadney, M. D., N. E. Schwartz, M. P. McNamara, M. P. Schmill, A. A. Castro, D. A. Hillis, and T. Garland Jr. 2021. Cross-fostering selectively bred high runner mice affects adult body mass but not voluntary exercise. *Physiology & Behavior* 241:113569. [PDF](#)

McNamara, M. P., J. M. Singleton, **M. D. Cadney**, P. M. Ruegger, J. Borneman, and T. Garland, Jr. 2021. Early-life effects of juvenile Western diet and exercise on adult gut microbiome composition in mice. *Journal of Experimental Biology* 224:jeb239699. [PDF](#)

Curriculum Vitae

Marcell D. Cadney, Ph.D.

(562) 241 – 2357
marcellcadney.com

Schmill, M. P., **M. D. Cadney**, Z. Thompson, L. Hiramatsu, R. L. Albuquerque, M. P. McNamara, A. A. Castro, J. C. Kay, D. G. Buenaventura, J. L. Ramirez, J. S. Rhodes, and T. Garland, Jr. 2021. Conditioned place preference for cocaine and methylphenidate in female mice from lines selectively bred for high voluntary wheel-running behavior. *Genes, Brain and Behavior* 20(2):e12700. [PDF](#)

Garland, Jr., T., **M. D. Cadney**, and R. A. Waterland. 2017. Early-life effects on adult physical activity: concepts, relevance, and experimental approaches. *Physiological and Biochemical Zoology* 90:1–14. [PDF](#)