

Dominic (Dom) J. Acri

Medical Neuroscience PhD Candidate

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descendent Sicangu Lakota Oyate

English translation: Burnt Thigh Nation

Federally recognized as “Rosebud Sioux Tribe”

Please visit domjacri.com for interactive CV, talks, & portfolio.

Education

Indiana University School of Medicine

Expected Defense: Summer 2023

Medical Neuroscience – Doctor of Philosophy (PhD Minor: Bioinformatics)

University of Notre Dame

Graduation: May 2018

Neuroscience and Behavior, Honors Track – Bachelor of Science

Research

Jungsu Kim Laboratory – Indianapolis, IN

Sept. 2018 – Present

Dissertation Title: *THE INFLUENCE OF GENETIC DIVERSITY ON TAU AGGREGATE-DRIVEN NEURODEGENERATION*

- Identify genetic modifiers of tau aggregation using genetically diverse animal models
- Perform genomic analyses in murine and invertebrate models of tau-driven neurodegeneration
- Design functional follow up of candidate genetic modifiers

Giles Duffield Laboratory – Notre Dame, IN

Aug. 2014 – May 2018

- Standard laboratory practices: colony maintenance, genotyping, animal husbandry
- Genetic and behavioral analysis of photo-regulation of Anopheline mosquito behavior
- Bioinformatics analysis of gene expression in circadian pathway using DAVID

UND Environmental Research Center – Notre Dame, IN

Summer 2016 & 2017

- Field studies of rhythmic behavior and parasitism of deer mice (*Peromyscus maniculatus*)
- Design of behavioral studies integrating previous knowledge of circadian biology

Publications

Philtjens, S.*, **Acri, D.J.***, Kim, B., Kim, H., Kim, J. (Preprint 2021) Genetic variation in the Diversity Outbred mouse model affects plasma protein abundance. *bioRxiv*, doi.org/10.1101/2020.11.04.367938

de Oliveira Bezerra, D., Rodrigues de Lucena, L.R., Duffield, G.E., **Acri, D.J.**, & Mendes Pontes, A.R. (2020). Activity pattern, budget, and diurnal rhythmicity of the brown-throated three-toed sloth (*Bradypus variegatus*) in northeastern Brazil. *Mammalian Biology*, published online.

Duffield, G.E., **Acri, D.J.**, George, G.F., Sheppard, A.D., Beebe, N.W., Ritchie, S.A., & Burkot, T.R. (2019). Diel flight activity behavior of wild caught *Anopheles farauti* and *An. hinesorum* malaria mosquitoes from northern Queensland, Australia. *Parasites & Vectors*, 12 (1), 48.

Sheppard, A. D., Rund, S. S. C., George, G. F., Clark, E., **Acri, D. J.**, & Duffield, G. E. (2017). Light manipulation of mosquito behaviour: acute and sustained photic suppression of biting activity in the *Anopheles gambiae* malaria mosquito. *Parasites & Vectors*, 10(1), 255.

Presentations

Select presentations

Genetic Diversity Influences Tau-Driven Degeneration in *Drosophila*

- 2022 Tau International Conference (Virtual, poster + flash talk)

Morphological phenotype predicts tau aggregate seeding activity in genetically diverse *Drosophila*

- 2021 AISES National Conference (Phoenix, AZ, oral)

The primacy effects of seasonal shifts on the foraging behavior of wild-caught woodland deer mice

- 2017 Midwest Ecology and Environment Conference (Urbana-Champaign, IL, oral)

Teaching & Mentorship

Teaching Assistantship

GRDM-G771: Analysis of Large Data Sets for Biologists

Fall Semester 2021

- Course director: Li Chen, Ph.D., Assistant Professor of Biostatistics & Health Data Sciences
- Responsibility: 1-hour “Laboratory” sessions in RStudio, Bioconductor, and basic RNA-seq pipelines

Seminars and Invited Lectures

“Mentee”-ship: Making the Most of Undergraduate Research

August 30, 2021

- Building Bridges Mentorship Program (Notre Dame, IN, conference keynote)

Transcriptomic and genetic association approaches for translational biomedical research

March 10, 2021

- Notre Dame Preprofessional Society (virtual, invited lecture)

Medical School for Scientists

Feb 23, 2019

- Balfour Hesburgh Scholarship Program (Notre Dame, IN, invited lecture)

Fellowships, Scholarships & Funding

AISES Lighting the Pathway to Faculty Careers for Natives in STEM	Cohort 3 Member, 2021 – Present
1T32AG071444-01: Training Grant on Alzheimer’s Disease and AD/AD at IU	Appointee, 2021 – Present
Southern Regional Education Board – Doctoral Scholars Program	Scholar, 2019 – Present
Indiana Univ. School of Medicine – Paul & Carole Stark Med Neuro Fellowship	Fellow, 2019 – 2020
Indiana Univ., Purdue Univ., Indianapolis – Graduate Diversity Fellowship	Fellow, 2018 – 2019
Balfour Foundation – Lloyd & Mildred Balfour Scholarship for Minority Students	Scholar, 2014 – 2018
Udall Foundation – Tribal Public Policy Scholarship	Scholar, 2017
University of Notre Dame – Balfour-Hesburgh Program	Scholar & Fellow, 2014 – 2015
University of Notre Dame – College of Science Research Travel Grant	Awardee, 2017
University of Notre Dame – Summer Grant #22502	Awardee, 2015

Research Skills (dates trained)

Wet Laboratory (Animal Models & Molecular Bio)	Dry Laboratory (Proficient in R, Python, Unix)
Invertebrate husbandry (8/2014)	Statistical analyses and figure creation (8/2014)
Protein & RNA extraction (8/2014)	RNAseq – Differential Gene Expression (8/2017)
Quantitative PCR (6/2015)	RNAseq – Enrichment analysis (8/2017)
Western blot (8/2018)	RNAseq – Network analysis (i.e. WGCNA) (1/2019)
Tissue collection – CNS subregions (8/2018)	Quantitative Trait Loci (QTL) Mapping (1/2019)
Mouse breeding and handling (1/2019)	RNAseq – Single Cell/Nuclei seq analysis (1/2019)
RNAseq – Library creation (5/2019)	RNAseq – Read QC & alignment (1/2020)
RNAseq – Isolation for single cell/nuclei seq (5/2019)	QTL – Variant Calling for genotype map (7/2021)

Awards & Memberships

American Indiana Science & Engineering Association	Member, 2019 – Present
Nu Rho Psi (National Neuro Honor Society)	Member, 2018 – Present
Society for Adv. of Native Am. & Chicanos in Science (SACNAS)	Member, 2016 – Present
Society for Neuroscience	Member, 2015 – Present
University of Notre Dame – College of Science Join Annual Meeting	1 st Place Poster Presentation 2018
University of Notre Dame – Neuroscience Department	Outstanding Neuroscience Research Award 2018

Service

Diversity, Inclusion, & Wellness Committee, Stark Neuro. Res. Institute	Member, 2019 – Present
Hoosier Science & Engineering Fair	Middle School Judge, 2018 – Present
SACNAS, IUSM Chapter	Member & President, 2018 – Present
Building Bridges Mentorship Program	Member, Biology Peer Mentor & Alumni Mentor, 2014 – Present
Native American Student Association of Notre Dame	Member & President, 2014 – 2018