

# Dominic (Dom) J. Acri, Ph.D.

## Curriculum Vitae

Email: dominic.acri@nih.gov  
Alternative Email: dominic.acri@gmail.com  
Phone: (717) 903 – 5402

Enrolled Member, Sicangu Lakota Oyate  
(Rosebud Sioux Tribe)

## Experience

**Postdoctoral Fellow (IRTA)** Jan. 2024 – Present  
Bethesda, MD  
Cell Biology & Gene Expression Section (PI: Mark Cookson)  
Laboratory of Neurogenetics, National Institute on Aging (NIA)  
National Institutes of Health (NIH)

**Graduate Research Assistant** Sept. 2018 – Jan. 2024  
Indianapolis, IN  
Jungsu Kim Laboratory  
Indiana University School of Medicine

**Undergraduate Research Assistant** Aug. 2014 – May 2018  
Notre Dame, IN  
Giles Duffield Laboratory  
University of Notre Dame du Lac

## EDUCATION

**Doctor of Philosophy** Aug. 2018 – Feb. 2024  
Major: Medical Neuroscience  
Minor: Bioinformatics  
Indiana University School of Medicine, Indianapolis, IN  
Doctoral Dissertation: “The Influence of Genetic Diversity on Tauopathy”

**Bachelor of Science** Aug 2014. – May 2018  
Major: Neuroscience and Behavior (honors track)  
University of Notre Dame du Lac, Notre Dame, IN  
Thesis: “Diel flight activity behavior of wild caught *Anopheles farauti* and *An. hinesorum* malaria mosquitoes from northern Queensland, Australia”

## RESEARCH FUNDING, FELLOWSHIPS, & SCHOLARSHIPS

NIH/NIA 1T32AG071444-01: Jul. 2021 – Jun. 2022  
Graduate Trainee Fellowship Grant  
“Training Grant on Alzheimer’s Disease and ADRD [Alzheimer’s Disease and Related Dementias] at Indiana University”  
Role: Graduate Trainee

Indiana University School of Medicine Aug. 2019 – Aug. 2020  
“Paul & Carole Stark Medical Neuroscience Fellowship”  
Graduate Trainee Fellowship Grant  
Role: Fellow

Indiana University Purdue University, Indianapolis (IUPUI) Aug. 2018 – Aug. 2019  
“Graduate Diversity Fellowship”  
Graduate Trainee Fellowship Grant  
Role: Fellow

## PUBLICATIONS

---

### Peer-Reviewed Publications

- Dabin, L.C., Kersey, H., **Acri, D.J.**, Sharify, A.D., Lee-Gosselin, A., Lasagna-Reeves, C.A., Oblak, A.L., Kim, J. (*in press*) Loss of Inpp5d has disease-relevant and sex-specific effects on glial transcriptomes. *Alzheimer's & Dementia*, published online.
- So, J., Strobel, O., Wann, J., Kim, K., Paul, A., **Acri, D.J.**, Dabin, L.C., Kim, J., Rho, H.C. (2024) Robust single nucleus RNA sequencing reveals depot-specific cell population dynamics in adipose tissue remodeling during obesity *eLife* 13:RP97981
- Kim, B., Dabin, L.C., Tate, M.D., Karahan, H., Sharify, A.D., **Acri, D.J.**, Al-Amin, M.M., Philtjens, S., Smith, D.C., Wijeratne, H.R.S., Park, J.H., Jucker, M., Kim, J. (2024) Effects of SP11-mediated transcriptome remodeling on Alzheimer's disease-related phenotypes in mouse models of A $\beta$  amyloidosis. *Nature Communications* 15: 3996.
- Acri, D.J.**, You, Y., Tate, M.D., McCord, B., Sharify, A.D., John, S., Karahan, H., Kim, B., Dabin, L.C., Philtjens, S., Wijeratne, H.R.S., Smith, D.C., Lasagna-Reeves, C.A., Kim, J. (2023) Network analysis reveals genetic background-dependent response to misfolded tau aggregates. *Journal of Experimental Medicine*. 220 (11): e20230180
- Bae J., Logan, P.E., **Acri D.J.**, Bharthur, A., Nho K., Saykin A., Risacher S., Nudelman K., Polsinelli A., Pentchev V., Kim J., Hammers D., Apostolova L. (2023) A simulative deep learning model of SNP interactions on chromosome 19 for predicting Alzheimer's disease risk and rates of disease progression. *Alzheimer's & Dementia*, published online.
- 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.
- ### Pre-print Manuscripts
- Horan-Portelance, L., Iba, M., **Acri, D.J.**, Gibbs, J.R., Masliah, E., Cookson, M. (*preprint*) Single-cell spatial transcriptomics reveals molecular patterns of selective neuronal vulnerability to  $\alpha$ -synuclein pathology in a transgenic mouse model of Lewy body disease. *bioRxiv*, available online.
- Acri, D.J.\***, Philtjens, S.\*, Kim, B., Kim, H., Kim, J. (*preprint*) Identification of genetic variants regulating the abundance of clinically relevant plasma proteins using the Diversity Outbred mouse model. *bioRxiv*, available online.

## PRESENTATIONS

---

### Selected Presenting Author

**Acri, D.J.**, . . . Kim, J. (2023/6/15, oral presentation) Diverse Strains Identify Microglial Response to Tau Seeds. Big Ten Neuroscience Annual Meeting. Indianapolis, IN.

**Acri, D.J.**, . . . Kim, J. (2022/6/5, poster presentation) Genetic Variation Modulates Tau-Driven Cell Death and Tau Aggregation Activity. Keystone Symposia: "Neurodegeneration: The Biological Pathways Driving the Future of Therapeutic Development (Z2)," Keystone, CO.

**Acri, D.J.**, . . . Kim, J. (2022/2/22, invited flash talk) Genetic Diversity Influences Tau Aggregate-Driven Degeneration in a *Drosophila* Model of Frontotemporal Dementia. Tau 2022 Conference, Virtual.

### Selected co-Author

Mesecar, M., Duffy, M.F., **Acri, D.J.**, Ding, J., Langston, R.H., Shah, S.I., Nalls, M.A., Scholz, S.W., Whitaker, D.T., Auluck, P.K., Marengo, S., Gibbs, J.R., Cookson, M.R. (2024/4/30, poster presentation) Single Cell Analysis of Age-Related Changes in Human Brain Transcriptome & Epigenome. National Institute on Aging IRP 2024 Postbacc Day, Baltimore, MD.

Weaver S.A., Bone R.N., **Acri D.J.**, Kim J., Kono T., Dahl R., Eizirik D., Syed F., Evans-Molina C. (2023/6/23, poster presentation) Loss of SERCA2 induces mitochondrial dysfunction, increases  $\beta$  cell senescence, and accelerates type 1 diabetes development. American Diabetes Association National Conference, San Diego, CA.

Gillespie, P., Anderson, M., **Acri D.J.**, Fischer, A., Olchawa, N., Dosunmu, S., Ria, T., Kim, J., Graham, B.H. (2022/8/26, poster presentation) Investigation of Mitochondrial Phenotypic Variation across Two Genetic Animal Models: *Drosophila melanogaster* and *Mus musculus*. Medical and Molecular Genetics Annual Symposium, Indianapolis, IN.

Fernandez, A.K., Hodge, M., **Acri, D.J.**, Martinez Contreras, P., Philtjens, S., Lasagna Reeves, C., Kim, J., (2022/7/21, poster presentation) Fly Models of Amyloid-beta- and Tau-Driven Degeneration. Indiana University School of Medicine High School Research Symposium, Indianapolis, IN.

Hodge, M., Fernandez, A.K., **Acri, D.J.**, Martinez Contreras, P., Philtjens, S., Lasagna Reeves, C., Kim, J., (2022/7/21, poster presentation) The Role of Nlg4 and the Bone Morphogenetic Protein (BMP) Pathway in Tau-Driven Neurodegeneration. Indiana University School of Medicine Undergraduate Research Symposium, Indianapolis, IN.

### Seminars, Presentations, and Invited Lectures

**Acri, D.J.** (2024/7/11) Amelioration of Tau and ApoE4-linked glial lipid accumulation and neurodegeneration with an LXR agonist. Summer Training in Aging Research Journal Club #2, National Institute on Aging, Baltimore, MD

**Acri, D.J.** (2023/3/31) Do's and Dont's for collaborating with (wet lab) bench scientists. IUPUI Bioinformatics Club lecture series, Indianapolis, IN

**Acri, D.J.** (2023/1/17, 2 hr course lecture) Genetics of Neurodegeneration. N880: Medical Neuroscience Elective on Neurodegeneration. Course Instructors: Cristian Lasagna-

Reeves & Jungsu Kim, Indiana University School of Medicine, Indianapolis, IN.

**Acri, D.J., . . . Kim, J.** (2022/9/15, oral presentation) Protein Quantitative Trait Loci (pQTL) Mapping with the Olink Mouse Exploratory Panel. Olink Explore Technology – Accelerating Proteomics in Partnership with NGS, Center for Computational Biology and Bioinformatics, Indianapolis, IN.

**Acri D.J.** (2022/1/19) What Do I Bring: Tips for Interacting with Your Mentors. Indiana Latino Institute Indianapolis, IN.

**Acri D.J.** (2021/9/10) Building Your Personal Website Workshop Society for the Advancement of Chicanos and Native Americans in Science (IUSM Chapter): Professional Development Series. Indianapolis, IN.

**Acri D.J.** (2021/8/10) “Mentee”-ship: Making the Most of Undergraduate Research. Building Bridges Mentorship Program: Annual Banquet Keynote, Notre Dame, IN.

**Acri D.J.** (2021/3/10) Transcriptomic and genetic association approaches for translational biomedical research. Notre Dame Preprofessional Society Alumni Series, Virtual

**Acri D.J.** (2019/11/6) Quick Start to Coding in R. IUSM Medical Neuroscience Graduate Organization Professional Development Series, Indianapolis, IN.

**Acri D.J.** (2019/2/2) Medical School for Scientists. Balfour Hesburgh Scholars Program Alumni Series, Notre Dame, IN.

## **AWARDS & HONORS**

---

2023 - 2024	Society for Neuroscience, Neuroscience Scholars Program (Fellow)
2022 - 2023	AISES Lighting the Pathway to Faculty Careers in STEM
2023/6/16	3 <sup>rd</sup> Place Oral Presentation Award, Big Ten Neuroscience Annual Meeting
2018 - 2021	Southern Region Education Board Doctoral Scholars Program
2018/5/21	Outstanding Neuroscience Research Award, University of Notre Dame
2015	Balfour Hesburgh Fellow, University of Notre Dame
2018/5/4	1 <sup>st</sup> Place Poster Award, UND College of Science Joint Annual Meeting
2014	Balfour Hesburgh Scholars Program, University of Notre Dame

## **TEACHING, MENTORSHIP, & PROFESSIONAL DEVELOPMENT**

---

### Teaching

#### **National Institutes of Health**

All of Us Basic Coding Training

Spring 2024

National Library of Medicine & Oak Ridge Institute for Science and Education

Course Director: Dr. Allissa Dillman

Role: Teaching Assistant, 30 learns for 8 hour workshop on RStudio via the AllOfUs Researcher Workbench hosted across two 2-day sessions. Assistance of lecturer for virtual classroom management and implementation of course material to increase coding literacy amongst librarians.

#### **Indiana University School of Medicine, Indianapolis Campus**

G715: Biomedical Science I (Biochemical Basis of Biological Processes)

Fall 2022

Indiana University School of Medicine, Dept of Biochemistry

Course Directors: Dr. Lawrence Quilliam, Dr. Patrick Sheets

Role: Teaching Assistant, 34 students for 15 hours office hours on Biochemistry, Bioinformatics, Cell Signaling, and Pharmacology. Assistance of 16 guest lecturers for 60 hours hybrid classroom management, lecture recording, and web-based learning management system (Canvas).

G771: Analysis of Large Data Sets for Biologists

Fall 2021

Indiana University School of Medicine, Dept of Biostatistics

Course Director: Dr. Li Chen

Role: Teaching Assistant, 12 PhD students for 10 hours laboratory session on programming in R using RMarkdown, Bioconductor, RNAseq Analysis, and single-cell RNA seq Analysis

### **University of Notre Dame du Lac**

Writing and Rhetoric

Fall 2015 – Spring 2018

College of Arts and Letters, University Writing Program

Course Directors: Dr. Matthew Capdevielle, Dr. Nicole McLaughlin

Role: Teaching Assistant, 3-8 students for 2 hours office hours per student specializing in student athletes and TESOL (teaching English to speakers of other languages). Total 10 hours per week for six semesters.

### Mentorship

Aleyah Lewis

Jun. 2024 – Aug. 2024

NIA IRP Summer Student, University of Pennsylvania

Cell Biology and Gene Expression Section, Laboratory of Neurogenetics, NIA/NIH

Role: In-lab Mentor, 40 hours per week on programming in R and RNA seq data analysis

Monica Mesecar

Jan. 2024 – Present

Post-baccalaureate fellow

Cell Biology and Gene Expression Section, Laboratory of Neurogenetics, NIA/NIH

Role: In-lab co-Mentor, 40 hours per week on programming in python, Unix scripting, single nuclei RNA seq analysis

Holly Kersey

Jan. 2023 – Mar. 2023

Rotating PhD Student, IBMG Program, Indiana University School of Medicine

Jungsu Kim Laboratory, Indiana University School of Medicine

Role: In-lab co-Mentor, 10 hours per week on programming in R, Unix scripting, bulk RNA seq analysis

Richard (Richie) Mustaklem

Sept. 2022 – Feb. 2024

Masters of Science in Bioinformatics, Indiana University School of Medicine

Jungsu Kim Laboratory, Indiana University School of Medicine

Role: In-lab Mentor, 15 hours per week on programming in R, Unix scripting, High Performance Computing cluster usage, single cell RNA seq analysis

Ashley Fernandez

May 2022 – Aug. 2022

Avon High School Senior in Project SEED, Indiana Clinical and Translational Science Institute

Jungsu Kim Laboratory, Indiana University School of Medicine

Role: In-lab Mentor, 30 hours per week on *Drosophila* husbandry, experimental design, and image analysis

Meg Hodge

May 2022 – Aug. 2022

Hanover College Sophomore in MPESC, Indiana Clinical and Translational Science Institute

Jungsu Kim Laboratory, Indiana University School of Medicine

Role: In-lab Mentor, 30 hours per week on *Drosophila* husbandry, experimental design, RNA extraction, qPCR

### Professional Development

- Introduction to Evidence-Based Undergraduate STEM Education, CIRTTL course. Fall 2020.
- Lifetime Membership, American Indian Science and Engineering Society (AISES)
- Professional Membership, Nu Rho Psi (National Neuroscience Honors Society)
- Professional Membership, Society for the Advancement of Chicanos and Native Americans in Science (SACNAS)
- Professional Membership, Society for Neuroscience

### **SERVICE**

---

2024 – Present	AISES Government Relations Committee, NIH representative
2023 – Present	Natives in Neuro, co-founder
2020 – 2023	9 <sup>th</sup> – 12 <sup>th</sup> grade Judge Central Indiana Regional Science & Engineering Fair
2019 – 2022	DEI Committee Member, Stark Neuroscience Research Institute
2018 – 2023	6 <sup>th</sup> – 10 <sup>th</sup> grade Judge Hoosier (Indiana) State Science & Engineering Fair
2018 – 2023	SACNAS Member, IUSM Chapter
5/2019 – 5/2020	SACNAS @ IUSM, President
2018 – Present	Neuroscience Alumni Mentor, UND: Building Bridges Mentorship Program
2014 – 2018	Member, Native American Student Association of Notre Dame (NASAND)
5/2016 – 5/2018	NASAND, President