

Myles Allred

EDUCATION

- May 2026 **University of Illinois Chicago**
B.S. in Neuroscience with distinction
B.S. in Mathematical Computer Science concentration in computational mathematics
Honors College; *Summa Cum Laude*, GPA: 4.0
- June 2022 **Eureka High School, Missouri**
Summa Cum Laude, GPA: 4.381

RESEARCH

- July 2026
– Present **Post-Baccalaureate Researcher**, Kempner Institute at Harvard University
Advisor: Dr. SueYeon Chung
- Developing statistical techniques and mathematical theory for characterizing the geometry of neural representation and computation.
- Jan 2026
– May 2026 **Undergraduate Researcher**, UIC MSCS Undergraduate Research Laboratory
Advisor: Dr. Daniel Ingebretson
- Compiled a set of notes with proofs and examples covering topics in topology, topological dynamics, one-dimensional dynamics, the logistic family, complex dynamics of rational maps on the Riemann sphere, the Fatou and Julia sets, and the Mandelbrot set.
- Feb 2024
– July 2026 **Undergraduate Research Assistant**, UIC Department of Psychiatry
Advisor: Dr. Katherine McMurray
- Investigated neurobiology underlying comorbid psychiatric disorders at behavioral, molecular, and circuit level.
 - Characterized a novel rodent model of comorbid AUD/panic disorder using CO₂-inhalation as panicogenic challenge, finding that withdrawal from chronic alcohol increased panic-relevant behavior in a mouse strain-specific manner. Developed a user interface for project-based, ROI-specific, automated machine learning quantification of cFos positive cells. Manuscript in preparation.
 - Investigated role of microglial acid sensor TDAG8 in regulating AUD-associated outcomes and drinking behaviors.
 - Investigated brain-wide functional network disruptions using tissue-clearing techniques (honors thesis).

AWARDS, SCHOLARSHIPS, FELLOWSHIPS

- July 2026 The Kempner Institute at Harvard University – Post-Baccalaureate Fellowship
- Mar 2026 UIC Honors College – Gloria Flaherty Research Scholarship
- May 2025 UIC Honors College – Conference Travel Grant
- May 2025 Research Society on Alcohol – Student Merit and Junior Investigator Meeting Grant
- April 2025 UIC Laboratory of Integrative Neuroscience – Featherstone Scholarship
- April 2025 UIC Laboratory of Integrative Neuroscience – Founders Award in Systems & Behavioral Neuroscience
- April 2024 UIC French Department – Student Showcase Award
- 2022 – 2026 UIC – Merit Tuition Award
- 2022 – 2026 Eureka Lions Club – College Scholarship
- 2022 – 2026 RotoMetrics – College Scholarship

May 2022 EHS PTO – College Scholarship
May 2022 Glory of Missouri – Award for Knowledge

MEMBERSHIP

April 2025 – Present Nu Rho Psi
April 2025 – Present Phi Beta Kappa
2025 – Present Research Society on Alcohol
2024 – Present Society for Neuroscience
2024 – May 2026 UIC Quantum Information Science Society (Club Officer)
Oct 2022 – May 2023 UIC Engineers for a Sustainable World

OTHER EXPERIENCE

June 2025
– Aug 2025 **Teaching Instructor, UIC MSCS Young Scholars Program**
Math program for Chicago high school students. Worked with graduate students to introduce a wide range of topics in college mathematics. Helped with lectures and mentored students in small groups. Coordinated by Dr. Brooke Shipley, Dr. Vishesh Jain, Nick Christo, and Lexie Wheeler.

May 2025
– Aug 2025 **Mentee, UIC MSCS Directed Reading Program**
Mentor: Jennifer Vaccaro
Statistical mechanics and neural systems: Ising models, message passing, Metropolis Monte Carlo simulations, replica method, replica symmetry breaking, dimensionality reduction. Developed Python toolkit for simulation and analysis of Ising systems.

Jan 2025
– May 2025 **Mentee, UIC MSCS Directed Reading Program**
Mentor: Jennifer Vaccaro
Graph representation learning: graph convolutional networks, relation to image convolution and spectral theory, graph-theoretic measures relevant to neural networks.

Jan 2024
– May 2024 **Peer Mentor/TA, UIC BIOS 102**
Teaching assistant for an introductory biology course. Led workshops and discussions on professional development, academic success, and networking.

NON-ACADEMIC PROFESSIONAL EXPERIENCE

May 2023
– Aug 2023 **Land Survey Intern, Civil Design Inc.**
Supervisor: Philip Grout, PLS, pgrout@CivilDesignInc.com
Conducted land, construction, and legal surveys. Created, analyzed, and presented datasets to increase team efficiency in survey and engineering projects.

June 2024
– Sep 2024 **Server Assistant, Aba Restaurant, Chicago**
Supervisor: Nick Gross, ngross@lettuce.com

Oct 2020
– Dec 2022 **Line cook, dishwasher, Dewey's Pizza, Ellisville**
Supervisor: Eric Larson, 314-401-7859

SKILLS

Programming Python, Julia, SageMath, Java
Libraries NumPy, Pandas, PyTorch, matplotlib, scikit-learn
Wet Lab Animal husbandry, fear conditioning, plethysmography, behavioral models, perfusions, immunohistochemistry, fluorescent microscopy, qPCR, iDISCO
Languages English (native), French (B1)

PRESENTATIONS

- April 2026 UIC MSCS Undergraduate Research Laboratory Expo (poster): *"Complex dynamics and the Mandelbrot set"*
- April 2026 UIC Undergraduate Research Forum (poster): *"Brain-wide functional network remodeling drives heterogeneous CO₂-evoked fear behavior during withdrawal from chronic ethanol"*
- Nov 2025 UIC College of Medicine Research Forum (poster): *"A novel mouse model relevant to AUD-panic disorder comorbidity: strain differences in sensitivity to CO₂ inhalation during withdrawal from chronic ethanol"*
- Oct 2025 UIC Dept. of Psychiatry 16th Annual Research Forum (poster): *"A novel mouse model relevant to AUD-panic disorder comorbidity: strain differences in sensitivity to CO₂ inhalation during withdrawal from chronic ethanol"*
- Aug 2025 UIC Directed Reading Program (talk): *"From Monte Carlo simulations to analytic solutions of Ising models"*
- June 2025 Research Society on Alcohol Meeting (poster): *"A novel mouse model relevant to AUD-panic disorder comorbidity: strain differences in sensitivity to CO₂ inhalation during withdrawal from chronic ethanol"*
- May 2025 UIC Directed Reading Program (talk): *"Graph convolutional networks (as an extension of convolution on grids)"*
- Nov 2024 UIC Honors College Undergraduate Research Symposium (poster): *"Microglial acid sensing regulates AUD-associated outcomes and drinking behavior"*
- Oct 2024 Society for Neuroscience Meeting (poster): *"Withdrawal from chronic alcohol increases CO₂ inhalation sensitivity in mice and rats: a novel model relevant to panic and PTSD comorbidity following AUD"*
- Sept 2024 UIC Dept. of Psychiatry 15th Annual Research Forum (poster): *"Developing a novel model relevant to AUD-panic disorder comorbidity: strain differences in sensitivity to CO₂ inhalation during withdrawal from chronic ethanol"*