Cherish Ardinger, PhD

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Education

2018 - 2023
Indianapolis, IN
PhD, Addiction Neuroscience
Indiana University-Purdue University Indianapolis (IUPUI)

2018 – 2020
Indianapolis, IN
Master of Science, Psychology
Indiana University-Purdue University Indianapolis (IUPUI)

2014 - 2016
Towson, MD
Master of Arts, Experimental Psychology
Towson University

2010 - 2014
Towson, MD
Bachelor of Science, Psychology
Towson University
Cum Laude, Psychology Departmental Honors
Minor in LGBT (Lesbian, Gay, Bisexual, Transgender) Studies

Positions

Sep 2025 – Present
Piscataway, NJ
Rutgers Presidential Postdoctoral Fellow
Department of Cell Biology and Neuroscience
Mentor: Rafiq Huda, PhD
Current Research Interests: I am broadly interested in studying the neurobiological causes of and identifying treatments for addiction. My current research focuses on how astrocyte modulation of cell specific striatum circuits contribute to alcohol-related behaviors.

Jan 2024 – Sep '25
Piscataway, NJ
Postdoctoral Fellow, Rutgers University
WM Keck Center for Collaborative Neuroscience
Department of Cell Biology and Neuroscience
Mentor: Rafiq Huda, PhD

2018 – 2023
Indianapolis, IN
Addiction Neuroscience Doctoral Student,
Indiana University-Purdue University Indianapolis (IUPUI)
Mentors: Drs. Christopher Lapish and Nicholas Grahame
Master's Thesis Title: Determining the impact of repeated binge drinking on corticostriatal theta synchrony
Dissertation Title: Leveraging whole brain imaging to identify brain regions involved in alcohol frontloading

2015 – 2018
Edgewood, MD
Aberdeen Proving Ground
Oak Ridge Institute for Science and Education (ORISE) Fellow,
U.S. Army Medical Research Institute of Chemical Defense (USAMRICD)
Mentor: John H. McDonough, PhD
Description: Dr. McDonough's research program primarily focuses on identifying novel treatments for nerve agent-induced seizures. My ORISE fellowship provided training in surgical procedures, EEG data analyses, and significantly developed my laboratory management, mentorship, and scientific communication skills.

2012 – 2016
Towson, MD
Master's and Undergraduate Honors Thesis Student,
Towson University
Mentor: Paul Pistell, PhD
Master's Thesis Title: The use of 3-nitropropionic acid to create a model of aging in mice

Undergraduate Honors Thesis Title: Creation of a peripheral lesion model to examine age-associated learning and memory deficits in mice

2009 – 2011
Frederick, MD
Fort Detrick

NIH Summer Internship Program (SIP) Student Intern
Laboratory of Molecular Immunoregulation, The National Cancer Institute
Mentors: Drs. Katie Stagliano and Arthur Hurwitz
Project: Validation of a prostate-specific STAT3C expression construct

2012 – 2014
Towson, MD

Research Team Member
Gender Identity and Sexuality Lab, Towson University
Mentor: M. Paz Galupo, PhD

Grants and Training Support

Sep 2025 – Present — **Rutgers Presidential Postdoctoral Fellowship**

Jan 2025 - Present — **NIAAA F32: Astrocyte modulation of striatal neuronal activity and behavioral sensitivity to alcohol (AA032173-01)**

2024 – 2025 — **NIDA T32: Rutgers Training in Addiction Research Program (DA055569),** Dr. Christopher Pierce (Principal Investigator), Dr. Rafiq Huda (supervisor / mentor).

2022 – 2023 — **NIAAA T32: Training Grant on Genetic Aspects of Alcoholism (AA007462),** Dr. Cristine Czachowski (Principal Investigator), Drs. Nicholas Grahame and Christopher Lapish (supervisors / mentors).

Publications

https://www.ncbi.nlm.nih.gov/myncbi/cherish.ardinger.1/bibliography/public/

1) **C. Ardinger,** M. D. Morningstar, C. C. Lapish, D. N. Linsenbardt. (2025). Repeated Alcohol Drinking in Mice is Associated with Bidirectional Alterations in Corticostriatal Coherence. *Neuropharmacology.* PMID: 40389153

2) **C. Ardinger,** Y. Chen, A. Kimbrough, N. J. Grahame, C. C. Lapish. (2024). Sex Differences in Neural Networks Recruited by Frontloaded Binge Alcohol Drinking. *Addiction Biology*. PMID: 39256902

3) N. M. Timme, **C. Ardinger**, S. D. C. Weir, R. Zelaya-Escobar, R. Kruger, C. C. Lapish (2023). Non-consummatory behavior signals predict aversion-resistance in head-fixed mice. *Neuropharmacology.* PMID: 37871677

4) **C. Ardinger,** C. C. Lapish, C. L. Czachowski, N. J. Grahame (2022). A Critical Review of Front-loading: A Maladaptive Drinking Pattern Driven by Alcohol's Rewarding Effects. *Alcoholism: Clinical and Experimental Research (ACER).* PMID: 36239713

- ***Awarded the 2023 ACER Journal Award for Early Career Investigator Outstanding Paper***
- ***Chosen by ACER as an Article of Public Interest! (link)***

5) **C. Ardinger,** G. Winkler, C. C. Lapish, N. J. Grahame (2021). Effect of ketamine on binge drinking patterns in crossed high alcohol-preferring (cHAP) mice. *Alcohol*. PMID: 34547429

6) **C. Ardinger**, N. J. Grahame, C. C. Lapish, D. N. Linsenbardt (2020). High Alcohol Preferring Mice Show Reaction to Loss of Ethanol Reward Following Repeated Binge Drinking. *Alcoholism: Clinical and Experimental Research (ACER).* PMID: 32865852

- ***Chosen by ACER as an Article of Public Interest! (link)***

7) H. S. McCarren, M. Eisen, D. Nguyen, P. Dubee, **C. Ardinger,** E. Dunn, K. Haines, A. Santoro, P. Bodner, C. Ondeck. C. Honnold, J. H. McDonough, P. Beske, P. McNutt. (2020). Characterization and treatment of spontaneous recurrent seizures following nerve agent-induced status epilepticus in mice. *Epilepsy Research.* PMID: 32182542

8) E. Dunn, L. Matson, K. Haines, K. Whitten, R. B. Lee-Stubbs, K. Berger, H. S. McCarren, **C. Ardinger**, C. Jackson-Piercy, S. M. Miller-Smith, J. H. McDonough. (2020). Evaluation of fosphenytoin, levetiracetam and propofol as treatments for nerve agent-induced seizures in pediatric and adult rats. *Neurotoxicology.* PMID: 32220603

9) C. Jackson*, **C. Ardinger***, J. H. McDonough, H. S. McCarren (2019) Validating a model of nerve agent-induced status-epilepticus by evaluating the anticonvulsant and neuroprotective effects of scopolamine, memantine, and phenobarbital. *Journal of Pharmacological and Toxicological Methods.* PMID: 30790623 *contributed equally

10) L. Matson, E. Dunn, K. Haines, S. Miller-Smith, R. Lee-Stubbs, K. Whitten, **C. Ardinger**, H. McCarren, J. H. McDonough. (2019). Evaluation of first line anticonvulsants to treat nerve agent-induced seizures and prevent neuropathology in adult and pediatric rats. *Toxicology*. PMID: 31362008

11) H. S. McCarren, J. Arbutus, **C. Ardinger**, E. Dunn, C. Jackson, J. H. McDonough (2018) Dexmedetomidine stops nerve agent-induced status epilepticus. *Epilepsy Research.* PMID: 29414381

12) K. Haines, L. Matson, E. Dunn, **C. Ardinger**, D. Bibi, J. H. McDonough, M. Bialer (2018) Comparative efficacy of valnoctamide and sec-butylpropylacetamide (SPD) in terminating nerve agent-induced seizures in pediatric rats. *Epilepsia.* PMID: 30615805

13) L. Matson, R. B. Lee-Stubbs, L. Cadieux, J. A. Koenig, **C. Ardinger**, J. Chandler, E. A. Johnson, H. M. Hoard-Fruchey, T.M. Shih, J. H. McDonough (2018) Assessment of mouse strain differences in baseline esterase activities and toxic response to sarin. *Toxicology*. PMID: 30172647

Honors and Awards

Apr 2024	**Rutgers Brain Health Institute Trainee Travel Award**
Apr 2023	**Research Society on Alcohol (RSA) Student Merit Award**
Mar 2023	**ACER Journal Award for Early Career Investigator Outstanding Paper** Awarded for publication: A Critical Review of Front-loading: A Maladaptive Drinking Pattern Driven by Alcohol's Rewarding Effects. PMID: 36239713.
Dec 2022	**Paul J. McKinley Graduate Student Award for Outreach, Public Engagement, and Diversity** Awarded to IUPUI Addiction Neuroscience graduate students who display a dedication to service in these areas.
Apr 2022	**Research Society on Alcoholism (RSA) Student Merit Award**
Apr 2022	**Best Graduate Student Poster, Greater Indiana Society for Neuroscience**
Oct 2019	**School of Science Graduate Student Council Travel Grant** (IUPUI)
May 2019	**Research Society on Alcoholism (RSA) Student Merit Award**
Dec 2012-Present	**Psi Chi**, International Honors Society in Psychology, member
May 2013	**Undergraduate Student Travel Award** (Towson University)
Jan 2013	**Undergraduate Research Grant** (Towson University)

Conference Sessions Organized

1) Front-loading your way to an AUD: The relationship between drinking rate, intoxication, and motivation to experience the subjective effects of alcohol (Jun 2022). *Research Society on Alcohol* Conference round-table session. Orlando, FL. Organizer: **C. Ardinger;** Co-organizer: N. J. Grahame.

Talks

1) Astrocyte effects of alcohol in the dorsolateral striatum (Apr 2025). Presented at the *Rutgers Training in Addiction Program Symposium*, New Brunswick, NJ.

2) Dorsal striatum astrocytes modulate alcohol-related behaviors (Sep 2024). Presented at the *Rutgers Addiction Research Center* Symposium, New Brunswick, NJ.

3) Front-loading: Evidence that mice consume alcohol to experience its subjective rewarding effects (Jun 2022). Presented at the *Research Society on Alcoholism* Conference, Orlando, FL.

4) Alcohol binge drinking results in sex-specific effects on corticostriatal activity (May 2022). *Oak Ridge Institute for Science and Education (ORISE) seminar series at the United States Army Medical Research Institute of Chemical Defense (USAMRICD),* Edgewood, MD.

5) High alcohol preferring mice may represent a rodent model of high intensity drinking (Mar 2021). Virtual presentation at the *IUPUI, Wake Forest, and Medical University of South Carolina Alcohol Research Center (ARC) Trainee Showcase.*

Conference Presentations

1) **C. Ardinger,** A. Kalelkar, M. Madden, A. Gunda, A. Patel, G. Xanthos, M. Mahboob, A. Khawaja, A. Vellore, N. Collie-Beard, M. Bocarsly, R. Huda. (June 2025). Astrocyte Effects of Alcohol in the Dorsolateral Striatum. Poster presented at the *Research Society on Alcohol Conference*, New Orleans, LA.

2) T. Nguyen, **C. Ardinger,** G. Winkler, & N. Grahame. Crossed High Alcohol Preferring x High Drinking in the Dark (cHAP x HDID) Mice: A Flexible, Valid Model for Alcohol Use Disorder. (June 2025). Poster presented at the *Research Society on Alcohol Conference*, New Orleans, LA.

3) **C. Ardinger,** A. Kalelkar, M. Mahboob, A. Vellore, W. Evans, M. Bocarsly, R. Huda (February 2025). Astrocyte effects of alcohol in the dorsolateral striatum. Poster presented at the *Glial Biology: Functional Interactions Among Glia and Neurons Gordon Research Conference and Seminar*, Ventura, CA.

4) **C. Ardinger,** A. Kalelkar, M. Mahboob, W. Evans, M. Bocarsly, R. Huda (June 2024). Dorsal striatum astrocytes modulate alcohol-related behaviors. Poster presented at the *Research Society on Alcohol Conference,* Minneapolis, MN.

5) **C. Ardinger**, Y. Chen, A. Kimbrough, N. J. Grahame, & C. C. Lapish (Feb 2024). Frontloading, Binge-drinking mice show sex differences in neural networks recruited by alcohol. Poster presented at the *Alcohol and the Nervous System Gordon Research Seminar and Conference,* Galveston, TX.

6) **C. Ardinger,** Y. Chen, A. Kimbrough, N. J. Grahame, & C. C. Lapish (Jun 2023). Leveraging whole brain imaging to identify brain regions involved in alcohol front-loading. Poster presented at the *Research Society on Alcohol* Conference*,* Bellevue, WA.

7) **C. Ardinger,** C. C. Lapish, N. J. Grahame, & D. N. Linsenbardt (Apr, Jun & Oct 2022). Sex differences in corticostriatal activity following repeated binge drinking. Poster presented at the *Greater Indiana Society for Neuroscience* Conference, Indianapolis, IN, *Research Society on Alcoholism* Conference, Orlando, FL and at the *Alcohol and the Nervous System Gordon Research Seminar and Conference,* Oxnard, CA.

- ***Awarded best graduate student poster, Greater Indiana Society for Neuroscience***

8) C. Rangel-Barajas, **C. Ardinger,** N. J. Grahame, S. L. Boehm, M. L. Logrip (Jun 2022). Disrupted synaptic transmission in the dorsomedial striatum after chronic alcohol consumption in the selectively bred crossed high alcohol-preferring mice. Poster presented at the *Research Society on Alcoholism* Conference, Orlando, FL.

9) G. A. Winkler, **C. Ardinger,** C. C. Lapish, J. C. Crabbe, & N. J. Grahame (Jun 2022). Free choice drinking increases subsequent drinking in the dark in crossed high alcohol-preferring x high drinking in the

dark (cHAPxHDID) mice. Poster presented at the *Research Society on Alcoholism* Conference, Orlando, FL.

10) N. M. Timme, **C. Ardinger**, R. Zelaya-Escobar, S. D. C. Weir, J. A. Stewart, and C. C. Lapish (Jun 2022). Assessing aversion-resistant alcohol consumption in head-fixed mice. Poster presented at the *Research Society on Alcoholism* Conference, Orlando, FL.

11) S. D. Weir, **C. Ardinger,** & C. C. Lapish (Mar 2021). A machine learning algorithm to identify bouts of drinking in rodent voluntary consumption studies. Poster presented virtually at the *Greater Indiana Society for Neuroscience* Conference.

12) G. A. Winkler, **C. Ardinger,** C. C. Lapish, N. J. Grahame (Jun 2021). Effect of ketamine on binge drinking patterns in crossed high alcohol preferring mice. Poster presented virtually at the *Research Society on Alcoholism* Conference.

13) **C. Ardinger,** C. C. Lapish, N. J. Grahame, & D. N. Linsenbardt (Jun 2020) Binge drinking ethanol is associated with changes in corticostriatal electrophysiology. Poster presented virtually at the *Research Society on Alcoholism* Conference.

14) **C. Ardinger**, C. C. Lapish & D. N. Linsenbardt (Oct 2019) Assessing the impact of excessive alcohol consumption on corticostriatal function in mice. Poster presented at the *Society for Neuroscience* Conference, Chicago, IL.

15) **C. Ardinger** & D. N. Linsenbardt (Jun 2019) Differences in the rate of binge drinking between replicate lines of high alcohol preferring (HAP) mice. Poster presented at the *Research Society on Alcoholism* Conference, Minneapolis, MN.

Laboratory Skills / Techniques

Stereotaxic surgery: I am skilled in aseptic technique, subject surgical preparation, anesthesia regulation, suturing, and post-operative care. Surgical procedures that I can independently and successfully execute include implantation of EEG lead, cannula, optogenetic fibers, head-fix bar, awake-behaving electrophysiology probes (fixed-wire arrays, Cambridge shanks, and neuropixels 1.0), fibers for fiber photometry recordings, and targeted viral injections. I am most comfortable performing these surgeries on adult rats and mice, but I also have experience working with guinea pigs and pediatric rats.

Animal Behavior: MedPC (data collection and code), head-fixed mouse behavior, attentional set shifting, drinking-in-the-dark (including use of volumetric drinking monitor equipment to assess intake pattern), two-bottle choice, open field, Stone T-Maze, and rotarod. DeepLabCut and AnyMaze to assess activity.

Awake-behaving electrophysiology: Rig / equipment set up, design and manufacture of custom fixed-wire electrodes, data collection from multiple brain regions during anesthetized and awake-behaving neural recordings, OpenEphys software (for data collection), stereotaxic surgery (see above), and data analysis with expertise in analyzing local field potentials using techniques such as spectral decomposition (e.g. Fourier transforms, frequency filtering, wavelets) and assessment of synchrony in periodic signals (measures of coherence, phase-locking, etc.).

Other Laboratory Techniques: General animal handling, collection of retro-orbital sinus bloods, use of Analox to calculate blood ethanol concentrations, perfusions, brain extraction, euthanasia, injections (including drug preparation and dose calculations), mouse colony husbandry, mouse and rat pup weaning and sexing, cryosectioning, immunohistochemistry and basic microscopy to identify electrode and virus placement, iDISCO whole brain clearing and immunohistochemistry, light sheet microscopy.

Service / Leadership

Dec 2024 – Present **Rutgers Postdoctoral Association**
Co-President

Jun 2025 – Present	**Animal Research and Ethics Committee: Research Society on Alcohol** *Co-Chair*
Dec 2020 – Jun 2025	**Animal Research and Ethics Committee: Research Society on Alcohol** *Member*
Aug 2021 – May 2023 *IUPUI*	**Psychology Graduate Student Diversity Committee (GSDC)** *Co-Chair*
Jun 2021 – May 2023 *IUPUI*	**Graduate Out in Science, Technology, Engineering and Math (GoSTEM)** *Secretary*
Aug 2021 – Aug 2022 *IUPUI*	**Psychology Graduate Student Diversity Committee (GSDC)** *Representative – Addiction Neuroscience*
May 2021 – May 2022	**Supporting Truth About Animal Research (STAR) Committee** *Research Society on Alcoholism Representative*

Mentoring and Community Outreach

2024 – Present	**Research Society on Alcohol (RSA) Mentorship Program,** Mentor
June 2022	**National Research Mentoring Network (NRMN)** **Level 1 Training: Entering Mentoring Training**
Feb 2022	**Indiana Science Communication Day Participant**
2019 - Present	**Skype-a-Scientist,** *Guest Lecturer*

Software Skills

Data Analysis and Presentation:

- MATLAB (link to my Github)
- GraphPad Prism
- Python
- Adobe Photoshop
- SPSS
- Inkscape

Data Collection Software:

- OpenEphys (awake-behaving ephys)
- AnyMaze
- Spike2 (EEG recording software)
- FIJI
- Nikon NIS Elements (fluorescent microscopy)
- Imspector Pro (light sheet microscopy)

Teaching Experience

Fall 2020	**IUPUI** *Graduate Teaching Assistant: Systems Neuroscience (Psychology 301)* *Mentor:* Charles Goodlett, PhD
Spring 2019	**IUPUI** *Graduate Teaching Assistant: Service-Learning Capstone in Psychology (Psychology 456), Mentor:* Katherine Adams, PhD
Fall 2018 Spring 2018 Fall 2019	**IUPUI** *Graduate Instructor: Research Methods Laboratory (Psychology 312)* *Mentor:* Robert Stewart, PhD
Fall 2019	**IUPUI** *Graduate Teaching Assistant: Research Methods Lecture (Psychology 311)*

Mentor: Robert Stewart, PhD

Fall 2017 – Spring 2018 **Towson University**
Adjunct Professor: Behavioral Statistics (Psychology 212)

Spring 2016 **Towson University**
Graduate Teaching Assistant: Sex Differences (Psychology 447)
Mentor: M. Paz Galupo, PhD