Greg Chism

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EDUCATION

University of Arizona, Graduate Interdisciplinary Program in Entomology and Insect Science
Ph.D. Entomology and Insect Science, *2022*
Dissertation: The Influence of Nest Architecture on the Ant *Temnothorax rugatulus*
Advisor: Dr. Anna Dornhaus

University of California, Santa Barbara, Department of EEMB
B.S. Zoology, *2016*
Advisors: Drs. Armand Kuris, Kevin Lafferty, Jonathan Pruitt
- Graduated distinction within major

ACADEMIC APPOINTMENTS

University of Arizona

Assistant Professor of Practice   *2023 - Current*
College of Information Science
- Design and teach graduate-level courses on data science, data visualization, and data mining.
- Mentor undergraduate and graduate students in capstone projects, fostering real-world data applications.

Associate Member, DataLab   *2023 - Current*
Data Science Institute
- Collaborate on AI and data science workshops for students and researchers.
- Develop just-in-time educational resources focused on computational tools and reproducible science.

Computational & Data Science Educator   *2022 - 2023*
Data Science Institute
- Organized events and workshops promoting data science education and open science practices.

RESEARCH INTERESTS

AI, behavioral science, data science, healthcare analytics, ecological systems, patient journeys, colony organization, open science, reproducible research, interdisciplinary collaboration.

TEACHING EXPERIENCE

University of Arizona

1. INFO 511: Fundamentals of Data Science   *Fall 2024*
   Developed new course covering machine learning, data visualization, and programming.

2. INFO 526: Data Analysis and Visualization   *Fall 2024*, *Summer 2024*, *Spring 2024*, *Fall 2023*

   Focus on statistical analysis, data visualization, and real-world data applications

3. INFO 698: Capstone   *Fall 2023 - Current*
   Mentoring graduate students on real-world data projects

4. INFO 523: Data Mining and Discovery   *Spring 2024*, *Fall 2023*
   Covers applied machine learning and multidimensional data insights

5. INFO 526: UA Global Campus   *Fall 2023 - Fall 2024*
   Developed and taught an industry facing course for international students

Fellowship Programs

   6. Data Science Fellows Program — *Summer 2023*

   7. Roots for Resilience — *Summer 2022 - Spring 2023*

   8. KEYS Research Internship Instructor — *Summer 2022 - Summer 2023*

   9. PHIRE Research Training Initiative — *Spring 2023*

Workshops

10. AI in Healthcare — *Fall 2024*

11. Intro to Large Language Models — *Summer 2023*

12. Exploratory Data Analysis in R — *Summer 2022 - Spring 2023*

13. Reproducible Research with GitHub and RStudio — *Spring 2023*

14. Data Science Tapas — *Spring 2023*

15. Classical Machine Learning — *Spring 2023*

MENTORSHIP & STUDENT ENGAGEMENT	*University of Arizona*

1. Coordinator of Data Science Student Engagement — *Fall 2024 - Current*
Developing internship pipelines for students and promoting engagement across campus

2. Data Science Project Mentor — *Fall 2023 - Current*

- Mentored capstones: 3 Undergraduate and 6 graduate
- Student volunteers: 2 graduate

3. Undergraduate Research Mentor — *2018 - 2022*
Guided 9 students to producing publication-quality data, 2 as co-authors

4. KEYS / SARSEF Research Internship Mentor — *2018 - 2019*
Mentored 4 Title I high school students in data science and research

DIVERSITY, EQUITY, & INCLUSION (DEI) CONTRIBUTIONS	*University of Arizona*

1. Carpentries Instructor Trainer — *Spring 2023 - Current*
Train and mentor new instructors to promote inclusive teaching practices

2. Co-Director, Data Science Ambassadors Program — *Spring 2024 - Current*
Guide students in community-based data science initiatives and outreach projects.

3. Duke 3C Fellow, Cohort 5 — *2024 - Current*
Collaborate on interdisciplinary solutions that apply data science to societal challenges.

4. Chair/Deputy Chair, Research Bazaar Arizona — *2023, 2022*
Organized interdisciplinary workshops and expanded collaboration to three universities.

OUTREACH & SERVICE	*University of Arizona*

1. Conquer the Hill Tucson Website — *2023 - 2024*

- Developed an interactive website to foster community engagement.

2. Information on Tap - Election Integrity — *2024*

- Discussed visualizing election uncertainty to the general Tucsonian public.

3. Industry Careers in Data Science Speaker Series — *2022 - 2023*

- Developed and hosted a speaker series that focused on academics that transitioned to industry careers in data science
- 20-40 attendees/session from diverse disciplines, career stages, and cultures

4. College of Information Science Faculty Awards Committee   *2023 - 2024*

   - Reviewed and assisted with faculty award nominations.

5. Insect Discovery Website   *2022*

   - Designed content for the Insect Discovery website hosted by the
     U of A Extension Program

6. Entomology Graduate Student Association (EGSA) Social Chair   *2019 - 2020*

   - Organized social events to encourage comradery and growth.

PUBLICATIONS **Peer-reviewed**
(* indicates undergraduate students)

1. **Chism, G. T.**, Nichols, W.*, and Dornhaus, A. (2024). Cavity geometry shapes overall ant colony organization through spatial limits, but workers maintain fidelity zones. *Animal Behaviour*, 216, 195-211. DOI

2. Swetnam, T. L., Antin, P. B., Bartelme, R., Bucksch, A., Camhy, D., **Chism, G.**, ... and Lyons, E. (2024). CyVerse: Cyberinfrastructure for open science. *PLOS Computational Biology*, 20(2), e1011270. DOI

3. McEwen, B. L., Lichtenstein, J. L., Fisher, D. N., Wright, C. M., **Chism, G. T.**, Pinter-Wollman, N., and Pruitt, J. N. (2020). Predictors of colony extinction vary by habitat type in social spiders. *Behavioral ecology and sociobiology*, 74, 1-9. DOI

4. Pruitt, J. N., Wright, C. M., Lichtenstein, J. L., **Chism, G. T.**, McEwen, B. L., Kamath, A., and Pinter-Wollman, N. (2018). Selection for collective aggressiveness favors social susceptibility in social spiders. *Current Biology*, 28(1), 100-105. DOI

5. Lichtenstein, J. L., **Chism, G. T.***, Kamath, A., and Pruitt, J. N. (2017). Intraindividual behavioral variability predicts foraging outcome in a beach-dwelling jumping spider. *Scientific Reports*, 7(1), 18063. DOI

6. Foster, W. C.*, Armstrong, C. M.*, **Chism, G. T.***, and Pruitt, J. N. (2017). Smaller and bolder prey snails have higher survival in staged encounters with the sea star *Pisaster giganteus*. *Current Zoology*, 63(6), 633-638. DOI

Book Chapters

7. Keiser, C. N., Lichtenstein, J. L. L., Wright, C. M., **Chism, G. T.***, Pruitt, J. N., Gonzalez-Santoyo, I., ... and Gonzalez-Tokman, D. (2018). Personality and behavioral syndromes in insects and spiders. *Insect behavior: From mechanisms to ecological and evolutionary consequences*, 236-256.

Pre-prints
(* indicates undergraduate students)

8. **Chism, G. T.**, Faron, W.*, and Dornhaus, A. (2022). *Temnothorax rugatulus* ants do not change their nest walls in response to environmental humidity. *bioRxiv*, 2022-06. DOI

   - In-Revision

9. Davis, S. M., **Chism, G. T.**, Maurer, M. M., Trejo, J. E., Garcia, R. J., and Schlenke, T. A. (2021). A hymenopteran odorant alerts flies to bury eggs. *bioRxiv*, 2021-09. DOI

   - In-Review at Nature

Software

10. **Chism G. T.**, (2024). Gchism94/jupyterquest: v0.4.0 (v0.4.0). Zenodo. DOI

11. Rice, L., Tate, S., Farynyk, D., Sun, J., **Chism, G.**, Charbonneau, D., ... and Shin, M. C. (2020). ABCTracker: an easy-to-use, cloud-based application for tracking multiple objects. *arXiv preprint arXiv:2001.10072.* DOI

Data
(* indicates undergraduate students)

12. **Chism, G.**, Nichols, W.*, and Dornhaus, A. (2022). Nest shape influences colony organization in ants: spatial distribution and connectedness of colony members differs from that predicted by random movement and is affected by nest space (1.0.0) [Data set]. Zenodo. DOI

13. **Chism, G.**, Faron, W.*, and Dornhaus, A. (2022). Temnothorax rugatulus ants do not change their nest walls in response to environmental humidity (1.0.0) [Data set]. Zenodo. DOI

Research Compendia
(* indicates undergraduate students)

14. **Chism, G.**, Nichols, W.*, and Dornhaus, A. (2023). NestArchOrg (v3.0.0). Zenodo. DOI

15. **Chism, G.**, Faron, W.*, and Dornhaus, A. (2022). Gchism94/HumidityProject: Research Compendium for DOI: https://doi.org/10.1101/2022.06.30.497551 (1.0.0). Zenodo. DOI

16. **Chism, G.** (2022). Gchism94/AntColonyPerformance: (Pre-release) Research Compendium for In preparation work (v0.1.0). Zenodo. DOI

Teaching Materials

17. **Chism, G.** (2022). Data7-EDA-In-Python-Book: Data7 EDA in Python Learning Materials (v2.0.0). Zenodo. DOI

18. **Chism, G.** (2022). Gchism94/Data7-rrtools-repro-research: Data7 Reproducible Research in GitHub and RStudio Workshop Series (v2.0.0). Zenodo. DOI

19. **Chism, G.** (2022). Gchism94/Data7-EDA-In-R-Workshops: Data7 EDA in R Workshop Series (v1.0.0). Zenodo. DOI

20. **Chism, G.** (2022). Gchism94/Data7-EDA-In-Shell: Data7 EDA in Unix Shell (v1.0.0). Zenodo. DOI

21. **Chism, G.** (2022). Gchism94/Data7-EDA-In-SQL: Data7 EDA in SQL (v1.0.0). Zenodo. DOI

22. **Chism, G.** (2022). Gchism94/DSI-KEYS2022-DataSci: Data7 KEYS 2022 Internship Data Science Materials (v2.0.0). Zenodo. DOI

HONORS & AWARDS

NSF Graduate Research Fellowship, Award Accepted (2019-2023): $300,000

EIS Carruth Award for Graduate Student Excellence (2021): $500

GIDP - EIS Program Education Award (2020): $250

CERTIFICATIONS

Carpentries Instructor Trainer (2023)

Carpentries Instructor (2022)

1. **Chism, G.** Animal + Human Architecture. College of Architecture, Planning & Landscape Architecture Capstone Course. University of Arizona. Tucson, AZ. September 2024.

2. **Chism, G.** Integrating Data Science into your Research: An Introduction to the Data Science Institute. Computational Social Science Annual Gathering. University of Arizona. Tucson, AZ. November 2022.

3. **Chism, G.**, Dornhaus, A. How nest shapes can influence colony level organization. Small intercontinental lab meet-up on colony organization and nest architecture in social insects. University of Arizona. Tucson, AZ. April 2021.

4. **Chism, G.**, Dornhaus, A. Nest architecture may influence ants the same was buildings influence humans. Advances in Complex Systems: From Ecology to Economics - Lake Como School of Adv. Studies. Lake Como, Italy. July 2019.

5. **Chism, G.,** Dornhaus, A. The influence of nest architecture on colony level organization in ants. UArizona SIAM Seminar series. University of Arizona. Tucson, AZ. April 2019.

1. **University of Arizona Graduate Center.** October 2024. *Elevating Graduate Research with Visual Communication: Insights from University Experts.*

2. **University of Arizona College of Information Science News.** February 2024. *Ensuring Creative Freedom: 8 Questions with Greg Chism...*

3. **University of Arizona News.** May 2019. *UA Students Earn NSF Graduate Research Fellowships.*

4. **University of Arizona News.** February 2019. *A Tasty Florida Butterfly Turns Sour.*

The Society of Integrative & Comparative Biology (SICB)   *2020-present*

- Member, Animal Behavior Division

International Union for the Study of Social Insects (IUSSI)   *2018-present*

- Member, North American Section

Foundational Open Science Skills (FOSS). University of Arizona. Tucson, AZ. Fall 2022.
- Completed CyVerse's workshop series on Foundational Open Science Skills, developing proficiency in open source cyberinfrastructure for reproducible research & scientific collaboration.

Designing the Data Science Classroom rstudio::conf(2022). Washington, DC. July 2022.
- Completed a workshop on using R and RStudio for teaching in data science college classrooms.

Basic & Advanced Container Camp. University of Arizona. Tucson, AZ. Summer 2022.
- Completed CyVerse's Basics and Advanced workshops on container technologies, emphasizing sharing, scaling, and reusing tools for computational analyses.

Data-driven Ecological Synthesis. Université de Montréal. Montréal, Canada. Spring 2018.
- Completed a week-long course focused on applying the R programming language to a diverse range of biological questions, enhancing expertise in data analysis and interpretation.