

Greg Thomas Chism

Data Science & Computation Educator

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Education & Training

University of Arizona, Ph.D. 2022

Entomology and Insect Science GIDP

Advisor: Dr. Anna Dornhaus

Dissertation Committee:

Dr. Judith Bronstein (UArizona),

Dr. Noa Pinter-Wollman (External – UCLA),

Dr. Susannah Dickenson (UArizona, Department of Architecture)

University of California, Santa Barbara, B.S. Zoology 2016

Advisor: Dr. Jonathan Pruitt

Graduated Distinction within major (EEMB department)

Shasta Community College, A.A. Biology 2014

Data Science Related Skills & Experience

Skills:

Data science through **R programming language in RStudio**, both **tidyverse and base libraries**: Data carpentry, analysis, and visualization (five years total experience)

Knowledge and application of **best practices in data management** towards **reproducible science**, bolstered by being a victim of scientific fraud

Statistical analysis of all dissertation chapters and research publications (six years total experience)

Highly developed **scientific writing proficiency**

Experience **writing workshop material** towards scientific writing

Skilled in **oral communication** to diverse backgrounds, disciplines, and skill levels

Experience **explaining complex concepts** understandably to K-12, undergraduate, and graduate student communities

Built a strong community within the EIS GIDP graduate student community

Strong organizational skills, developed due to the demands from teaching/mentoring and extracurricular service while pursuing a Ph.D.

Ability to **work and independently** (i.e., over two years working from home) **and in a group** (i.e., interdisciplinarity and **collaborations**)

Experience in forming **interdisciplinary** groups and toolsets towards research questions

Strong **desire to follow and apply current and future trends** in data science and interdisciplinary research

Related experience:

Data Science Ambassador, College of Agriculture and Life Sciences **Current**

- *Provided data science consultations, resources, and referrals*
- *Attended and assisted in R weekly workshops led by Dr. Jeffrey Oliver*
- *Currently organizing a forum that addresses UArizona research community data science needs and connects aspiring data scientists with data science professionals*

Relevant Courses & Workshops

Courses taken:

Data-driven Ecological Synthesis 2018 (Université de Montréal.) 2018

Applying the R programming language to answer a diversity of biological questions

Advanced Biostatistics (UC Santa Barbara, EEMB department) 2016

Applying hypothesis testing statistics to biological data

Workshops taken:

Introduction to HPC, UITS (University of Arizona) 2021

Attended lecture on getting started with the HPC (audited)

Research Bazaar ResBaz 2020 (University of Arizona) 2020

Attended lectures on python and machine learning

Advances in Complex Systems: From Ecology to Economics 2019

Lake Como School of Advanced Studies 2019. Como, Italy.

Attended lectures and workshops in interdisciplinary complex systems research

Publications

Chism G., Dornhaus A., In Prep. Nest shape doesn't affect ant colony performance against a nest invader despite altered worker movement and communication.

Chism G., Dornhaus A., In Prep. Nest shape influences colony organization in ants: spatial distribution and connectedness of colony members differs from random movement and is affected by nest space.

Chism G., Faron W., Dornhaus A. In Prep. *Temnothorax rugatulus* ants do not change their nest walls in response to environmental humidity.

- Davis, S. M., **Chism, G. T.**, Maurer, M. M., Trejo, J. E., Garcia, R. J., & Schlenke, T. A. 2021. A hymenopteran odorant alerts flies to bury eggs. bioRxiv. DOI: <https://doi.org/10.1101/2021.09.30.462443>
- Rice, L., Tate, S., Farynyk, D., Sun, J., **Chism, G.**, Charbonneau, D., ... & Shin, M. C. 2020. ABCTracker: an easy-to-use, cloud-based application for tracking multiple objects. arXiv preprint arXiv:2001.10072.
- McEwen, B. L., Lichtenstein, J. L., Fisher, D. N., Wright, C. M., **Chism, G. T.**, Pinter-Wollman, N., & Pruitt, J. N. 2020. Predictors of colony extinction vary by habitat type in social spiders. *Behavioral ecology and sociobiology*, 74(1), 1-9.
- Keiser CN, Lichtenstein JLL, Wright CM, Dittrich-Reed D, **Chism GT**, Jonathan N. Pruitt. 2018. In *Insect Behavior: From Mechanisms to Ecological and Evolutionary Consequences*. Oxford University Press. [Book chapter]
- Lichtenstein, J.L.L, **Chism, G.T.**, Pruitt J.N., 2017. Intraindividual behavioral variability predicts foraging outcome in a beach-dwelling jumping spider *Scientific reports*, 7(1), p.18063.
- Pruitt, J. N., Wright, C. M., Lichtenstein, J. L., **Chism, G. T.**, McEwen, B. L., Kamath, A., & Pinter-Wollman, N. 2018. Selection for collective aggressiveness favors social susceptibility in social spiders. *Current Biology*, 28(1), 100-105.
- 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. (Currently preparing a correction)

Presentations

Oral Presentations

- Chism G.**, Dornhaus A. Invited talk. 2021. Small intercontinental lab meet-up on colony organization and nest architecture in social insects
- Chism G.**, Dornhaus A. 2019. Invited talk. Advances in Complex Systems: From Ecology to Economics - Lake Como School of Adv. Studies 2019. Como, Italy.
- Chism G.**, Dornhaus A. 2019. Invited talk. University of Arizona Society for Industrial and Applied Mathematics Interdisciplinary Seminar series. Tucson, AZ.
- Chism G.**, Dornhaus A. 2019. Contributed talk. 2019 Workshop on Insect-Inspired Models for Social Behavior. Tempe, AZ.
- Chism G.**, Faron W., Davidowitz G., Dornhaus A. 2019. Contributed talk. Society for Integrative & Comparative Biology 2019 meeting. Tampa, FL.
- Chism G.**, Dornhaus A. 2018. Contributed talk. University of Arizona Ecology and Evolutionary Biology Department Noon Seminar Series. Tucson, AZ.
- Chism G.**, Marquardt K., Dornhaus A. 2018. Contributed talk. Biological Distributed Algorithms 2018 Workshop. London (Egham), England.

Poster Presentations

- Chism G.**, Dornhaus A. 2019. Contributed Poster. Advances in Complex Systems: From Ecology to Economics - Lake Como School of Adv. Studies 2019. Como, Italy.
- Chism G.**, Dornhaus A. 2018. Invited Poster. Graduate Student Interdisciplinary Program 2018 Showcase. Tucson, AZ.
- Chism G.**, Marquardt K., Dornhaus A. 2018. Contributed Poster. International Society for the Study of Social Insects 2018 congress. Guarujá, Brazil.

Honors & Awards

<i>EIS Carruth Award for Graduate Student Excellence, University of Arizona</i>	2021
<i>GIDP - EIS Program Education Award, University of Arizona</i>	2020
<i>Complex systems society award – Adv. in Complex Systems: From Ecol. to Econ.</i>	2019
<i>Carter Travel Award Grant, University of Arizona</i>	2018, 2019
<i>NSF Graduate Research Fellowship, Award accepted</i>	2019
<i>Center for Insect Science (CIS) Travel Award, University of Arizona</i>	2018

Teaching & Mentorship

University of Arizona, Tucson, AZ

Honors College Graduate Editor **Current**

Mentored and assisted nine undergraduate and graduate students towards developing competitive scholarship applications

Graduate College Fellowship Writing Workshops **Current**

Developing materials for fellowship writing workshops for the Graduate College

Fellowship Application Development Program Fall 2018 – Summer 2021

Graduate college editor: Edited/ mentored over 70 applicants for the NSF GRFP and other graduate fellowships where three women in STEM applicants were awarded NSF GRFs

Contributed Spotlight article as an NSF GRF recipient.

Undergraduate Mentor Spring 2018 – Spring 2020

Dornhaus lab: nine students mentored in producing publication quality data

One student will be a coauthor which involved hypothesis testing through statistics

KEYS High school student Mentor Summer 2019

Mentored an advanced high school student in data etiquette and hypothesis testing

Medical and Vet. Entomology ENTO 407 Spring 2019

Teaching assistant for an upper division undergraduate course

Contributed one undergraduate lecture

Insect Discovery Teaching Assistant Spring 2019

Taught insect science and an overall appreciation for insects to Tucson, AZ K-8 students

through four on-campus workshops that were free to classrooms (all from title I schools)

Contributed one undergraduate lecture

Insect Discovery Teaching Assistant Fall 2018

Gave lectures and interactive demonstrations on insect science and an overall appreciation for

insects to K-8 students through free classroom visits (all from title I schools)

SARSEF High school Student Mentor Fall 2018

Mentored three high school students in data etiquette and hypothesis testing

Outreach & Service

University of Arizona, Tucson, AZ

Insect Discovery Website Design Spring 2020 – Fall 2020

Contributed free to public information through a Cooperative Extension Program [website](#)

Social Chair, Student Entomology Association. Fall 2018 – Summer 2020

Organized social events that brought the EIS graduate student community together

College of Science Ambassador, Borderlands Science Café Series Spring 2020

Hosted and mentored Carson Scholars presenting their research to the Tucson, AZ community

Arizona Insect Festival Fall 2017 – Fall 2019

Contributed an insect science educational booth through a free event that hosts an estimated 5000 individuals from the diverse communities in and around Tucson, AZ
(Note 9 additional events between 2017 - 2019)