Stanford

Katie Fiocca

COLLEGE Lecturer

Stanford Introductory Studies - Civic, Liberal, and Global Education

Bio

BIO

Katie received a PhD in Biology at Drexel University in Philadelphia, PA, researching social insect nutritional physiology and chemical ecology. Additionally she earned a graduate minor in Undergraduate STEM Education through the Drexel Center for the Advancement of STEM Teaching and Learning Excellence.

She began her work at Stanford as an NSF Postdoctoral Research Fellow in the Biology Department, working to better understand the relationship between poison frog prey selection and their toxic ant diet. During her position, she also worked to broaden the participation of diverse identities in science, focusing on partnering with the local Bay Area community, including both students and high school teachers.

Currently, she is a COLLEGE Lecturer in Civic, Liberal, and Global Education with Stanford Introductory Studies.

ACADEMIC APPOINTMENTS

- Lecturer, Stanford Introductory Studies - Civic, Liberal, and Global Education

HONORS AND AWARDS

- Stanford Postdoc Champions: Community Impact Award, Office of Postdoctoral Affairs, Stanford University (2025)

PROFESSIONAL EDUCATION

- PhD, Drexel University , Biology (2021)
- BS, Ursinus College , Biology (2016)

Teaching

COURSES

2025-26

- Citizenship in the 21st Century: COLLEGE 102 (Win)
- Environmental Sustainability: Global Predicaments and Possible Solutions: COLLEGE 106 (Spr)
- Why College? Your Education and the Good Life: COLLEGE 101 (Aut)

2024-25

- Exploring Nature's Chemistry: Extracting and Interpreting Chemical Profiles for Biosciences: BIOS 419 (Aut)

Publications

PUBLICATIONS

- **Cuticular hydrocarbons and collective response to water stress in a desert ant** *FUNCTIONAL ECOLOGY*
  Menzel, F., Fiocca, K., Steiner, E. B., Gordon, D. M.
  2025

- **Poison frog chemical defences are influenced by environmental availability and dietary selectivity for ants.** *The Journal of animal ecology*
  Martin, N. A., Rodriguez, C., Alvarez-Buylla, A., Fiocca, K., Morrison, C. R., Chamba-Carrillo, A., Garcia-Ruilova, A. B., Renteria, J., Tapia, E. E., Coloma, L. A., Donoso, D. A., O'Connell, L. A.
  2025

- **Caste-Associated Cuticular Chemistry Variation in the Paper Wasp Mischocyttarus pallidipectus** *JOURNAL OF INSECT BEHAVIOR*
  Fiocca, K., Batterton, J., White, H. K., O'Donnell, S.
  2025; 38 (2)

- **Velvety tree ant extract is a chemotaxis repellent for C. elegans.** *microPublication biology*
  Gaerlan, M., Carrillo, M., Ceva, S., Chundi, S., Diallo, B., Fong, J. N., Huang, K., Jackson, J., Padilla, J., Quintana, L., Santa Maria, K., Sarkisian, S. M., Sequeira, et al
  2025; 2025

- **Argentine ant chemical profiles vary by location on the Stanford University campus.** *microPublication biology*
  Nangia, A., Gonzalez, M., O'Connell, L. A., Fiocca, K.
  2025; 2025

- **Pavement ant extract is a chemotaxis repellent for C. elegans.** *microPublication biology*
  Lopez, J. S., Ali, S., Asher, M., Benjamin, C. A., Brennan, R. T., Burke, M. L., Civantos, J. M., DeJesus, E. A., Geller, A., Guo, M. Y., Haase Cox, S. K., Johannsen, J. M., Kang, et al
  2024; 2024

- **Argentine ant extract induces an osm-9 dependent chemotaxis response in C. elegans.** *microPublication biology*
  Alfonso, S. A., Arango Sumano, D., Bhatt, D. A., Cullen, A. B., Hajian, C. M., Huang, W., Jaeger, E. L., Li, E., Maske, A. K., Offenberg, E. G., Ta, V., Whiting, W. W., Adebogun, et al
  2023; 2023

- **Poison frog dietary preference depends on prey type and alkaloid load.** *PloS one*
  Moskowitz, N. A., D'Agui, R., Alvarez-Buylla, A., Fiocca, K., O'Connell, L. A.
  2022; 17 (12): e0276331

- **Body size correlations with female aggression and physiology suggest pre-adult effects on caste in an independent-founding eusocial paper wasp (Mischocyttarus pallidipectus, Hymenoptera Vespidae)** *ETHOLOGY ECOLOGY & EVOLUTION*
  Fiocca, K., Congdon, R., O'Donnell, S.
  2022

- **Social Network Analysis of Male Dominance in the Paper Wasp Mischocyttarus mastigophorus (Hymenoptera: Vespidae)** *JOURNAL OF INSECT BEHAVIOR*
  O'Donnell, S., Fiocca, K., Congdon, R.
  2021; 34 (3): 106-113

- **Reproductive physiology corresponds to adult nutrition and task performance in a Neotropical paper wasp: a test of dominance-nutrition hypothesis predictions** *BEHAVIORAL ECOLOGY AND SOCIOBIOLOGY*
  Fiocca, K., Capobianco, K., Fanwick, E., Moynahan, K., Congdon, R., Zelanko, P., Velinsky, D., O'Donnell, S.
  2020; 74 (9)

- **Functionalized Single-Walled Carbon Nanotubes and Nanographene Oxide to Overcome Antibiotic Resistance in Tetracycline-Resistant Escherichia coli** *ACS APPLIED NANO MATERIALS*
  Carver, J. A., Simpson, A. L., Rathi, R. P., Normil, N., Lee, A. G., Force, M. D., Fiocca, K. A., Maley, C. E., DiJoseph, K. M., Goldstein, A. L., Attari, A. A., O'Malley, H. L., Zaccaro, et al
  2020; 3 (4): 3910-3921

- **First person - Meghan Barrett and Katherine Fiocca** *BIOLOGY OPEN*
  Barrett, M., Fiocca, K.
  2019; 8 (12)
- **Larval mannitol diets increase mortality, prolong development and decrease adult body sizes in fruit flies (Drosophila melanogaster)** *BIOLOGY OPEN*
  Barrett, M., Fiocca, K., Waddell, E. A., McNair, C., O'Donnell, S., Marenda, D. R.
  2019; 8 (12)
- **Brain structure differences between solitary and social wasp species are independent of body size allometry** *JOURNAL OF COMPARATIVE PHYSIOLOGY A-NEUROETHOLOGY SENSORY NEURAL AND BEHAVIORAL PHYSIOLOGY*
  O'Donnell, S., Bulova, S., DeLeon, S., Barrett, M., Fiocca, K.
  2019; 205 (6): 911-916
- **Mannitol ingestion causes concentration-dependent, sex-biased mortality in adults of the fruit fly (Drosophila melanogaster)** *PLOS ONE*
  Fiocca, K., Barrett, M., Waddell, E. A., Viveiros, J., McNair, C., O'Donnell, S., Marenda, D. R.
  2019; 14 (5): e0213760
- **Adult nutrition and reproductive physiology: a stable isotope analysis in a eusocial paper wasp (Mischocyttarus mastigophorus, Hymenoptera: Vespidae)** *BEHAVIORAL ECOLOGY AND SOCIOBIOLOGY*
  O'Donnell, S., Fiocca, K., Campbell, M., Bulova, S., Zelanko, P., Velinsky, D.
  2018; 72 (6)
- **Erythritol ingestion impairs adult reproduction and causes larval mortality in Drosophila melanogaster fruit flies (Diptera: Drosophilidae)** *JOURNAL OF APPLIED ENTOMOLOGY*
  O'Donnell, S., Baudier, K., Fiocca, K., Marenda, D. R.
  2018; 142 (1-2): 37-42
- **Size constraints and sensory adaptations affect mosaic brain evolution in paper wasps (Vespidae: Epiponini)** *BIOLOGICAL JOURNAL OF THE LINNEAN SOCIETY*
  O'Donnell, S., Bulova, S. J., Barrett, M., Fiocca, K.
  2018; 123 (2): 302-310
- **Caste differences in the mushroom bodies of swarm-founding paper wasps: implications for brain plasticity and brain evolution (Vespidae, Epiponini)** *BEHAVIORAL ECOLOGY AND SOCIOBIOLOGY*
  O'Donnell, S., Bulova, S. J., DeLeon, S., Barrett, M., Fiocca, K.
  2017; 71 (8)