



Kirsten Isabel Verster

COLLEGE Lecturer

Stanford Introductory Studies - Civic, Liberal, and Global Education

Bio

BIO

Humanities Resume:

TBD

Teaching Resume: TBD

PhD/Science:

While most of us are familiar with vertical transfer (e.g. I get genes from my father and mother), I find horizontal gene transfer (HGT) - exchanging genes between species - far more compelling. Imagine if you ate a jellyfish and the next day you glowed in the dark and had poisonous stingers! The prevalence of HGT in natural history, and its ability to suddenly create incredible phenotypes in animals, is becoming more apparent every year. I am currently studying HGT of cytolethal distending toxin B in insects in the Integrative Biology Department at University of California - Berkeley. I discovered that *cdtB* was transferred into the genomes of several drosophilid and aphid lineages (Verster et al 2019, *Molecular Biology and Evolution*). I also recently found that *cdtB* (in addition to other toxin genes) was transferred into an agriculturally devastating clade of insects known as midges - and, interestingly, that living in the same habitat may increase the likelihood of HGT between organisms (Verster and Tarnopol et al 2021, *Genome Biology and Evolution*).

Education

BA, Spanish Literature, University of Florida, 2014

BA, Zoology, University of Florida, 2014

PhD, University of California - Berkeley, 2022

Postdoc, Stanford University, 2022 - 2024

COLLEGE Lecturer, 2024-present

ACADEMIC APPOINTMENTS

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

Teaching

COURSES

2025-26

- Citizenship in the 21st Century: COLLEGE 102 (Win)
- Living with Viruses: COLLEGE 112 (Spr)

2024-25

- Living with Viruses: COLLEGE 112 (Spr)
- Why College? Your Education and the Good Life: COLLEGE 101 (Aut)

2023-24

- Data Visualization and Publishing: BIOS 252 (Win)

Publications

PUBLICATIONS

- **Evolution of insect innate immunity through domestication of bacterial toxins.** *Proceedings of the National Academy of Sciences of the United States of America*
Verster, K. I., Cinege, G., Lipinski, Z., Magyar, L. B., Kurucz, E., Tarnopol, R. L., Abraham, E., Darula, Z., Karageorgi, M., Tamsil, J. A., Akalu, S. M., Ando, I., Whiteman, et al
2023; 120 (16): e2218334120
- **Horizontal transfer of bacterial cytolethal distending toxin B genes to insects.** *Molecular biology and evolution*
Verster, K. I., Wisecaver, J. H., Karageorgi, M., Duncan, R. P., Gloss, A. D., Armstrong, E., Price, D. K., Menon, A. R., Ali, Z. M., Whiteman, N. K.
2019
- **Experimental horizontal transfer of phage-derived genes to *Drosophila* confers innate immunity to parasitoids.** *Current biology : CB*
Tarnopol, R. L., Tamsil, J. A., Cinege, G., Ha, J. H., Verster, K. I., Ábrahám, E., Magyar, L. B., Kim, B. Y., Bernstein, S. L., Lipinski, Z., Andó, I., Whiteman, N. K.
2024
- **Temporal Study of Environmental DNA and Acoustic Data Reveals Coexistence of Sympatric Bat Species in a North American Ecosystem** *ENVIRONMENTAL DNA*
Suresh, V. M., Hebert, T., Verster, K., Hadly, E. A.
2024; 6 (6)
- **Insights into the evolution of herbivory from a leaf-mining fly** *ECOSPHERE*
Aguilar, J. M., Gloss, A. D., Suzuki, H. C., Verster, K. I., Singhal, M., Hoff, J., Grebenok, R., Nability, P. D., Behmer, S. T., Whiteman, N. K.
2024; 15 (4)
- **Evolution of chemosensory and detoxification gene families across herbivorous *Drosophilidae*.** *G3 (Bethesda, Md.)*
Peláez, J. N., Gloss, A. D., Goldman-Huertas, B., Kim, B., Lapoint, R. T., Pimentel-Solorio, G., Verster, K. I., Aguilar, J. M., Nelson-Dittrich, A. C., Singhal, M., Suzuki, H. C., Matsunaga, T., Armstrong, et al
2023
- **Evolution of chemosensory and detoxification gene families across herbivorous *Drosophilidae*.** *bioRxiv : the preprint server for biology*
Peláez, J. N., Gloss, A. D., Goldman-Huertas, B., Kim, B., Lapoint, R. T., Pimentel-Solorio, G., Verster, K. I., Aguilar, J. M., Dittrich, A. C., Singhal, M., Suzuki, H. C., Matsunaga, T., Armstrong, et al
2023
- **Evolution of Olfactory Receptors Tuned to Mustard Oils in Herbivorous *Drosophilidae*** *MOLECULAR BIOLOGY AND EVOLUTION*
Matsunaga, T., Reisenman, C. E., Goldman-Huertas, B., Brand, P., Miao, K., Suzuki, H. C., Verster, K., Ramirez, S. R., Whiteman, N. K.
2022; 39 (2)
- **Horizontal Transfer of Microbial Toxin Genes to Gall Midge Genomes** *GENOME BIOLOGY AND EVOLUTION*

Verster, K., Tarnopol, R. L., Akalu, S. M., Whiteman, N. K.
2021; 13 (9)

- **Genome editing retraces the evolution of toxin resistance in the monarch butterfly** *NATURE*

Karageorgi, M., Groen, S. C., Sumbul, F., Pelaez, J. N., Verster, K. I., Aguilar, J. M., Hastings, A. P., Bernstein, S. L., Matsunaga, T., Astourian, M., Guerra, G., Rico, F., Dobler, et al
2019; 574 (7778): 409+