

SIDDHARTH S. GOPALAN

Curriculum Vitae

Department of Biology | University of Texas at Arlington

501 S. Nedderman Drive, LS 337

Arlington, TX 76010

Cell: 817-793-0552 | Email: siddharth.gopalan@uta.edu | Web: sidg13.github.io

 github.com/SidG13  www.linkedin.com/in/siddharth-gopalan

Professional Positions

Graduate Research Assistant

University of Texas at Arlington, TX

September 2020 - Present

Education

Doctor of Philosophy (Ph.D.) candidate in Quantitative Biology

Dissertation title: Cellular mechanisms underlying snake venom expression diversity and the roles of cis-regulatory element variation

University of Texas at Arlington, TX

Advisor: Dr. Todd Castoe

September 2020 - Present

Bachelor of Science (B.Sc.) in Genome Biology (3.97/4.00)

University of Toronto, ON Canada

Advisors: Dr. Belinda Chang, Dr. Luke Mahler

Additional Major: Ecology and Evolutionary Biology

April 2020

Publications

1. **Gopalan, S.S.**, B.W. Perry, Y.Z. Francioli, D.R. Schield, H.D. Guss, J.M. Bernstein, K. Ballard, C.F. Smith, A.J. Saviola, R.H. Adams, S.P. Mackessy, and T.A. Castoe. Diverse gene regulatory mechanisms alter rattlesnake venom gene expression at fine evolutionary scales. 2024. **Genome Biology and Evolution**.
2. Westfall, A.K.* , **Gopalan, S.S.***, B.W. Perry, R.H. Adams, A.J. Saviola, S.P. Mackessy, and T.A. Castoe. Single-cell heterogeneity in snake venom expression is hardwired by co-option of regulators from progressively activated pathways. 2023. **Genome Biology and Evolution**.
[*joint first authors]
3. Schield, D.R., B.W. Perry, R.H. Adams, M.L. Holding, Z.L. Nikolakis, **S.S. Gopalan**, C.F. Smith, J.M. Parker, J.M. Meik, S.P. Mackessy, and T.A. Castoe. The roles of balancing selection and recombination in the evolution of rattlesnake venom. 2022. **Nature Ecology and Evolution**.
4. **Gopalan, S.S.**, B.W. Perry, D.R. Schield, C.F. Smith, S.P. Mackessy, T.A. Castoe. Origins, genomic structure and copy number variation of snake venom myotoxins. 2022. **Toxicon**.
5. Perry, B.W., **S.S Gopalan**, G.I.M. Pasquesi, D.R. Schield, A.K. Westfall, C.F. Smith, I. Koludarov, P.T. Chippindale, M.K. Pellegrino, E.B. Chuong, S.P. Mackessy, T.A. Castoe. 2022. Snake venom gene expression is coordinated by novel regulatory architecture and the integration of multiple co-opted vertebrate pathways. **Genome Research**.

Media Coverage

- 2024 Our article Gopalan et al. 2024 in *Genome Biology and Evolution* was selected for a written highlight by **GBE** editors: <https://doi.org/10.1093/gbe/evae137>.
- 2022 Press coverage of our paper Schield et al. 2022 in *Nature Ecology and Evolution* from **CU** and **UTA** outlets and in popular science outlets including **Yahoo! News**, **Foreign Affairs New Zealand**, **Technology.Org**, **EurekAlert**, **Bioengineer.Org**, and **National Science Foundation Research News**, and others.
- 2022 Press coverage of our work in Perry et al. 2022 in *Genome Research*, including news stories from **UTA** outlets (UTA Newsletter, Coll. Of Science Newsletter), and popular science news outlets including **ScienceDaily**, **GenomeWeb**, **Nature World News**, **Phys.org**, **Thinking Port**, **Swift Telecast**, **Technology Networks**, **Mirage**, and others.

Presentations and Published Abstracts

- 2023 **Gopalan, S.S**, A.K. Westfall, B.W. Perry, S.P. Mackessy, and T.A. Castoe. Identifying regulatory interactions within the snake venom gland using single-cell sequencing methods. Phi Sigma Graduate Conference, Arlington, TX.
- 2022 Perry, B.W, **S.S. Gopalan**, G.I.M. Pasquesi, D.R. Schield, A.K. Westfall, C.F. Smith, I. Koludarov, P.T. Chippindale, M.W. Pellegrino, E.B. Choung, S.P. Mackessy, and T.A. Castoe. The evolutionary origins of snake venom gene regulatory architecture. Joint Evolution Meeting 2022. Cleveland, OH.
- 2021 Vogel, D., A. Mukkala, [and 124 others including **S.S Gopalan**]. HERON: Demonstrating a Novel Biological Platform for Small Satellite Missions. Small Satellite Conference. Logan, UT.

Teaching Experience

Graduate Teaching Assistant September 2020 – present

University of Texas, Arlington

Laboratory instructor for undergraduate courses **Cell and Molecular Biology** (BIOL 1441) and **Evolution and Ecology** (BIOL 1442).

Awards

- 2023 1st place talk – Biology Graduate Research Conference, University of Texas, Arlington (**\$500 USD**)
- 2020 Graduate Teaching Fellowship – University of Texas, Arlington (~**\$24,000 USD/year**, 5 years)
- 2020 University of Toronto FAS Top Doctoral Fellowship (~**\$26,300 CAD/year**, 4 years; *declined*)
- 2020 NSERC CGS-M (**\$17,500 CAD**; *declined*)
- 2020 NSERC Undergraduate Student Research Award (**\$5,625 CAD**)
- 2019 University of Toronto Excellence Award (**\$6,000 CAD**)
- 2018 New College In-Course Scholarship (**\$1,500 CAD**)
- 2017 New College In-Course Scholarship (**\$1,500 CAD**)
- 2016 University of Toronto President's Entrance Scholarship (**\$2,000 CAD**)

Invited Reviews

BMC Genomics