

Seth Thomas Cowall

C.V. (Updated September 29, 2025)

Personal Data

Current Address: Department of Mathematics, Boyd Research and Education Center 526, University of Georgia, Athens, GA 30602

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Education

2019 (August): *Doctor of Philosophy*, Applied Mathematics. Advisor: Professor L. Pamela Cook. Co-advisor: Professor Matthew J. Oliver. University of Delaware, Newark DE.

2015 (May): *Master of Science*, Applied Mathematics. University of Delaware, Newark DE.

2011 (May): *Bachelor of Science, Summa Cum Laude*, Mathematics. Salisbury University, Salisbury MD.

2000 (December): *Bachelor of Fine Arts*. James Madison University, Harrisonburg VA.

Positions

August 2023-present: *Postdoctoral Research and Teaching Associate/Limited-Term Assistant Professor*. University of Georgia. Athens, GA.

August 2020-June 2023: *Visiting Assistant Professor*. St. Mary's College of Maryland. St. Mary's City, MD.

August 2019-June 2020: *Visiting Assistant Professor*. Mercer University. Macon, GA.

July 2013-July 2019: *Graduate Teaching Assistant*. University of Delaware. Newark, DE.

Peer Reviewed Publications

Cowall, S. T., Oliver, M. J., and Cook, L. P. "Data driven dynamics of phytoplankton blooms in a reaction-diffusion NPZ model." *Journal of Plankton Research*, 43 (2021): 642–657.

Cowall, S. T., Oliver, M. J., and Cook, L. P. "Effects of solar radiation, vertical diffusion, and mixed layer depth on the dynamics of a reaction-diffusion NPZ model." *Journal of Plankton Research*, 41 (2019): 879–892.

Preprints

Black, K., Adams, M., Al Basheer, A., Kazanci, C., Whipple, S., Zaytseva, S., Cowall, S. “A continuous model of behavioural phenotype: An example of interaction between the butterfly *Pieris brassicae* and *Trichogramma* wasps.” *In Revision*.

Cowall, S., Kazanci, C. “Dynamical Storage Analysis: A Computational Approach to Continuous Systems” *In Preparation*.

Other Publications

Cowall, S. T., Oliver, M. J., and Cook, L. P. “Seasonal Marine Phytoplankton Blooms: Understanding the Phenomenon’s Dynamics.” *SIAM News*, (2020, Mar. 20).

Selected Presentations

S. Cowall. *Dynamical Storage Analysis: A Computational Approach to Continuous Systems* (Talk). Mathematics and Climate Research Network Colloquium. Online. September 2025.

S. Cowall. *A Computational Analysis of Behavioural Phenotype: Modeling the Interaction Between the Butterfly *Pieris brassicae* and *Trichogramma* Wasps* (Talk). 2025 SIAM (Society of Industrial and Applied Mathematics) Annual Meeting. Montreal, QC, Canada. July-August 2025.

S. Cowall. *Dynamical Storage Analysis: A Computational Approach to Continuous Systems* (Talk). Applied Mathematics Seminar. Department of Mathematics, University of Georgia. Athens, GA. April 2025.

S. Cowall. *A Computational Analysis of Behavioural Phenotype: Modeling the Interaction Between the Butterfly *Pieris brassicae* and *Trichogramma* Wasps* (Talk). SIAM (Society of Industrial and Applied Mathematics) Conference on the Life Sciences. Portland, OR. June 2024.

S. Cowall. *Data-Driven Models of Phytoplankton Blooms and Opportunities for Undergraduate Research* (Invited Talk). Mathematical Biology Seminar. University of Maryland Department of Mathematics. College Park, MD. September 2022.

S. Cowall. *Modeling Phytoplankton Blooms with a Reaction-Diffusion Predator-Prey Model* (Invited Talk). Mathematical Biology Seminar. Georgia Institute of Technology School of Mathematics. Atlanta, GA. March 2020.

S. Cowall. *Data-Driven Modeling of Phytoplankton Blooms in the Ocean* (Talk). 2019 SIAM (Society of Industrial and Applied Mathematics) Conference on Applications of Dynamical Systems. Snowbird, UT. May 2019.

S. Cowall. *The Symmetry of Multinomial Coefficients* (Talk). 2010 Salisbury University Student Research Conference. Salisbury, MD. April 2010.

University Teaching Experience

Instructor: University of Georgia

Precalculus (Spring 2024)

Calculus I (Fall 2024)

Multivariable Calculus (Fall 2023)

Introduction to Linear Algebra (Fall 2025)

Introduction to Partial Differential Equations (Spring 2025)

Instructor: St. Mary's College of Maryland

Calculus I (Fall 2020, Spring 2023)

Calculus II (Fall 2021, Fall 2022, Spring 2023)

Precalculus (Fall 2020)

Survey of Mathematics (Fall 2020, Spring 2021)

Calling BS (Fall 2021, Spring 2022, Fall 2022)

Vector Calculus (Spring 2021)

Differential Equations (Spring 2022, Spring 2023)

Mathematical Modeling (Fall 2021, Fall 2022)

Senior Topics Seminar in Mathematics (Spring 2022)

Instructor: Mercer University

Calculus I (Fall 2019, Spring 2020)

Multivariable Calculus (Spring 2020)

Introductory Statistics (Fall 2019, Spring 2020)

Instructor: University of Delaware

Analytic Geometry and Calculus A (Winter 2018)

Teaching Assistant: University of Delaware

Business Calculus (Fall 2013, Fall 2014)

Analytic Geometry and Calculus A (Spring 2018)

Analytic Geometry and Calculus B (Discussion TA, Fall 2016; Mathematica Lab TA, Spring 2015)

Analytic Geometry and Calculus C (Discussion TA, Spring 2016; Mathematica Lab TA, Fall 2015)

Student Mentoring

Spring 2024: *The Fourier Transform And Milankovitch's Theory of Glacial Cycles.*

Razeen Kanjiani, Directed Reading Project

University of Georgia Department of Mathematics. Athens, GA. Student presentation in April 2024.

Spring 2023: *The Effects of Grazing Functions on Mixotrophic Plankton Populations During Seasonal Blooms.*

James Ripple, Senior Project in Mathematics

Student Paper Award: **Third Place**, Spring 2023 Section Meeting of the Maryland-DC-Virginia Section of the MAA (Mathematics Association of America). Ettrick, VA. April 2023.

Summer 2022: *Mathematical Modeling of Chesapeake Bay Oyster Populations*

Mathematics Research Experience for Undergraduates at St. Mary's College of MD
Students:

Tiffani Clark, University of Louisiana at Lafayette

Sophia Fogle, Centre College

Kimani Daley, St. Mary's College of MD

Winner of **Most Outstanding Oral Presentation** at the National Association of Mathematicians 2022 Undergraduate MATHFest: Morgan State University, Baltimore, MD. September 2022.

Spring 2022: *Role of Mixotrophic Zooplankton in Seasonally-Forced Plankton Blooms.*

Gillian Carr, Senior Project in Mathematics

Student Paper Award: **First Place**, Spring 2022 Section Meeting of the Maryland-DC-Virginia Section of the MAA (Mathematics Association of America). Germantown, MD. April 2022.

Awards and Honors

2022: *Early Career Travel Award.* 2022 SIAM MPE (Society of Industrial and Applied Mathematics/Mathematics of Planet Earth) Conference. Pittsburgh, PA.

2019: *Professional Development Award* (Travel Award for Graduate Students). University of Delaware.

2019: *Student Travel Award*. 2019 SIAM (Society of Industrial and Applied Mathematics) Conference on Applications of Dynamical Systems. Snowbird, UT.

2019: *Winner of \$250 Travel Fund Prize*. University of Delaware Chapter of AWM (Association for Women in Mathematics) Travel Award.

2018: *University of Delaware Summer Doctoral Fellowship*

2018: *CIRTL Associate* (Center for the Integration of Research, Teaching and Learning)

2017: *University of Delaware Summer Doctoral Fellowship*

2017: *Student Travel Award*. 2017 SIAM (Society for Industrial and Applied Mathematics) Annual Meeting, Pittsburgh, PA.

2017: *Spring 2017 Unidel Graduate Fellowship*. University of Delaware.

2017: *Winner of \$500 Travel Fund Prize*. Winter Research Symposium Poster Contest, University of Delaware Department of Mathematical Sciences.

2011: *Most Promising Mathematics Educator*. Salisbury University, Salisbury MD.

Service

2025: Organized minisymposium, *Mathematical Ecology*, at the 2025 SIAM (Society for Industrial and Applied Mathematics) Annual Meeting in Montreal, QC, Canada.

2024, 2025: Co-coordinator of MaLT (Mathematics Learning and Teaching) Seminar, Department of Mathematics, University of Georgia.

2022, 2023: Poster Judge at the Spring Section Meeting of the Maryland-DC-Virginia Section of the MAA (Mathematics Association of America).

2019-2020: Teaching Chat Coordinator, Mercer University Department of Mathematics.

2019: Reviewed for *ICES Journal of Marine Science*.

2019: Mercer University High School Mathematics Contest (Assisted in writing exam and conducting the competition), November 2019.

Outreach

April 2017: *Exhibition at the National Math Festival: "Climate, Math, Ice Cores, and You: Hands-On Data from Planet Earth,"* Washington, D.C.

- Co-planned the event with the Outreach Focus Group of MCRN (Mathematics and Climate Research Network).
- Hosted three "hands-on" activity stations for K-12 students: Ice Cores, Greenhouse Gasses, and Earth's Energy Balance.

Memberships

SIAM (Society for Industrial and Applied Mathematics). Activity Groups: Mathematics of Planet Earth (MPE) and Applied Mathematics Education

MCRN (Mathematics and Climate Research Network)

Section NExT (New Experiences in Teaching), Maryland/DC/Virginia Section of the Mathematical Association of America, 2022 Inductee

Pi Mu Epsilon (National Honorary Mathematics Society), 2010 Inductee

Workshops Attended

2024: *American Mathematical Society MRC (Mathematics Research Community) Conference on Climate Science at the Interface Between Topological Data Analysis and Dynamical Systems Theory*. Java Center, NY.

2022: *SIAM (Society for Industrial and Applied Mathematics) Convening on Climate Science, Sustainability, and Clean Energy*. Tysons, VA.

2021: *SIMIODE Collegial Workshop* (Systemic Initiative for Modeling Investigations and Opportunities with Differential Equations). Online

2017: *SAMSI (Statistical and Applied Mathematical Sciences Institute) Climate Workshop*. Research Triangle Park, NC.

2016: *Mathematics and Climate Summer School*. University of Kansas, Lawrence KS.

2014: *Mathematical Problems in Industry Workshop*. New Jersey Institute of Technology, Newark NJ.

2014: *Graduate Student Mathematical Modeling Camp*. Rensselaer Polytechnic Institute, Troy NY.