

# Sofya Zaytseva

LECTURER · UNIVERSITY OF GEORGIA

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## Employment

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2022- **Lecturer**, Department of Mathematics, University of Georgia  
2019 - 2022 **Limited Term Assistant Professor**, Department of Mathematics, University of Georgia  
2014-2019 **Graduate Research Assistant**, Department of Applied Science, William & Mary  
2016 **DHS HS-STEM Intern**, Department of Homeland Security, ANSER  
2013-2014 **Graduate Teaching Assistant**, Department of Mathematics, University of North Carolina at Wilmington  
2013-2014 **Statistical Programming Intern**, Biostudy Solutions  
2012 **Statistical Programming Intern**, PharPoint Research Inc

## Education

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### William & Mary

PHD APPLIED SCIENCE

*Aug 2014 – July 2019*

### University of North Carolina at Wilmington

MS APPLIED MATHEMATICS

*Aug 2013 – July 2014*

### University of North Carolina at Wilmington

BS MATHEMATICS

*Aug 2009 – May 2013*

## Teaching Experience

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Spring 2023	<b>Calculus I (MATH 2250, 3 sections)</b>	<i>University of Georgia</i>
Fall 2022	<b>Pre-Calculus (MATH 1113, 4 sections)</b>	<i>University of Georgia</i>
Summer 2022	<b>Pre-Calculus (MATH 1113, 1 section)</b>	<i>University of Georgia</i>
Spring 2022	<b>Calculus II for Science and Engineering (MATH 2260, 1 section)</b>	<i>University of Georgia</i>
Fall 2021	<b>Pre-Calculus (MATH 1113, 2 sections)</b>	<i>University of Georgia</i>
Summer 2021	<b>Calculus II for Science and Engineering (MATH 2260, 1 section)</b>	<i>University of Georgia</i>
Spring 2021	<b>Arithmetic and Problem Solving (MATH 5001, 2 sections)</b>	<i>University of Georgia</i>
Fall 2020	<b>Calculus III for Engineering Students (MATH 2500, 2 sections)</b>	<i>University of Georgia</i>
Spring 2020	<b>Calculus II for Science and Engineering (MATH 2260, 1 section)</b>	<i>University of Georgia</i>
Fall 2019	<b>Pre-Calculus (MATH 1113, 3 sections)</b>	<i>University of Georgia</i>
Spring 2018	<b>Linear Algebra (1 section)</b>	<i>William &amp; Mary</i>

## Mentoring

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2022- **Teaching Mentor** Served as a teaching mentor for 2 PhD students *University of Georgia*

## Outreach & Professional Development

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## SERVICE AND OUTREACH

2022-present	<b>MaLT (Mathematics Learning and Teaching) Seminar</b> Organizer	<i>University of Georgia</i>
2020-present	<b>COMAP</b> Judge (trriage and final rounds) in the Mathematical Contest in Modeling (MCM)	<i>COMAP</i>
2020	<b>“Patterns and Dynamics in Spatially Explicit Ecological Systems”</b> Mini-symposium co-organizer	<i>SIAM Conference on the Mathematics of Planet Earth</i>
2019-present	<b>University of Georgia</b> Affiliated Faculty, Russian Flagship Program	<i>University of Georgia</i>
2018-2019	<b>William &amp; Mary</b> Math tutor for K-12 students	
2017-2018	<b>William &amp; Mary, EXTREEMS-QED</b> Created and led workshops on R and Matlab	<i>William &amp; Mary</i>

## DEVELOPMENT

2022	<b>“Best Practices for Accommodating Students &amp; Employees with Disabilities”</b> workshop	<i>University of Georgia</i>
2022-	<b>“Non-Tenure Track Faculty”</b> FLC	<i>University of Georgia</i>
2022	<b>“Supporting Students’ Help-Seeking Strategies in Authentic Learning”</b> FIG	<i>University of Georgia</i>
2021-present	<b>“Improvisation for Teachers and Learners”</b> FLC	<i>University of Georgia</i>
2021-2022	<b>Teaching Academy Early Career Fellows Program (TAFP)</b>	<i>University of Georgia</i>
2021	<b>“Emotional Intelligence and Diversity”</b> workshop	<i>University of Georgia</i>
2021	<b>“Implementation of Group Work in the Classroom”</b>	<i>Project NeXT</i>
2021	<b>“Designing Authentic Learning Experiences in Digital Environments”</b> FIG	<i>University of Georgia</i>
2021	<b>“Math Pathways: Deepening Dialogues in Diversity”</b> workshop	<i>University of Georgia</i>
2021	<b>“Math Pathways: Countering Unconscious Bias”</b> workshop	<i>University of Georgia</i>
2020-2021	<b>Project NeXT (New Experiences in Teaching)</b>	
2020	<b>“Designing Authentic Learning Experiences in Digital Environments”</b>	<i>University of Georgia</i>
2019 -	<b>MaLT (Mathematics Learning and Teaching) seminar</b>	<i>University of Georgia</i>
2019	<b>“Diversity at UGA: Beyond the Number”</b> workshop	<i>University of Georgia</i>
2019	<b>IPAM</b> Collaborative Workshop for Women in Mathematical Biology	<i>UCLA</i>
2018	<b>“Mapping with Drones”</b> Workshop on federal sUAS regulations and image processing	<i>Virginia Tech Richmond Center</i>
2017	<b>Institute for Theory and Practice of International Relations</b> State Department’s Diplomacy Lab	<i>William &amp; Mary</i>

## Awards, Fellowships, & Grants

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2020	<b>UGA Provost’s Affordable Course Materials Grant for Calculus II</b> University of Georgia	<i>\$5000</i>
2020	<b>Summer Research for Women in Mathematics</b> MSRI	<i>\$20,000</i>
2019	<b>GSA Board Award for Excellence in the Natural and Computational Sciences</b> William & Mary	<i>\$ 1,000</i>
2019	<b>Travel Award</b> Joint Mathematics Meeting	<i>\$ 500</i>
2017	<b>Award for Excellence in the Natural and Computational Sciences</b> William & Mary	<i>\$ 500</i>

## Publications

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### PUBLISHED

- Zaytseva, Sofya, et al., Pattern formation in marsh ecosystems modeled through the interaction of marsh vegetation, mussels and sediment. *Journal of Theoretical Biology*, 543 (2022): 111102
- Zaytseva, Sofya, Judges' Commentary: Power Profile of a Cyclist, *The UMAP Journal*, 43(4) (2022) pp. 391-402
- Ciftci, S, Robbins M. and **Zaytseva S.**, 2021. Devotion at Sub-national Level: Ramadan, Night-time Lights, and Religiosity in Egyptian Governorates. *International Journal Of Public Opinion Research*, 33(1), pp.99-117
- Agusto, F., Goldberg, A., Ortega, O., Ponce, J., **Zaytseva, S.**, Sindi, S. and Blower, S., 2021. How do interventions impact malaria dynamics between neighboring countries? A case study with Botswana and Zimbabwe. *In Using Mathematics to Understand Biological Complexity*, (pp. 83-109). Springer, Cham.
- Zaytseva, S., Shi, J. and Shaw, L.B., 2020. Model of pattern formation in marsh ecosystems with nonlocal interactions. *Journal of mathematical biology*, 80(3), pp.655-686

### IN REVIEW/SUBMISSION

- Black, K., Adams, M., Basheer, A., Kazanci, C., Patten B., Whipple S. and **Zaytseva S.** A Continuous Model Of Behavioural Phenotype: An Example Of Interaction Between The Butterfly *Pieris brassicae* And *Trichogramma* Wasps.

### UNPUBLISHED MANUSCRIPTS

- Zaytseva, S, Lipcius R. and Shaw L.B., Analysis of oyster reef patterns in remotely sensed data. (In preparation)

## Presentations

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### INVITED TALKS

- June 2021. *Pattern Formation in Intertidal Oyster Reefs*. Invited talk as part of "Ecological Models at the Interface of Empirical and Theoretical Research" minisymposium at the Society for Mathematical Biology Conference
- January 2021. *Image Analysis Approach to Understanding Spatial Patterns in Intertidal Oyster Reefs..* Invited talk as part of the "AMS Special Session on Recent Advances in Ecological Modeling, II" minisymposium at the Joint Mathematics Meeting
- August 2020. *Investigation of Pattern Formation in Intertidal Oyster Reefs*. Invited talk as part of the minisymposium on "Patterns and Dynamics in Spatially Explicit Ecological Systems" at the SIAM Conference on the Mathematics of Planet Earth
- January 2019. *Model of pattern formation in marsh ecosystems with nonlocal interactions*. Invited talk in the AMS Special Session on Mathematical Investigations of Spatial Ecology and Epidemiology
- March 2018. *Pattern formation in Marine Ecology*. Invited talk: Department of Mathematics, Virginia Commonwealth University, Richmond, Virginia
- July 2016. *Using a System of Reaction Diffusion Equations with Nonlocal Interactions to Model Pattern Formation in the York River Tidal Marshes*. Invited talk in the special session on "Pattern Formation and Recognition in Structured Information and Biological Systems with External Forcing", 11th American Institute of Mathematical Sciences (AIMS) Conference, Orlando, Florida

### SELECT CONTRIBUTED PRESENTATIONS

- February 2021. *Investigation of Pattern Formation in Intertidal Oyster Reefs..* Georgia Scientific Computing Symposium
- May 2019. *Imagery Analysis to Investigate Oyster Reef Pattern Formation*, SIAM Conference on Applications of Dynamical Systems, Snowbird,Utah

May 2017. *Pattern formation in marsh ecosystem*, SIAM Conference on Applications of Dynamical Systems, Snowbird, Utah

May 2017. *Spatial patterning in the York River tidal marshes through the interaction of cordgrass, mussels and sediment*, BAMM! Biology and Medicine through Mathematics Conference, Richmond, Virginia

March 2017. *Pattern formation in marsh ecosystems modeled through the interaction of marsh vegetation, mussels and sediment.*, 16th Annual Graduate Research Symposium, College of William & Mary

#### OTHER PRESENTATIONS AND FEATURES

Fall 2020, Fall 2021, Fall 2022. Guest lecture on "The Mathematics of Infectious Diseases" in RUSS 3911 (Tutorial in Professional Russian I), Department of Germanic and Slavic Studies, University of Georgia

Spring 2021, Spring 2022. Guest lecture on "The Culture of Food in Russia" in RUSS 3912 (Tutorial in Professional Russian II), Department of Germanic and Slavic Studies, University of Georgia

August 2020. Featured in a SIAM news article titled "*Pattern Formation in Intertidal Oyster Reefs.*" <https://sinews.siam.org/Details-Page/pattern-formation-in-intertidal-oyster-reefs>

July 2018. Featured in a SIAM news article titled "*Imagery Analysis Improves Oyster Reef Restoration Efforts in the Chesapeake Bay.*" <https://sinews.siam.org/Details-Page/imagery-analysis-improves-oyster-reef-restoration-efforts-in-the-chesapeake-bay>