Jonathan Simone   Curriculum Vitae

CONTACT INFORMATION	School of Mathematics Georgia Institute of Technology 686 Cherry Street Atlanta, GA 30332-0160 USA	Website: https://jonathansimone.math.gatech.edu/ Email: jsimone7@gatech.edu Phone: 917-971-0934

RESEARCH INTERESTS

Low-dimensional topology
Constructions of exotic 4-manifolds
Symplectic 4-manifolds and contact 3-manifolds
Knot theory

EMPLOYMENT

Georgia Institute of Technology (GaTech), Atlanta, GA   2021 – present
Visiting Assistant Professor of Mathematics

University of Massachusetts Amherst (UMass), Amherst, MA   2018 – 2021
Visiting Assistant Professor of Mathematics

EDUCATION

University of Virginia (UVa), Charlottesville, VA   May 2018
Doctor of Philosophy in Mathematics
Advisor: Thomas E. Mark

Hunter College, New York, NY   June 2011
Master of Arts in Pure Mathematics

New York University, New York, NY   May 2009
Bachelor of Arts in Mathematics, Cum Laude
Minor in Business Studies, Minor in Computer Applications

AWARDS

Student Recognition of Excellence in Teaching, GaTech   Spring 2023
Distinguished Teaching Award Finalist, UMass   2020, 2021
All University Graduate Teaching Award, UVa   2017

PUBLICATIONS

Geography of symplectic Lefschetz fibrations and rational blowdowns
with R. Inanc Baykur and Mustafa Korkmaz.
to appear in *Transactions of the American Mathematical Society*

Classification of torus bundles that bound rational homology circles
Algebraic & Geometric Topology 23-6 (2023), 2449–2518

Using rational homology circles to construct rational homology balls
Topology and its Applications, Vol. 291 (2021)

Symplectically replacing plumbings with Euler characteristic 2 4-manifolds
Journal of Symplectic Geometry, Vol. 18, No. 5 (2020), pp. 1285-1318

PREPRINTS

On $\chi-$slice pretzel links
with Sophia Fanelle, Evan Huang, Benjamin Huenemann, Weizhe Shen, and Hannah Turner.

On slice quasi-alternating 3-braid closures
with Vitalijs Brejevs.

On the nonorientable 4-ball genus of torus knots
with Fraser Binns, Sungkyung Kang, and Paula Truöl. Submitted

Tight contact structures on some plumbed 3-manifolds
Submitted

IN PREPARATION	**Circular Blowdowns and small nonsimply connected exotic 4-manifolds**	
	Giroux torsion in some plumbed 3-manifolds with Tanushree Shah	
	Links and Cubiquity with Erica Choi, Nur Saglam, Katerina Stuopis, and Hugo Zhou	

SELECT RESEARCH TALKS		
AMS Fall Southeastern Section Meeting, University of South Alabama	Oct 2023
Knot Online Seminar, Virtual	Apr 2023
Working Seminar (2-talk series), GaTech	Apr 2023
Tech Topology Conference, GaTech	Dec 2022
Math Seminar, Spelman College	Oct 2022
Math Club, Agnes Scott College	Sep 2022
Topology Seminar, University of Georgia	Apr 2022
Algebra-Topology Seminar, University of Alabama	Oct 2021
Geometry Topology Seminar, GaTech	Sep 2021
Low-dimensional Topology and Symplectic Geometry Weekend (remote)	Apr 2021
Geometry Seminar, University of Virginia	Dec 2020
Topology Seminar, Brandeis University	Oct 2020

MENTORING EXPERIENCE		
REU Mentor, GaTech	
Links, Lattices, and Rational homology 4-balls	Summer 2023
Donaldson's Diagonalization Theorem and $\chi-$slice links	Summer 2022
Directed Reading Program, GaTech	
Hyperbolic Geometry, Chase Renick	Spring 2023
Knot Theory, Chase Renick	Fall 2022
Doctoral Dissertation Committee Member, UMass Amherst	2021
Equivariant surgeries and irreducible embeddings of surfaces in dimension four Andrew Havens	
Undergraduate Senior Thesis Co-Chair, UMass Amherst	2020-2021
Knot Theory and Invariants, Caifei Fan	
Undergraduate Independent Study, UMass Amherst	
Complex Variables, Lucy Grossman	Spring 2020
Theory of Manifolds, Caifei Fan	Spring 2020
Theory of Surfaces, Caifei Fan	Fall 2019

TEACHING EXPERIENCE		
Georgia Institute of Technology, Atlanta, GA	
Discrete Mathematics	Fall 2023
Number Theory	Spring 2023
Linear Algebra	Spring 2022, Fall 2022
Differential Calculus	Fall 2021

University of Massachusetts Amherst, Amherst, MA

Complex Variables	Spring 2020
Advanced Calculus	Fall 2019
Linear Algebra	Spring 2019, 2020 & Fall 2020
Multivariable Calculus	Fall 2018

University of Virginia, Charlottesville, VA

Financial Mathematics	Spring 2015
Applied Calculus I	Fall 2013, Spring 2014
Applied Calculus II	Fall 2016
Calculus I	Fall 2014
Calculus I (flipped)	Fall 2017, Spring 2018
Calculus II	Spring 2017
Calculus III	Fall 2015

CUNY John Jay College of Criminal Justice, New York, NY

College Algebra	Fall 2010, Spring 2012
Finite Mathematics	Spring 2011, Fall 2011
Pre-Calculus	Fall 2011
Calculus I	Spring 2011

Opportunity Programs at NYU, New York, NY

Calculus I Workshop	Summer 2011, 2012, 2013, 2014
	Fall 2010, 2011, Winter 2012, Spring 2012
Quantitative Reasoning Workshop	Summer 2010, 2012, 2013
(Probability, Statistics)	Fall 2011, Spring 2011

Opportunity Programs at Barnard College, New York, NY

Pre-calculus	Summer 2014

SERVICE

As a journal referee:
> *Algebraic & Geometric Topology*
> *Journal of Differential Geometry*
> *Journal of Knot Theory & its Ramifications*
> *Proceedings of the AMS*

As a conference and seminar (co-)organizer:

Joint GT-UGA Topology Seminar	August 2022 – present
Tech Topology Conference, GaTech	Dec 2023
Tech Topology Summer School, GaTech	Jul 2023
AMS Southeastern Sectional Meeting Special Session	Mar 2023
Tech Topology Conference, GaTech	Sep 2022
AMS Southeastern Sectional Meeting Special Session	Oct 2022
Tech Topology Conference, GaTech	Dec 2021
UMass Geometry and Topology Seminar Co-organizer	Sep 2018 – May 2021

Departmental Service:

GaTech School of Mathematics Diversity, Equity, and Inclusion Committee	2021-2022
UVa Math Teaching Seminar Presentation	Oct 2017
UVa *Teaching as a Graduate Student* Workshop Facilitator	Aug 2017
UVa flipped Calculus I material developer	Summer 2017
UVa Math Teaching Mentor	2015 – 2016

Outreach:

UVa Math Circle Teaching Assistant	Fall 2017
UVa Math Outreach Ambassador	Fall 2014 – Spring 2017