Jonathan Simone

Contact Information	Mathematical Sciences Carnegie Mellon University Wean Hall 8123 Pittsburgh, PA 15213	Website: http://math.cmu.edu/~ jsimor Email: jsimone@andrew.cmu.edu	ie
Research Interests	Low-dimensional topology Constructions of exotic 4-manifolds Symplectic 4-manifolds and contact 5 Knot theory	3-manifolds	
Employment	Carnegie Mellon University (CM Assistant Teaching Professor, Mathematical Science Professor, Professor, Mathematical Science Professor, Profess	IU), Pittsburgh, PA natics	2024 - present
	Georgia Institute of Technology Visiting Assistant Professor, Mathem	(GaTech), Atlanta, GA atics	2021 - 2024
	University of Massachusetts Am Visiting Assistant Professor, Mathem	herst (UMass), Amherst, MA atics	2018 - 2021
Education	University of Virginia (UVa) , Ch Doctor of Philosophy in Mathematics Advisor: Thomas E. Mark	aarlottesville, VA	May 2018
	Hunter College, New York, NY Master of Arts in Pure Mathematics		June 2011
	New York University , New York, Bachelor of Arts in Mathematics, Cu Minor in Business Studies, Minor in	NY m Laude Computer Applications	May 2009
Awards	Student Recognition of Excellence in Distinguished Teaching Award Finali All University Graduate Teaching Av	Teaching, GaTech st, UMass vard, UVa	2023 2020, 2021 2017
PUBLICATIONS	On the nonorientable 4- ball gene with Fraser Binns, Sungkyung Kang, to appear in <i>Algebraic and Geometri</i>	as of torus knots and Paula Truöl. Submitted c Topology	
	Geography of symplectic Lefschetz fibrations and rational blowdowns with R. Inanc Baykur and Mustafa Korkmaz. Trans. Amer. Math. Soc. 377 (2024), 6771-6792		
	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	Tight contact structures on toroidal plumbed 3-manifolds with Tanushree Shah			
	 Cubiquitous lattices and branched covers bounding rational balls with Erica Choi, Nur Saglam, Katerina Stuopis, and Hugo Zhou On χ-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. 			
	Tight contact structures on some plumbed 3-manifolds			
Select Research Talks	AMS Fall Southeastern Section Meeting, University of South Alabama Knot Online Seminar, Virtual Tech Topology Conference, GaTech	Oct 2023 Apr 2023 Dec 2022		
	Math Seminar, Spelman College Math Club, Agnes Scott College Topology Seminar, University of Georgia	Oct 2022 Sep 2022 Apr 2022 Oct 2021		
	Algebra-Topology Seminar, University of Alabama Geometry Topology Seminar, GaTech Low-dimensional Topology and Symplectic Geometry Weekend (remote) Geometry Seminar, University of Virginia Topology Seminar, Brandeis University	Oct 2021 Sep 2021 Apr 2021 Dec 2020 Oct 2020		
Mentoring	At Carnegie Mellon University			
Experience	REU Mentor Links, Lattices, and Rational homology 4-balls	Summer 2025		
	Undergraduate Independent Study General Topology	Spring 2020		
	At Georgia Tech			
	REU Mentor Cubiquitous lattices and Branched Covers bounding rational balls On χ -slice links pretzel links	Summer 2023 Summer 2022		
	Directed Reading Program Riemannian Geometry Hyperbolic Geometry Knot Theory	Spring 2024 Spring 2023 Fall 2022		
	At UMass Amherst			
	Doctoral Dissertation Committee Member Equivariant surgeries and irreducible embeddings of surfaces in dimension four Andrew Havens	2021		
	Undergraduate Senior Thesis Co-Chair Knot Theory and Invariants	2020-2021		
	Undergraduate Independent Study Complex Variables	Spring 2020		

	Theory of Manifolds Theory of Surfaces	Spring 2020 Fall 2019	
Teaching Experience	Carnegie Mellon University , Pittsburgh, PA Differential Geometry of Curves and Surfaces Matrices and Linear Transformations	Spring 2025 Fall 2024, Spring 2025	
	Georgia Institute of Technology , Atlanta, GA Abstract Algebra I Discrete Mathematics Number Theory Linear Algebra Differential Calculus	Spring 2024 Fall 2023 Spring 2023 Spring 2022, Fall 2022 Fall 2021	
	University of Massachusetts Amherst , Amhers Complex Variables Advanced Calculus Linear Algebra Multivariable Calculus	st, MA Spring 2020 Fall 2019 Spring 2019, 2020 & Fall 2020 Fall 2018	
	University of Virginia , Charlottesville, VA Financial Mathematics Applied Calculus I Applied Calculus II Calculus I	Spring 2015 Fall 2013, Spring 2014 Fall 2016 Fall 2014	
	Calculus I (flipped) Calculus II Calculus III	Fall 2017, Spring 2018 Spring 2017 Fall 2015	
	CUNY John Jay College of Criminal Justice College Algebra Finite Mathematics Pre-Calculus Calculus I	, New York, NY Fall 2010, Spring 2012 Spring 2011, Fall 2011 Fall 2011 Spring 2011	
	Opportunity Programs at NYU , New York, NY Calculus I Workshop	Y Summer 2011, 2012, 2013, 2014 Fall 2010, 2011, Winter 2012, Spring 2012	
	Quantitative Reasoning Workshop (Probability, Statistics)	Summer 2010, 2012, 2013 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 Michigan Mathematical Journal Proceedings of the AMS		
	As a conference and seminar (co-)organizer: Joint GT-UGA Topology Seminar Tech Topology Conference, GaTech Tech Topology Summer School, GaTech AMS Southeastern Sectional Meeting Special	August 2022 – present Dec 2023 Jul 2023 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