

STUART NATHAN THOMAS

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EDUCATION

University of Maryland, College Park

August 2021 - present

Ph.D. in Physics

JQI Graduate Fellow

William & Mary

August 2017 - May 2021

B.S. with Honors in Physics, Minor in Mathematics

Thesis: “Topology of the $O(3)$ non-linear sigma model under the gradient flow”, supv. Christopher Monahan

1693/Stamps Scholar

Overall GPA: 3.96/4.00

Major GPA: 3.95, Minor GPA: 4.00

Winter Park High School

August 2013 - May 2017

International Baccalaureate Diploma

IB Points: 40

Overall GPA: 4.00/4.00

RESEARCH EXPERIENCE

Condensed Matter Theory Center, University of Maryland, College Park

Aug 2021 – present

Graduate Research Assistant

Jay Deep Sau - College Park, Maryland

- Emergent phenomena in condensed matter systems.

William & Mary

May 2020 – May 2021

Undergraduate Honors Thesis

Chris Monahan - Williamsburg, Virginia

- Used computational and analytical techniques to study the gradient flow in lattice QCD systems.

William & Mary

May 2018 – May 2021

Research Assistant

Enrico Rossi - Williamsburg, Virginia

- Theoretical analysis of Andreev reflection in metal–superconductor heterojunctions in quantum Hall systems
- Calculation of non-equilibrium transport properties in Josephson junctions

Microsoft Station Q

May 2019 – Aug 2019

Quantum Research Intern

Roman Lutchyn - Santa Barbara, California

- Created simulations of biased Josephson Junctions in order to study the effects of multiple Andreev reflection
- Studied the effects of disorder on topological phase in a realistic simulated system

PUBLICATIONS

“Comparing numerical methods for hydrodynamics in a 1D lattice model”

SNT, Brayden Ware, Jay D Sau, Christopher David White

arXiv preprint arXiv:2310.06886 — 2023

“Classical time crystal Ginzburg-Landau study of coupled parametric oscillators”

SNT, Jay D Sau

arXiv preprint arXiv:2306.13652 — 2023

“Disorder suppression in topological semiconductor-superconductor junctions”

SNT, Sankar Das Sarma, Jay D Sau

Physical Review B **106** (17), 174501 — 2022

“Sonic and Iconic: Music Revolutions From Sound-Based Genres”

Clare Heinbaugh, Ethan Shelburne, **SNT**

The UMAP Journal **42** (3), 217-242 — 2021

PRESENTATIONS

“Classical coupled parametric oscillators as an example of time crystals defined by order parameter dynamics”

SNT, Jay Sau

APS March Meeting 2024

Mar 2024

“Benchmarking Computational Methods for Hydrodynamics of Noisy Quantum Chains”

SNT, Christopher White, Brayden Ware, Jay Sau

APS March Meeting 2023

Mar 2023

“Topology of the $O(3)$ non-linear sigma model under the gradient flow”

SNT, Christopher Monahan

The 38th International Symposium on Lattice Field Theory, LATTICE2021 **396**

Nov 2021

“Effect of Zeeman Splitting on Andreev Reflection in Quantum Hall–Superconductor Heterostructures”

Joseph Cuozzo, Xiang Hu, **SNT**, Enrico Rossi

APS March Meeting 2020 **65** (1)

Mar 2020

“Andreev reflection in Graphene-superconductor junctions in the quantum Hall regime”

Joseph Cuozzo, **SNT**, Xiang Hu, Enrico Rossi

APS March Meeting 2019 **64** (2)

Mar 2019

SCHOLARSHIPS & AWARDS

Graduate Fellowship

Joint Quantum Institute

Aug 2021

Phi Beta Kappa

William & Mary

May 2021

The Don Edward Harrison Jr. Award for Excellence in Physics

William & Mary Physics Department

To be awarded to the senior with the highest demonstrated achievement in physics.

Apr 2021

Outstanding Winner in the Interdisciplinary Contest in Modeling

Consortium for Mathematics and Its Applications

Five day international Mathematical Modeling Competition with over 16,000 participants

Feb 2021

E.G. Clark Memorial Scholarship

William & Mary Physics Department

An annual scholarship to a rising senior, with a concentration in physics, who has demonstrated an outstanding aptitude for the study of physics with two letters of recommendation.

Apr 2020

RISE Scholarship

DAAD Germany

Funding to perform research in Germany for a summer (*did not accept*)

Feb 2018

1693/Stamps Scholarship*Aug 2017**William & Mary/Stamps Organization*

National merit scholarship providing full in-state tuition, room and board; \$5000 research stipend

TECHNICAL STRENGTHS

Expert Julia, Python, Linux/Unix**Advanced** C/C++, Mathematica, Git, HTML, PHP, JS, CSS