SHAMUEL AUYEUNG

Department of Mathematics Trinity College

CONTACT INFORMATION

Email: shamuel.auyeung@trincoll.edu

Mailing address: Department of Mathematics, Trinity College, 300 Summit St, Hartford, CT 06106

Personal page: sunscorched.github.io

EDUCATION

Ph.D., Mathematics, Stony Brook University

August 2017 - August 2023

Advisor: Mark McLean

Thesis: Local and Fixed-Point Floer (Co)homologies

B.S., Mathematics with honors, Calvin College September 2012-May 2017

Thesis advisor: Christopher Moseley

B.A., Philosophy with honors, Classical Greek, Calvin College September 2012-May 2017

RESEARCH

Current interests: symplectic geometry: Lagrangian and fixed-point Floer (co)homology; algebraic singularities, Lie algebras from almost complex geometry, string topology

Publications and Preprints:

- Shamuel Auyeung, Jin-Cheng Guu, and Jiahao Hu, On the Algebra Generated by μ̄, Ō, ∂, μ. Complex Manifolds Vol. 10, Iss. 1, (2023). https://www.degruyter.com/document/doi/10.1515/coma-2022-0149/html.
- Shamuel Auyeung, Local Lagrangian Floer Homology of Quasi-Minimally Degenerate Intersections.

 To appear in Journal of Topology and Analysis. https://arxiv.org/abs/2109.03679.
- Shamuel Auyeung, Joshua Ruiter, and Daiwei Zhang. An Algebraic Characterization of Highly Connected 2n-Manifolds. Rose-Hulman Undergraduate Mathematics Journal: Vol. 17, Iss. 2, Art. 5. https://scholar.rose-hulman.edu/rhumj/vol17/iss2/5.
- Shamel Auyeung and Eric Yu. The Krein Matrix and an Interlacing Theorem. SIAM Undergraduate Research Online Journal Vol. 7. https://www.siam.org/publications/siuro/volume-7.

Seminars Participated In:

• Symplectic Geometry, Gauge Theory, and Low-Dimensional Topology Seminar Fall 2021-2022 (Co-organizer, 2022)

Fall 2022

• Student Symplectic Seminar (Co-organizer)

• Stable Homotopy Theory and Complex-Oriented Cohomologies Summer 2022

• Floer Homotopy Theory Seminar Spring 2022

• Western Hemisphere Virtual Symplectic Seminar Spring 2020-Spring 2022 (online)

• RTG Student Seminar on Modular Forms Spring 2020 (Co-organizer)

• RTG Student Seminar on Homological Mirror Symmetry	Fall 2019
(Co-organizer)	
• Graduate Student Seminar	Fall 2017-current

Academic Talks:

• Models for Eilenberg-MacLane Spaces using Symmetric Products SBU Graduate Student Seminar	Spring 2023
• Survey of Sheaf Theoretic Approaches to Symplectic/Contact Geometry SBU Student Symplectic Seminar	Fall 2022
• Oriented Cobordism, Genera, and the Hirzebruch Signature Theorem SBU Student Topology Seminar	Fall 2022
• Adjacencies, Multiplicity, and Fixed-Point Floer Cohomology University of Iowa Geometry and Topology Seminar	Fall 2022
• Symplectic Cohomology II: Product Structures, Loop Spaces, and Hochschild Homo SBU Student Symplectic Seminar	logy Fall 2022
• Symplectic Cohomology I: Reeb Dynamics and Viterbo Functoriality SBU Student Symplectic Seminar	Fall 2022
• Adjacencies, Multiplicity, and Fixed-Point Floer Cohomology Rutgers University: Woodward Research Group	Fall 2022
• Milnor Fibrations, Singularities, and Floer Cohomology SBU Research Spotlight	Fall 2022
• $\langle k \rangle$ -Manifolds and Framed Cobordism of Cornered Manifolds SBU Floer Homotopy Theory Seminar	Spring 2022
• Framed Cobordism and Thom Spectra SBU Floer Homotopy Theory Seminar	Spring 2022
• Incarnations of McKay Correspondences: Representations and du Val Singularities SBU Graduate Student Seminar	Spring 2022
• Local Lagrangian Floer Homology of Quasi-Minimally Degenerate Intersections Western Hemisphere Virtual Symplectic Seminar	Fall 2021
• Twisted Complexes and Split-Generation for Fukaya Categories SBU RTG Seminar on Homological Mirror Symmetry	Fall 2019
• Morse Homology, Hamiltonian Floer Theory, and Arnold's Conjecture SBU Graduate Student Seminar	Fall 2019
• The de Rham Groupoid SBU RTG Seminar on Higgs Bundles	Fall 2018
• An Introduction to Lie Groups Calvin College Math Colloquium	Spring 2017
• Classification of n-Connected 2n-Manifolds Via Homotopy Theory Calvin College Math Colloquium	Spring 2015
• An Overview of Zorn's Lemma and its Guises Calvin College Math Colloquium	Spring 2015
• The Krein Matrix and an Interlacing Theorem Calvin College Math Colloquium	Fall 2013

Educational Talks (I-STEM):

• Complex Numbers and an Application to a Counting Problem

Summer 2022

• Introduction to Group Theory and its Uses Summer 2021 • The Pigeonhole Principle Summers 2018, 2019, 2021 • Complex Numbers and Vizualizing Complex Functions Summers 2018, 2019, 2021 TEACHING (SBU) • MAT 132 - Calculus II Spring 2023 • MAT 122 - Overview of Calculus with Applications Fall 2022 • MAT 203 - Calculus III, with Applications Fall 2020 • MAT 126 - Calculus III, instructor Summer 2020 • MAT 122 - Overview of Calculus with Applications Fall 2019 • MAT 123 - Precalculus Fall 2019 • MAT 123 - Precalculus Spring 2019 • MAT 312 - Applied Abstract Algebra, instructor Summer 2019 • MAT 131 - Calculus I Fall 2018 • MAT 132 - Precalculus Spring 2021 • MAT 131 - Calculus I Fall 2018 • MAT 310 - Inear Algebra Spring 2021 • MAT 310 - Linear Algebra Fall 2017 FURTHER EXPERIENCE • Teacher for I-STEM High School Mathematics Program Summers 2018-2022 • Math, Computer Science, and Philosophy Grader at Calvin College August 2017 - May 2023 • CSU Microwaves Magneti	• Graph Theory and Error-Correcting Codes	Spring, Summer 2022
• The Pigeonhole Principle Summer 2019 • Complex Numbers and Vizualizing Complex Functions Summers 2018, 2019, 2021 TEACHING (SBU) • MAT 132 - Calculus II Spring 2023 • MAT 131 - Calculus I Fall 2021 • MAT 131 - Calculus III with Applications Fall 2021 • MAT 203 - Calculus III, instructor Summer 2020 • MAT 126 - Calculus II, instructor Summer 2020 • MAT 127 - Overview of Calculus with Applications Fall 2019 • MAT 123 - Precalculus Fall 2019 • MAT 123 - Precalculus Spring 2019 • MAT 311 - Calculus I Fall 2019 • MAT 313 - Precalculus Spring 2019 • MAT 118 - Mathematical Thinking, instructor Summer 2018 • MAT 118 - Mathematical Thinking, instructor Summer 2018 • MAT 310 - Linear Algebra Fall 2017 FURTHER EXPERIENCE • Teacher for I-STEM High School Mathematics Program August 2017 - May 2023 • Math Learning Center Tutor August 2017 - May 2023 • Math, Computer Science, and Philosophy Grader at Calvin College August 2013 - May 2015 • CSU Extreme Ultraviolet Laser L	• What is Hamiltonian Mechanics?	Spring 2022
• Complex Numbers and Vizualizing Complex Functions Summers 2018, 2019, 2021 TEACHING (SBU) • MAT 132 - Calculus II Spring 2023 • MAT 122 - Overview of Calculus with Applications Fall 2022 • MAT 203 - Calculus II, instructor Summer 2020 • MAT 126 - Calculus II, instructor Summer 2020 • MAT 122 - Overview of Calculus with Applications Fall 2019 • MAT 312 - Precalculus Fall 2019 • MAT 312 - Applied Abstract Algebra, instructor Summer 2019 • MAT 313 - Calculus I Fall 2019 • MAT 313 - Precalculus Spring 2019 • MAT 313 - Calculus I Fall 2018 • MAT 313 - Calculus I Fall 2018 • MAT 131 - Calculus I Spring 2019 • MAT 312 - Precalculus Spring 2018 • MAT 132 - Precalculus Spring 2018 • MAT 123 - Precalculus Spring 2018 • MAT 124 - Precalculus Spring 2018 • MAT 125 - Precalculus Spring 2017 • Math Learning Center Tutor August 2017 - May 2023 • Math Learning Center Tutor August 2017 - May 2015 • CSU E		Summer 2021 Summer 2019
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• MAT 122 - Overview of Calculus with Applications • MAT 131 - Calculus I • MAT 203 - Calculus III with Applications • MAT 203 - Calculus III, instructor • MAT 126 - Calculus III, instructor • MAT 127 - Overview of Calculus with Applications • MAT 129 - Overview of Calculus with Applications • MAT 123 - Precalculus • MAT 123 - Precalculus • MAT 312 - Applied Abstract Algebra, instructor • MAT 123 - Precalculus • MAT 118 - Mathematical Thinking, instructor • MAT 118 - Mathematical Thinking, instructor • MAT 120 - Precalculus • MAT 310 - Linear Algebra • MAT 310 - Linear Algebra Fall 2017 FURTHER EXPERIENCE • Teacher for I-STEM High School Mathematics Program • Math Learning Center Tutor • Math Learning Center Tutor • Math, Computer Science, and Philosophy Grader at Calvin College • Math, Computer Science, and Philosophy Grader at Calvin College • CSU Microwaves Magnetics Lab Intern • CSU Extreme Ultraviolet Laser Lab Intern • Summer 2011 SERVICE AND OUTREACH • SBU Math Day - Session on Hexaflexagons • Tutor for the Calvin Prison Initiative • Tutor for WEB Program for Under-privileged Students • August 2015 - May 2017 HONORS AND AWARDS • Barry M. Goldwater Scholarship • NSF REU Fellowship • Summers 2013-2016	TEACHING (SBU)	
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 MAT 203 - Calculus III with Applications MAT 126 - Calculus II, instructor MAT 122 - Overview of Calculus with Applications MAT 123 - Precalculus MAT 123 - Precalculus MAT 312 - Applied Abstract Algebra, instructor MAT 312 - Applied Abstract Algebra, instructor MAT 131 - Calculus I MAT 131 - Calculus I MAT 18 - Mathematical Thinking, instructor MAT 18 - Mathematical Thinking, instructor MAT 310 - Linear Algebra MAT 310 - Linear Algebra Fall 2017 FURTHER EXPERIENCE Teacher for I-STEM High School Mathematics Program Math Learning Center Tutor Math Learning Center Tutor Math, Computer Science, and Philosophy Grader at Calvin College CSU Microwaves Magnetics Lab Intern CSU Extreme Ultraviolet Laser Lab Intern Summer 2012 SERVICE AND OUTREACH SBU Math Day - Session on Hexaflexagons Tutor for the Calvin Prison Initiative Tutor for WEB Program for Under-privileged Students August 2016 - May 2017 HONORS AND AWARDS Barry M. Goldwater Scholarship August 2015 - May 2016 NSF REU Fellowship Summers 2013-2016 	• MAT 122 - Overview of Calculus with Applications	Fall 2022
 MAT 126 - Calculus II, instructor MAT 122 - Overview of Calculus with Applications MAT 123 - Precalculus MAT 123 - Precalculus MAT 312 - Applied Abstract Algebra, instructor MAT 123 - Precalculus MAT 123 - Precalculus MAT 123 - Precalculus MAT 123 - Precalculus I MAT 131 - Calculus I MAT 131 - Calculus I MAT 132 - Precalculus MAT 130 - Precalculus MAT 310 - Linear Algebra Fall 2017 FURTHER EXPERIENCE Teacher for I-STEM High School Mathematics Program Math Learning Center Tutor Math Learning Center Tutor Mathematics Directed Reading Program Mentor Math, Computer Science, and Philosophy Grader at Calvin College CSU Microwaves Magnetics Lab Intern CSU Extreme Ultraviolet Laser Lab Intern Summer 2012 SERVICE AND OUTREACH SBU Math Day - Session on Hexaflexagons Tutor for the Calvin Prison Initiative Tutor for WEB Program for Under-privileged Students August 2016 - May 2017 HONORS AND AWARDS Barry M. Goldwater Scholarship NSF REU Fellowship Summers 2013-2016 	• MAT 131 - Calculus I	Fall 2021
 MAT 122 - Overview of Calculus with Applications MAT 123 - Precalculus MAT 312 - Applied Abstract Algebra, instructor MAT 312 - Applied Abstract Algebra, instructor MAT 123 - Precalculus MAT 123 - Precalculus I MAT 131 - Calculus I MAT 118 - Mathematical Thinking, instructor MAT 118 - Mathematical Thinking, instructor MAT 310 - Linear Algebra MAT 310 - Linear Algebra Fall 2017 FURTHER EXPERIENCE Teacher for I-STEM High School Mathematics Program Math Learning Center Tutor Math Learning Center Tutor Mathematics Directed Reading Program Mentor Math, Computer Science, and Philosophy Grader at Calvin College August 2013 - May 2015 CSU Microwaves Magnetics Lab Intern CSU Extreme Ultraviolet Laser Lab Intern Summer 2011 SERVICE AND OUTREACH SBU Math Day - Session on Hexaflexagons October 2022 Tutor for the Calvin Prison Initiative Tutor for WEB Program for Under-privileged Students August 2016 - May 2017 HONORS AND AWARDS Barry M. Goldwater Scholarship NSF REU Fellowship Summers 2013-2016 	• MAT 203 - Calculus III with Applications	Fall 2020
 MAT 123 - Precalculus MAT 312 - Applied Abstract Algebra, instructor MAT 312 - Precalculus MAT 123 - Precalculus MAT 131 - Calculus I MAT 131 - Calculus I MAT 131 - Mathematical Thinking, instructor MAT 123 - Precalculus MAT 123 - Precalculus MAT 123 - Precalculus MAT 310 - Linear Algebra MAT 310 - Linear Algebra Fall 2017 FURTHER EXPERIENCE Teacher for I-STEM High School Mathematics Program Math Learning Center Tutor Mathematics Directed Reading Program Mentor Mathematics Directed Reading Program Mentor Math, Computer Science, and Philosophy Grader at Calvin College August 2013 - May 2015 CSU Microwaves Magnetics Lab Intern CSU Extreme Ultraviolet Laser Lab Intern Summer 2011 SERVICE AND OUTREACH SBU Math Day - Session on Hexaflexagons October 2022 Tutor for the Calvin Prison Initiative Tutor for WEB Program for Under-privileged Students August 2015 - May 2017 HONORS AND AWARDS Barry M. Goldwater Scholarship NSF REU Fellowship Summers 2013-2016 	• MAT 126 - Calculus II, instructor	Summer 2020
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 Barry M. Goldwater Scholarship NSF REU Fellowship August 2015 - May 2016 Summers 2013-2016 	• Tutor for WEB Program for Under-privileged Students	August 2016- May 2017
• NSF REU Fellowship Summers 2013-2016	HONORS AND AWARDS	
	Barry M. Goldwater Scholarship	August 2015 - May 2016
• NSF Scientific Computing Scholarship August 2012 - May 2017	• NSF REU Fellowship	Summers 2013-2016
	• NSF Scientific Computing Scholarship	August 2012 - May 2017