

Colin Roberts

Colorado State University
Department of Mathematics
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Fort Collins, CO 80523

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Education

Graduate Education

Aug. 2017 - Present

Colorado State University
Mathematics Ph.D. Program

Undergraduate Education

Aug. 2012 - May 2017

Colorado State University
Bachelor of Science in General Mathematics & Physics

Published Works

2. Brooks Adams, Henry Adams, and Colin Roberts, *Sweeping Costs of Planar Domains*, In Erin W Chambers, Brittany T Fasy, and Lori S Ziegelmeier, eds., *Research in Computational Topology*, pages 71-92, AWM Springer series, volume 13, 2018.
 1. Jonathan Gilbert, Colin Roberts, and Jacob Roberts, *Near-Resonant Light Propagation in an Absorptive Spatially Anisotropic Ultracold Gas*, Journal of the Optical Society of America B, pages 718–723, volume 25, number 4, 2018.
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Teaching

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| Instructor: Math 272, <i>Applied Mathematics for Chemists II</i> | SP 2019 |
| Instructor: Math 271, <i>Applied Mathematics for Chemists I</i> | FA 2019 |
| Course Development: Math 118, <i>College Algebra in Context II</i> | SM 2019 |
| Instructor: Math 255, <i>Calculus for Biological Scientists II</i> | SP 2019 |
| Instructor: Math 155, <i>Calculus for Biological Scientists I</i> | FA 2018 |
| Instructor: Math 340, <i>Introduction to Ordinary Differential Equations</i> | SM 2018 |
| Instructor: Math 160, <i>Calculus for Physical Scientists I</i> | SP 2018 |
| Instructor: Math 161, <i>Calculus for Physical Scientists II</i> | FA 2017 |
| Learning Assistant: PH 141, <i>Physics for Scientists and Engineers I</i> | FA 2015 |

Organization and Service

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| Presenter for Math Jam Junior at Windsor Charter Academy | Dec. 19, 2019. |
| Mentor Meetup with Graduate Center for Inclusive Mentoring at Colorado State University | Nov. 4, 2019 |
| Organizer for Lie Theory Reading Group | Oct. 2019 - Present |
| Mentor for Association for Women in Mathematics at Colorado State University | Aug. 2019 - Present |
| Liaison for SIAM Chapter at Colorado State University | Aug. 2019 - Present |
| Founder/Organizer of the Mathematical Physics Lab | Aug. 2018 - Present |
| Co-organizer for the Greenslopes graduate seminar | Jan. 2019 - May 2019 |
| President of the Society of Physics Students chapter at Colorado State University | Aug. 2016 - May 2017 |
| Voting member for physics for the College Council for the College of Natural Sciences | Aug. 2015 - Dec. 2016 |
| Tutor for the physics department at Colorado State University | Mar. 2015 - May 2016 |

Research Talks

Geometric Algebra and Spinors. Solving Problems in Applied Mathematics at Colorado State University, October 21st, 2019.

Information and Entropy. Data Science Seminar at Colorado State University, September 19th, 2019.

Differential Forms and Stokes' Theorem in \mathbb{R}^3 . Greenslopes graduate student seminar at Colorado State University, September 6th, 2019.

Tensor Structures on Manifolds. Tensors: Algebra-Computation-Applications 2019, June 13th, 2019.

The Principle of Least Action and Variational Methods. Mathematical Physics Lab at Colorado State University, April 23rd, 2019.

Tensors and Exterior Algebra. Greenslopes graduate student seminar at Colorado State University, March 14th, 2019.

Special Relativity. Mathematical Physics Lab at Colorado State University, January 29th, 2019.

Incompressible Fluid Flow: Arnold's Geometrical Approach. Solving Problems in Applied Mathematics Seminar at Colorado State University, November 6th, 2018.

Introduction to Riemannian Geometry, Part 2. Mathematical Physics Lab at Colorado State University, October 16th, 2018.

Introduction to Riemannian Geometry, Part 1. Mathematical Physics Lab at Colorado State University, October 9th, 2018.

Awards and Honors

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| Louis and Gladys Weber Scholarship | 2016 |
| Donovan B. and Sally S. Hicks Scholarship | 2016 |
| Colorado State Honors Scholarship | 2012-2016 |
| Western Undergraduate Exchange Scholarship | 2012-2016 |
| College of Natural Sciences Dean's List | Fall 2014, Fall 2015 |

Research Experience

A Distributed Learning Environment for the Mathematics of Climate Change with Christopher Jones - NSF Award DMS-1722578, 2019.

Workshops and Research Meetings Attended

MCRN summer school and academic year engagement program, 2019.

Biology, Analysis, Geometry, Energies, Links [bagel19]: A Program on Low-dimensional Topology, Geometry, and Applications, 2019.

Tensors: Algebra-Computation-Applications (TACA), 2019.

Professional Affiliations

Member: American Mathematical Society

Member: Society for Industrial and Applied Mathematics

Member: American Physical Society

Member: American Association for Physics Teachers

Member: Sigma Pi Sigma Honors Physics Fraternity.

Advisor

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| Name | Clayton Shonkwiler |
| Department | Colorado State Mathematics |
| Position | Assistant Professor |
| Contact | clayton.shonkwiler@colostate.edu |

Committee

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| Name | Henry Adams |
| Department | Colorado State Mathematics |
| Position | Assistant Professor |
| Contact | henry.adams@colostate.edu |

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| Name | Wolfgang Bangerth |
| Department | Colorado State Mathematics |
| Position | Professor |
| Contact | wolfgang.bangerth@colostate.edu |

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| Name | Jacob Roberts |
| Department | Colorado State Physics |
| Position | Professor, Department Chair |
| Contact | Jacob.Roberts@colostate.edu |