Luke Askew | Curriculum Vitae

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Education

Colorado State University: Fall 2019 - Spring 2022

Pursuing B.S. in Mathematics
- University GPA 3.911
- Major GPA 3.991

Front Range Community College: Spring 2016 - Spring 2019

A.S. in Mathematics
- Magna Cum Laude
- Degree earned through concurrent enrollment

Research Experience

Montana State University Computer Science REU: Summer 2019

Persistent Homology Based Approaches to Localization
- Compared performance of heuristic search algorithms utilizing tools from Topological Data Analysis
- Supervised by Prof. Brittany Terese Fasy, Prof. David L. Millman, and Prof. Binhai Zhu

Teaching

Supplemental Instructor: Spring 2019
- Planned and delivered two one-hour lessons per week for a section of College Algebra at Front Range Community College,

FRCC Math Tutor: Fall 2018 - Spring 2019
- Mathematics Tutor at Front Range Community College's Math Help Center

Talks

Elliptic Curves and the Congruent Number Problem: Spring 2021

MATH 605C Final Course Presentation

Integer Valued Matrices and Abelian Categories: Spring 2021

Applied Category Theory Seminar (ACTS) at CSU

The Category of Simply Typed λ-theories and the Category of Small Cartesian Closed Categories are Equivalent : Spring 2021

Applied Category Theory Seminar (ACTS) at CSU

Applications of Yoneda's Lemma and Equivalence of Categories: Fall 2020

Applied Category Theory Seminar (ACTS) at CSU

Computing All Polynomial Solutions to Systems of Homogeneous Linear PDEs with Gröbner Bases: Fall 2019

Abstract Algebra I Cash Prize Winner at CSU's Undergraduate Poster Competition

a Topology Driven Approach to Localization: Summer 2019

MSU REU Poster Session. Accepted to present at the 2020 National Conference for Undergraduate Research which was cancelled due to COVID-19.

Service

- CSU MATH 160 Grade Appeal Committee — Spring 2021
- CSU MATH 141 Grade Appeal Committee — Spring 2021
- CSU Ram Welcome Math Department Volunteer — Fall 2021

Activities

- Seminars and Conferences Regularly Attended
  - Topos Institute Colloquium — Summer 2021
  - VaNTAGe - Virtual Number Theory and Arithmetic Geometry — Summer 2021 - Present
  - ACTS at CSU - Applied Category Theory Seminar — Fall 2020 - Present
  - CATS2021 - Additive Categories Between Algebra and Functional Analysis — Week of 2021-03-01
  - Putnam Seminar at CSU — Spring 2018 - Fall 2020
    - 2018 Score: 2
    - 2019 Score: 11
  - JMM 2020 Attendee
- Miscellaneous
  - Title IX certified through Everfi
  - MSU Ideals, Varieties, and Algorithms Book Club — Summer 2019
    - Presented Buchberger's Algorithm — (07-10)
    - Presented Dickson's Lemma — (06-26)
    - Presented on Monomial Orderings — (06-12)
  - FRCC Philosophy Club Founding Officer — Spring 2019
  - FRCC Math Club Participant — Fall 2018
  - CSU Highschool Internship in Mathematics of Biology — Summer 2018
    - Under Supervision of Prof. Yongcheng Zhou
- Computing
  - Languages: Python, Sagemath, Java, R
  - Software: LaTeX, Linux

Mathematics Coursework

Planned

- MATH 571 Topology II
- MATH 605A Number Theory: Algebraic Number Theory
- MATH 617 Integration and Measure Theory
- MATH 667 Advanced Algebra II (Commutative Algebra)

Currently Enrolled

- MATH 301 Introduction to Combinatorics
- MATH 570 Topology I
- MATH 619 Complex Variables II
- MATH 666 Advanced Algebra I (Representation Theory)

Graduate Courses

- MATH 517 Introduction to Real Analysis
- MATH 519 Complex Variables I
- MATH 560 Linear Algebra
- MATH 566 Introduction to Abstract Algebra I
- MATH 567 Introduction to Abstract Algebra II
- MATH 605C Number Theory: Elliptic Curves

Upper Division Courses

- MATH 317 Advanced Calculus of One Variable
- MATH 332 Partial Differential Equations
- MATH 345 Differential Equations
- MATH 360 Mathematics of Information Security
- MATH 366 Introduction to Abstract Algebra
- MATH 405 Introduction to Number Theory
- MATH 466 Abstract Algebra I
- MATH 469 Linear Algebra II
- MATH 470 Euclidean and Non-Euclidean Geometry
- MATH 472 Introduction to Topology
- MATH 474 Introduction to Differential Geometry
- MATH 476 Topics in Mathematics: Groups as Manifolds
- MATH 495 Independent Study (A First Course in Algebraic Geometry by Harris)

Lower Division Courses

- MAT 121 College Algebra
- MAT 166 Precalculus
- MAT 201, 202, 204 Calculus I, II, III
- MAT 255 Linear Algebra