

Department of Mathematics  
University of Colorado at Boulder  
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# Kevin W. Manley, PhD

**Research Interests** integral transforms, functional analysis, mathematical physics, and generalizations of the Fourier transform

**Education** University of Colorado at Boulder  
 Ph.D. in Mathematics August, 2010  
 Eric Stade, Adviser  
 Dissertation: *The Discrete Fourier-Riccati-Bessel Transform for Robin Boundary Conditions.*  
 M.S. in Mathematics May, 2006  
 B.S. in Mathematics, Physics May, 1997

**Employment History**

- Senior Instructor (Mathematics), CU Boulder: Spring 2020-present
- Instructor (Mathematics), CU Boulder: 2014-2020
- Instructor (LEEDS), CU Boulder 2014
- Lecturer (Applied Mathematics), CU Boulder 2012-2014
- Lecturer (GoldShirt Program), CU Boulder 2013
- Lecturer (Mathematics), CU Boulder 2010-2013
- Lecturer (Continuing Education), CU Boulder 2010-2013

**Awards and Honors**

- Service Award (Mathematics Department) 2001
- Pre-collegiate Development Program Teaching Honors 2001
- Sewall Teaching Excellence Award 2000

**Funding Sources**

- University Research Fellowship (CU Boulder) 2005
- University Research Fellowship (CU Boulder) 2002
- University Research Fellowship (CU Boulder) 2001

**Teaching & Mentoring Experience**

- *Topics taught as a primary instructor and coordinator, supervising TA's and Instructors:*
  - MATH1150 Precalculus  
Fall 2018 through Fall 2021
  - MATH1310 Calculus, Stochastics, and Modeling  
Fall 2018, Spring 2015, Fall 2014
  - MATH1081 Calculus for the Social Sciences  
Spring 2017, Fall 2016, Summer 2016, Spring 2016, Fall 2015
  - MATH2300 Calculus 2  
Summer 2014
- *Topics taught as a primary instructor:*
  - MATH3850 SIGMI  
Fall 2018 through Fall 2021
  - MATH1112 Mathematical Analysis in Business  
Spring 2020, Fall 2016, Spring 2016, Fall 2015, Spring 2015, Fall 2014
  - MATH2130 Linear Algebra for Non-majors  
Spring 2020, Fall 2019, Spring 2018
  - MATH2001 Discrete Mathematics

- Fall 2021, Summer 2021, Summer 2020, Summer 2019, Spring 2019, Summer 2018, Fall 2017
- MATH2300 Calculus 2
  - Summer 2019, Spring 2019, Spring 2018, Spring 2017, Fall 2014
- Math2400 Calculus 3
  - Fall 2018
- MATH2510 Introduction to statistics
  - Summer 2018, Summer 2014, Spring 2014, Fall 2013, Spring 2013, Summer 2013, Fall 2012, Spring 2012, Summer 2012, Fall 2011, Summer 2011, Spring 2011, Fall 2010
- MATH1300 Calculus 1
  - Fall 2017, Summer 2010
- MATH3130 Linear Algebra
  - Summer 2017, Spring 2015
- MATH3510 Introduction to Probability and Statistics
  - Summer 2015
- MATH1310 Calculus, Stochastics, and Modeling
  - Spring 2014
- APPM1360 Calculus 2 for Engineers
  - Spring 2014, Spring 2014
- APPM1235 Precalculus for Engineers
  - Fall 2013
- Summer Bridge Goldshirt Program (pre-engineering mentoring)
  - Summer 2013
- MATH1012 Quantitative Reasoning and Mathematical Skills
  - Spring 2013, Fall 2012, Spring 2011
- APPM2360 Linear algebra and differential equations
  - Spring 2013, Summer 2012
- APPM1350 Calculus 1 for Engineers
  - Fall 2012
- MATH1150 Precalculus
  - Spring 2012, Fall 2011, Fall 2010
- MATH1081 Calculus for the Social Sciences
  - Spring 2012

### Selected Service Activities

- PUEC member for Joseph Timmer promotion, Fall 2021
- PUEC member for Patrick Newberry, Fall 2021
- PUEC member for Lee Roberson, Fall 2020
- Diversity Committee, Fall 2020 and Spring 2020
- Serving on honors thesis committees (Thomas Watts, 4/21; Spencer Griffith, 3/21; Jonathan Gruen, 4/20; Jared Popowski, 9/19; Kevin Boyce, 4/19)
- Coordinating MATH1081, MATH1310, and MATH2300 were all done in addition to my full time teaching duties with no course release
- Lecturer/graduate student/Instructor evaluations and observations Spring 2016 – Fall 2019
- Development and implementation of math placement exam (calc/precalc/none at CU), Fall 2017 - Fall 2019
- Calculus Steering Committee (ad hoc), Spring 2018 – Fall 2019
- Interviewed lecturers for new hires, Summer 2019
- Math Department Scholarship Committee (ad hoc) Fall 2016 - Spring 2019
- PUEC member for Joseph Timmer, Fall 2018
- Learning Assistant hiring Spring 2015 – Fall 2018
- Undergraduate Committee, Fall 2015 – Spring 2016, Fall 2017 – Spring 2018
- Linear Algebra Redesign Committee (ad hoc) Fall 2017
- Discrete Mathematics Redesign and Analysis Committee (ad hoc) Fall 2015 – Spring 2016
- Organized the Professional Development Seminar, about writing documents for job applications, with

speakers and workshops, 2011

- Mathematical modeling for resistivity studies for the location of caves, 2010

#### Selected Presentations

- *The Discrete Fourier-Riccati-Bessel Transform for Robin Boundary Conditions* Poster presentation, Joint Meetings of the MAA and AMS, January 2011
- *The Discrete Fourier-Riccati-Bessel Transform for Robin Boundary Conditions*, Great Plains Operator Algebra Symposium, June 2010.
- *The Semi-classical Limit and Chaos*, University of Colorado, May 1998.

#### Colloquiums

- *A Little Weirdness from Georg Cantor*, University of Colorado, February 2021
- *Ruler/Compass vs Origami*, University of Colorado, September 2017
- *An Introduction to Feynman Path Integrals*, University of Colorado, April 2006.
- *Feynman Path Integrals: A Derivation*, University of Colorado, April 2006.
- *More Feynman Path Integrals*, University of Colorado, April 2006.
- *An Introduction to Morse Theory*, University of Colorado, April 2005.
- *An Introduction to the Weil Conjecture*, University of Colorado, October 2003.

#### Other Selected Presentations

- Invited talk: *Slovenian Karst!*, Pecos Valley Grotto, October 2021
- Invited talk: *Exploring Caves!*, Mackintosh Academy, February 2021
- Invited talk: *Rigging and Safety for the Cavernacle*, Front Range Grotto, September 2020
- Invited talk: *Surveying Colorado's Longest Cave*, June 2020
- Invited talk: *Nonstandard Caves of NM*, Pajarito Grotto, May 2020
- Invited talk: *Adventuring Underground*, Mappy Hour (The North Face), November 2019
- Invited talk: *Hydrology and Exploration in the Deepest Cave in the US*, Front Range Grotto, September 2019
- Invited talk: *Search Problems in Caves (Mathematical Approach)*, Front Range Grotto, July 2019
- Invited seminar/workshop *Vertical Systems and Rope Work*, Montana Cave Camp, October 2018
- Invited seminar/workshop *Forces, Rigging, and Systems*, National Cave Rescue Commission, May 2017, August 2018
- Invited talk: *Caving in Trubar's Breath*, Colorado School of Mines, March 2018
- Invited seminar/workshop *Hazards to Rescuers in the Cave Environment* National Cave Rescue Commission, August 2018

- Invited talk: *Geology and Mathematics*, Barnum Elementary May, December 2017
- Invited talk: *Origami vs Ruler and Compass Constructions*, CU Math Club, September 2017
- Invited talk: *Caving in Colorado*, CU Caving Club, September 2017
- Invited talk: *Caving and Mapping in Slovenia*, Colorado Grotto, October 2016
- Invited talk: *Digital Cave Survey*, National Speleological Society Front Range Grotto, May 2015
- Invited talk: *Design Considerations in Headlamp Manufacturing*, National Speleological Society National Convention, Electronics Section, July 2014
- Invited talk: *Introduction to Cave Survey*, National Speleological Society Front Range Grotto, February 2014
- Invited talk: *Surveying in Carlsbad Caverns: the Spirit World*, Front Range Grotto, November 2013

#### Conferences Attended

- Gender and Diversity workshops, November 2021, November 2019, August 2017, August 2018
- Inquiry Based Learning Intensive, August 2016
- COLTT, August 2013
- Joint Meetings of the MAA and AMS, January 2010-2013
- Great Plains Operator Algebra Symposium (GPOTS), June 2010

#### Other Scholarly Activity

*Evolution of the Caving Headlamp*, article for NSS with Steve Reames, 2018

College level content author and editor 2004 - 2013

Cengage Learning/Brooks-Cole/Thompson Learning/Houghton-Mifflin

- wrote online homework and quiz content
- authored solution sets and manuals
- wrote and coded interactive content
- wrote computer algebra system tutorials and exercises
- authored textbook supplements
- wrote clicker questions
- authored glossaries for math texts
- corrected coding and content in the work of other authors

#### Memberships

- American Mathematical Society

#### Related Skills

- Programming in HTML, Mathematica, Excel, Displet, XML, Maple, MatLab, Axum, C++, Python and assembly language.
  - Experienced with design, construction, and trouble shooting of circuits and robots.
  - 4 years of German language education