

# Jonathan Kish

Analytic Number Theorist and Award-Winning Educator

✉ [Jonathan.Kish@Colorado.edu](mailto:Jonathan.Kish@Colorado.edu)

## Education

- 2013 **Doctor of Philosophy**, *University of Colorado Boulder*, Mathematics.  
Dissertation: *Harmonic analysis on the positive rationals: Multiplicative functions and exceptional Dirichlet characters*, Supervisor: [Peter D. T. A. Elliott](#)
- 1999 **Bachelor of Arts**, *Carleton College*, Mathematics, with Distinction.

## Professional

- 2019– **Andrews Hall Faculty Fellow**, *CU Boulder*, Engineering Honors Program.  
Provide the Andrews Hall community with an additional faculty presence that integrates academic achievement, academic support, research and mentoring
- 2019– **Instructor**, *CU Boulder*, Department of Applied Mathematics.  
Courses taught: Calculus 1 and 2 for Engineers, Introduction to Differential Equations with Linear Algebra, Undergraduate Applied Analysis 2
- 2019 **Curriculum Development, Lecturer**, *CU Boulder*, ITP/TCP Program.  
Designed and taught the *Mathematics of Cryptosystems* course for the Interdisciplinary Telecommunications/Technology, Cybersecurity and Policy Program, also taught *Introduction to Cyber Security*
- 2016–2019 **Sitting Math Fellow**, *CU Boulder*, Andrews Honors Engineering Dorm.
- 2013–2019 **Lecturer**, *CU Boulder*, Department of Applied Mathematics.  
Courses taught: Calculus 1, 2 and 3 for Engineers, Calculus 1B with Algebra, Introduction to Differential Equations with Linear Algebra
- 2018 **Curriculum Development**, *CU Boulder*, Department of Applied Mathematics.  
Designed student materials that integrate *Mathematica* into Calculus 3
- 2014 **Lecturer**, *CU Boulder*, Department of Mathematics.  
Courses taught: Introduction to Discrete Mathematics, Introduction to Linear Algebra
- 2012–2013 **Graduate Teaching Assistant**, *CU Boulder*, Department of Applied Mathematics.  
Courses taught: Calculus 1 for Engineers, Calculus 1 for Engineers Work Group, Calculus 1A with Algebra
- 2012 **Invited Co-Organizer**, *New Perspectives in Multiplicative Number Theory*, Special Session of the Joint Mathematics Meeting of the American Mathematical Society and the Mathematical Association of America, Boston, Massachusetts.
- 2011 **Invited Participant**, *The 'Pretentious' View of Analytic Number Theory*, American Mathematical Society Mathematics Research Community, Snowbird, Utah.
- 2005–2011 **Graduate Teaching Assistant**, *CU Boulder*, Department of Mathematics.  
Courses Taught: College Algebra, Sprit and Uses of Mathematics 1, Precalculus, Calculus 1, 2, and 3

## Service

- 2019– **Andrews Hall Research Group**, *CU Boulder*, Engineering Honors Program.  
Lead a research group of undergraduate Honors Engineering Students investigating number-theoretic applications to modern cryptography, telecommunications and cyber security

## Decoration

- 2018 **Residence Life Institution Faculty of the Month Award**, *CU Boulder*.
- 2017 **Marinus Smith Award**, *CU Boulder*.
- 2011 **Pre-Doctoral Stribic Fellowship**, *CU Boulder Mathematics Department*.
- 2008 **Burton Jones Teaching Award**, *CU Boulder Mathematics Department*.
- 2008 **Residence Life Academic Teaching Award**, *CU Boulder*.

## Eclectic

- 2000-2001 **United States Peace Corps Volunteer**, *Darkhan, Mongolia*.  
Teacher of English as a foreign language, prepared students for local and national English competitions, assisted Japanese aid workers and a visually-impaired Mongolian student one-on-one with their English, proofread and contributed to the joint Peace Corps and [Volunteer Services Overseas](#) English Language Teachers' Activity Book, beginner and intermediate German tutor, helped implement paper recycling program at a local orphanage

## Publications

1. P. D. T. A. Elliott and J. Kish. [Harmonic analysis on the positive rationals. Determination of the group generated by the ratios  \$\(an+b\)/\(An+B\)\$](#) . *Mathematika*, 63(3):919–943, 2017. See also [arXiv:1602.03263 \[math.NT\]](#).
2. P. D. T. A. Elliott and J. Kish. [Harmonic analysis on the positive rationals II: Multiplicative functions and Maass forms](#). *J. Math. Sci. Univ. Tokyo*, 23(3):615–658, 2016. See also [arXiv:1405.7132 \[math.NT\]](#).
3. P. D. T. A. Elliott and J. Kish. [Harmonic analysis on the positive rationals I: Basic results](#). *J. Math. Sci. Univ. Tokyo*, 23(3):569–614, 2016. See also [arXiv:1405.7130 \[math.NT\]](#).
4. P. D. T. A. Elliott and J. Kish. [Multiplicative Functions and a Taxonomy of Dirichlet Characters](#). [arXiv:1208.0051 \[math.NT\]](#), 2012.
5. P. D. T. A. Elliott and J. Kish. [A Large Sieve Inequality for Euler Products](#). [arXiv:1203.0804 \[math.NT\]](#), 2012.
6. M. Budden, R. J. Eisenmenger, and J. Kish. [A Generalization of Scholz's Reciprocity Law](#). *J. Théor. Nombres Bordeaux*, 19(3):583–594, 2007.