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**Citizenship:** U.S.A.

**Affiliation:**

University of Southern California  
Department of Mathematics  
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## Employment

**Lecturer**, University of Southern California, September 2016 – present  
Los Angeles CA

**Visiting Assistant Professor**, Lawrence University, September 2014 – August 2016  
Appleton WI

**Visiting Researcher**, Bielefeld University, April – May 2014  
Supervisor: Henning Krause

**Consultant**, Insight Link Consulting, November 2012 – September 2014  
Lisbon, Portugal; Berlin, Germany; and Portland OR  
insightlinkconsulting.com

**Postdoctoral Fellow**, University of Western Ontario, September 2012 – July 2013  
visiting Instituto Superior Técnico, Lisbon, Portugal  
Supervisor: J. Daniel Christensen

## Education

**Ph.D.**, Mathematics (2006 – 2012), **University of Washington**, Seattle WA  
Area: homological algebra and homotopy theory  
Title: *A tensor-triangulated approach to derived categories of non-Noetherian rings*  
Advisor: John Palmieri

**B.A.** with High Honors (1999 – 2004), **Swarthmore College**, Swarthmore PA  
Majors: Mathematics, Physics

## Teaching Experience

- **Solo Instructor**, university-level (*IS* indicates independent study).

University of Southern California

- *Math 118: Fundamental Principles of Calculus*, F16 (two sections) S17 (two sections).
- *Math 125: Calculus I*, F16, S17.

Lawrence University

- *Math 120: Applied calculus I*, W15.
- *Math 130: Applied calculus II*, S15.
- *Math 140: Calculus I*, F14.
- *Math 150: Calculus II*, F14, W16.
- *Math 160: Calculus III*, S15, S16.
- *Math 210: Diff eqns and linear algebra*, F15.
- *Math 300: Foundations of algebra*, W15, W16.
- *Math 310: Foundations of analysis*, S16.
- *Math 545: Rings and fields*, F15.
- *Math 390-IS: Mathematical reasoning*, W15.
- *Math 390-IS: Applied Linear Algebra*, S15.
- *Math 699-IS: Category theory*, F14, W15.
- *Math 699-IS: Category theory and philosophy*, S15.
- *Math 699-IS: Homological algebra*, S16.

University of Washington

- *Math 111: Introduction to business math*, S08.
- *Math 307: Introduction to differential equations*, F09, S12.
- *Math 308: Matrix algebra with applications*, F10, W11.
- *Math 324: Advanced multivariable calculus*, F11.

- **Solo Instructor**, middle-school level.  
Summer Stretch summer math program: *Mathematical Mysteries*. Robinson Center for Young Scholars (Seattle, WA). Summer 2011.
- **Teaching Assistant**, Mathematics Department, University of Washington.  
Nine academic quarters. Math 111, 112, 124, 125, 126, and 170. 2006 – 2012.
- **TA Mentor**, Mathematics Department, University of Washington. 2008 – 2009.

## Research Interests

Triangulated category theory, homotopy theory, algebraic topology, homological algebra, derived categories  
Topological data analysis, persistent homology

Mathematical phenomenology, math-art interdisciplinary creative work, contemplative pedagogy

## Publications and Preprints

11. *The phenomenology of mathematical understanding*, with Alexandra Van Quynh.  
to appear in Journal of Consciousness Studies.
10. *Crossing the muddy field of witness, calling the lonely crowd: a walk to meet a sound*, with Elizabeth McTernan.  
to appear in Leonardo.
9. *When mathematicians speak, what do poets and musicians hear?*  
to appear in The Mathematical Intelligencer.
8. *Book review: Mathematics in 20th-century literature and art, by Robert Tubbs*.  
Mathematical Intelligencer (2016) 38:94.
7. *The user’s guide project: giving experiential context to research papers*.  
with Cary Malkiewich, Mona Merling, David White, and Carolyn Yarnall  
Journal of Humanistic Mathematics, 5 (2015), no. 2, 186–188.
6. *Variations of the telescope conjecture and Bousfield lattices for localized categories of spectra*.  
Pacific Journal of Mathematics, 276 (2015), no.2, p.483–509.
5. *Bousfield lattices of non-Noetherian rings: some quotients and products*.  
Homology, Homotopy and Applications, 16 (2014), no.2, p.205-229.
4. *The Bridges Enschede 2013 exhibition of mathematical art*.  
Journal of Mathematics and the Arts, Vol. 7, Iss. 3-4, 2013. p.150-157.
3. *Exquisite failure: the telescope as lived object*, with Elizabeth McTernan.  
In Proceedings of Bridges 2013: Mathematics, Music, Art, Architecture, Culture. Tessellations Publishing,  
Phoenix, AZ, 2013.
2. *On contemplation in mathematics*.  
Journal of Humanistic Mathematics, 3 (2013), no. 1, 74-95.
1. *Imagining negative-dimensional space*, with Elizabeth McTernan.  
In Proceedings of Bridges 2012: Mathematics, Music, Art, Architecture, Culture, p. 637-642. Tessellations Pub-  
lishing, Phoenix, AZ, 2012.

## Math-art Work

(more info on [forthelukeofmath.com](http://forthelukeofmath.com))

12. *Altitude sickness: asteroids and angels*, with Elizabeth McTernan. Mathematical performance, drawings, and book. August 2015. Performed in Himachal Pradesh, India. October 2016 gallery exhibition in Berlin, Germany.
11. *Math, poetry, and improvisations*. Improvisational music based on poems based on solicited reflections of professional mathematicians. In collaboration with Lawrence University’s improvisational music ensemble and creative writing club. February 2015.
10. *Bodies of data*. Four-day interdisciplinary collaborative evening workshop, bringing together mathematicians and local dancers during the 2014 MathFest conference in Portland OR. August 2014.
9. *The coastline paradox*, with Elizabeth McTernan. Performed measurement of the fractal dimension of a nameless Danish island, in collaboration with the Funen Art Academy (Denmark). July 2013.
8. *I wanna dance with somebody: An evening of mathematics and art in dialogue*. Math-art salon event organized with the Center for Symmetry and Deformation at the University of Copenhagen Department of Mathematics (Denmark). July 2013.
7. *Telescope*, with Elizabeth McTernan. Ink on paper, plexiglass, magnifying lens. 2013. Exhibited in the art exhibition of 2013 Bridges conference.
6. *Ham sandwich theorem demo attempt*. Video. 2012.
5. *Sizes of infinity*. Math-art salon event organized with Elizabeth McTernan (Berlin, Germany). December 2012.
4. *Imagining negative-dimensional space*, with Elizabeth McTernan. Performance/lecture and ritual performance. Performed at 2012 Bridges conference.
3. *The Spiral Fugue*, with musician Traeden Mathews. Music based on Ph.D. research. On the album *Frequencies of Shake* by Branch. 2011.
2. *The story of my first theorem*. Performance piece. 2010.
1. *Cuculetsu*, with visual artist Shannon Wallace. Video. 2010. Screened at the short film festival at 2012 Bridges conference.

## Non-technical Mathematical Writing

- *Gardens of Infinity*. 2015.  
Created, designed, and wrote content for a high-concept interactive website on Cantor’s set theory, in collaboration with interaction designer and programmer. [gardensofinfinity.com](http://gardensofinfinity.com)
- *Enchiridion: Mathematical User’s Guides*. 2014 – 2016.  
Collaboratively wrote two expository meta-papers about experiential contexts of published research papers. [mathusersguides.com](http://mathusersguides.com).
- *Contemplative Mathematics Pedagogy Wiki*. 2015.  
Contributed pages on pedagogy used in my classrooms, including materials and feedback.
- Popular math essays. 2009 – present.  
Wrote over two dozen short essays revealing contemporary mathematics to a general audience. [forthelukeofmath.com](http://forthelukeofmath.com)
- American Mathematical Society Graduate Student Blog. 2011 – 2012.  
Contributed seven posts. [blogs.ams.org/mathgradblog/author/wolcott/](http://blogs.ams.org/mathgradblog/author/wolcott/)
- *Flavors and Seasons* blog. 2011 – 2013.  
Created and maintained personal blog documenting cognitive and meta-cognitive experience of research mathematics. [flavorsandseasons.wordpress.com](http://flavorsandseasons.wordpress.com)
- *My name is not Susan: a love story between mathematics and non-mathematics*. 2009.  
Collection of essays on the mathematical experience, self-published via Lulu. 142 pp.

## Service and Professional Activity

- **Creator, Contributor, and Lead Editor.** *Enchiridion: Mathematical User’s Guides*. [mathusersguides.com](http://mathusersguides.com). 2014 – present.
- **Faculty mentor.** Lawrence University GLOW (Gay, Lesbian, or Whatever) club. 2016.

- **Contributed Paper Session Co-Organizer.** *Contemplative Pedagogy and Mathematics*. 2016 AMS/MAA Joint Meetings.
- **Creator and Editor.** *Contemplative Mathematics Pedagogy Wiki*. [contemplativemathematicspedagogy.wikispaces.com](http://contemplativemathematicspedagogy.wikispaces.com). 2015 – present.
- **Conference Program Committee member.** Bridges: Mathematics, Music, Art, Architecture, Culture. 2014, 2015, and 2016.
- **Referee.** *Homology, Homotopy, and Applications*; *Journal of Humanistic Mathematics*; *Bridges Conference Proceedings (2014, 2015, and 2016)*.
- **Reviewer.**  
Zentralblatt MATH. 2013 – 2016.  
Mathematical Reviews. 2014 – 2016.
- **Editor, Blog Writer.** AMS Graduate Student Blog. 2011 – 2012.
- **Lead Organizer and Facilitator,** The Mathematical Experience Seminar. University of Washington. Spring 2008 and spring 2010.
- **Lead Organizer,** West Coast Algebraic Topology Summer School. University of Washington. August 26 – 28, 2011.
- **Judge.** Math Circle Olympiad, University of Washington. 2011.
- **Committee member.** VIGRE Undergraduate Mathematical Sciences Seminar Committee. University of Washington. 2009 – 2010.
- **Volunteer.** Exploration in Math’s MathFest (Seattle, WA). 2008 and 2009.
- **Memberships:**
  - Mathematical Association of America
  - American Mathematical Society
  - Association for Contemplative Mind in Higher Education

## Academic Honors

- University of Washington Mathematics Department Teaching Excellence Award. 2011.
- University of Washington VIGRE Fellowship. 2009 – 2010.
- University of Washington Mathematics Department Academic Merit Award. 2006 – 2012.
- University of Washington Graduate School Top Scholar Award. 2006 – 2007.
- Swarthmore College Mathematics REU, with Cheryl Grood. Summer 2001.
- Swarthmore College Morris Monsky Prize in Mathematics, for outstanding promise and enthusiasm. 2000.

## Research Visits

- University of Lisbon (Portugal). 14 – 18 June 2015.
- University of Bielefeld (Germany). 1 April – 14 May 2014.
- Radboud Universiteit Nijmegen (The Netherlands). 3 – 10 May 2014.
- University of Barcelona (Spain). 28 May – 3 June 2013.
- University of Copenhagen (Denmark). 12 – 15 May 2013.
- University of Seville (Spain). 29 April – 3 May 2013.
- University of Bielefeld (Germany). 17 – 20 October 2012.

## Talks

- *Contemplating infinity: mathematics and mindfulness*. USC Center for Excellence in Teaching, Faculty Forum. February 2017.
- *Interactive software for topological data analysis*. 2017 AMS/MAA Joint Meetings (Atlanta, GA). January 2017.
- *The effects of altitude sickness on mathematical cognition*. 2017 AMS/MAA Joint Meetings (Atlanta, GA). January 2017.

- *Contemplative pedagogy and STEM: A mathematics example and open discussion.* National ACMHE Conference. October 2016.
- *An interactive introduction to topological data analysis.* Math Colloquium. Northern Michigan University. April 2016.
- *The user’s guide project: giving experiential context to research papers.* 2016 AMS/MAA Joint Meetings (Seattle, WA). January 2016.
- *Gardens of infinity: Cantor meets the real deep Web.* 2016 AMS/MAA Joint Meetings (Seattle, WA). January 2016.
- *The mathematics of walking in the Himalayas.* Science Hall Colloquium. Lawrence University. October 2015.
- *Bousfield lattice invariants of triangulated symmetric monoidal categories.* AMS/EMS/SPM International Meeting (Porto, Portugal). June 2015.
- *A classification of math-art work.* AMS/EMS/SPM International Meeting (Porto, Portugal). June 2015.
- *Panel discussion on “Math, poetry, and improvisations” collaboration.* Math tea. Lawrence University. February 2015.
- *Conditional convergence in the process of math and art: a case study.* Science Hall Colloquium. Lawrence University. November 2014.
- *Report on the ‘Bodies of Data’ workshops.* MAA MathFest (Portland, OR). August 2014.
- *Telescope conjectures and Bousfield lattices for localized categories of spectra.* Algebraic Topology seminar. Radboud University (The Netherlands). May 2014.
- *A topological localizing subcategory that isn’t a Bousfield class.* BIREP seminar. University of Bielefeld (Germany). April 2014.
- *A gentle introduction to category theory: architecture of the universe or abstract nonsense?* Lawrence University. March 2014.
- *Telescope conjectures and Bousfield lattices for localized categories of spectra.* Satellite Conference on Homotopy Theory at JMM 2014 (Baltimore, MD). January 2014.
- *Bousfield lattices and smashing localizations of local categories.* Young Topologists’ Meeting. EPFL (Lausanne, Switzerland). July 2013.
- *Exquisite failure: The telescope as lived object.* Bridges conference: Mathematics, Music, Art, Architecture, Culture (Enschede, The Netherlands). July 2013.
- *Bousfield lattices, quotients, ring maps, and non-Noetherian rings.*
  - Algebra seminar, Instituto Superior Técnico (Lisbon, Portugal). January 2013.
  - Algebra seminar, University of Seville (Spain). May 2013.
  - Topology seminar, University of Copenhagen (Denmark). May 2013.
  - Homotopy Methods in Algebra, Geometry and Topology conference (Spain). May 2013.
- *The co-evolution of math and mathematicians.* Mathematical Practice seminar. Center for Philosophy of Science of the University of Lisbon (Portugal). February 2013.
- *Different sizes of infinity.* Madam M’s Berlin salon (Germany). December 2012.
- *A non-Noetherian graded mess: some Bousfield lattice products and quotients.* BIREP seminar. University of Bielefeld (Germany). October 2012.
- *Imagining negative-dimensional space.* Bridges conference: Mathematics, Music, Art, Architecture, Culture. Towson University. July 2012.
- *Not every object in the derived category of a ring is Bousfield equivalent to a module.* Algebra seminar, University of Washington. June 2012.
- *A tensor-triangulated approach to derived categories of non-Noetherian rings.* Final Exam, University of Washington. May 2012.
- *It’s not right, but it’s okay: New math-art works.* Current Topics seminar, University of Washington. January 2012.
- *Three stories from the math-art frontier.* 2012 AMS/MAA Joint Meetings (Boston, MA). January 2012.

- *Ring maps, derived categories, and the Bousfield lattice*. 2012 AMS/MAA Joint Meetings (Boston, MA). January 2012.
- *Recent stories from the math-art frontier*. Banff International Research Station (Banff, Canada). Workshop 11w5070: “Mathematics: Muse, Maker, and Measure of the Arts.” December 2011.
- *Ring maps, derived categories, and the Bousfield lattice*. Algebra seminar, University of Washington. October 2011.
- *Set theory questions in homotopy theory*. Advanced Course on Large-cardinal Methods in Homotopy, University of Barcelona (Spain). September 2011.
- *Structure within Bousfield lattices*. West Coast Algebraic Topology Summer School, University of Washington. August 2011.
- *Negative-dimensional space and An introduction to groups*. Hillside Student Community (Bellevue, WA). February 2011.
- *Cohomological Bousfield classes in stable homotopy categories*. General Exam, University of Washington. June 2010.
- *The codependent arising of math and mathematicians, and where do we go from here?* Washington State Community College Math Conference 2010 Annual Meeting, Yakima Valley Community College (Yakima, WA). May 2010.
- *The codependent arising of math and mathematicians*. Pacific Northwest MAA 2010 Annual Meeting, Seattle University. April 2010.
- *A gentle introduction to category theory: architecture of the universe or abstract nonsense?*
  - Undergraduate Mathematical Sciences seminar, University of Washington. January 2010.
  - Undergraduate Math Club, University of Washington. November 2010.
- *An introduction to the category of spectra*. Current Topics seminar, University of Washington. January 2010.
- *Where arithmetic comes from*. The Mathematical Experience seminar, University of Washington. April 2008 and April 2010.

## Conference and Workshop Attendance/Participation

- AMS/MAA Joint Meetings (Atlanta, GA). January 2017. **Speaker** (×2).
- Transforming Higher Education: Fostering Contemplative Inquiry, Community, and Social Action. ACMHE annual conference. (Amherst, MA). October 2016. **Presenter**.
- AMS/MAA Joint Meetings (Seattle, WA). January 2016. **Speaker** (×2).
- AMS/EMS/SPM International Meeting. (Porto, Portugal). June 2015. **Speaker** (×2).
- Midwest Topology Seminar. University of Chicago (Chicago, IL). May 2015.
- International Symposium for Contemplative Studies (Boston, MA). November 2014.
- Midwest Topology Seminar. Northwestern University (Evanston, IL). October 2014.
- Contemplative Practices in Higher Education. Omega Institute (Rhinebeck, NY). August 2014.
- MAA MathFest (Portland, OR). August 2014. **Speaker**.
- AMS/MAA Joint Meetings (Baltimore, MD). January 2014. **Speaker**.
- Bridges: Mathematics, Music, Art, Architecture, Culture. Saxion University (Enschede, The Netherlands). July 2013. **Speaker, Art Critic**.
- Young Topologists’ Meeting. EPFL (Lausanne, Switzerland). July 2013. **Speaker**.
- Homotopy Methods in Algebra, Geometry and Topology. Universitat Politècnica de Catalunya (Barcelona, Spain). May 2013. **Invited speaker**.
- ASPECTS of Topology. Oxford University (England). December 2012.
- The Art and Science of Contemplative Teaching and Learning: Exploring Ways of Knowing. Garrison Institute (Garrison, NY). November 2012.
- Mathematics and Intuition. Center for Philosophy of Science of the University of Lisbon (Portugal). September 2012.
- Mathematical Cultures I. De Morgan House (London, England). September 2012.

- Seattle summer school. “Cohomology and support in representation theory and related topics.” University of Washington. July 2012.
- Bridges: Mathematics, Music, Art, Architecture, Culture. Towson University. July 2012. **Speaker, Filmmaker.**
- Cascade Topology Seminar. University of British Columbia (Vancouver, Canada). April 2012.
- AMS/MAA Joint Meetings (Boston, MA). January 2012. **Speaker** ( $\times 2$ ).
- Banff International Research Station (Banff, Canada). Workshop 11w5070: “Mathematics: Muse, Maker, and Measure of the Arts.” December 2011. **Invited speaker.**
- Advanced Course and Workshop on Large-Cardinal Methods in Homotopy. IMUB, University of Barcelona (Spain). September 2011. **Invited speaker.**
- West Coast Algebraic Topology Summer School. University of Washington. August 26 – 28, 2011. **Lead Organizer, Speaker.**
- Association for Contemplative Mind in Higher Education Regional Meeting (Whidbey Island, WA). July 2011.
- Banff International Research Station (Banff, Canada). Workshop 11w5009: “Triangulated Categories and Applications.” June 2011.
- Cascade Topology Seminar. University of Washington. November 2010.
- Washington State Community College Math Conference (Yakima, WA). June 2010. **Speaker.**
- Pacific Northwest MAA Annual Meeting (Seattle, WA). April 2010. **Speaker.**
- AMS/MAA Joint Meetings (Washington, DC). January 2009.
- Washington State Community College Math Conference (Lake Chelan, WA). May 2008.
- Deviant Art Festival (Trollhättan, Sweden). July 2007. **Mathematical consultant.**

## Miscellaneous

- Programming languages:
  - comfortable with C, Python, R, MATLAB/Octave, LaTeX, Processing
  - conversational in HTML, CSS, R Markdown, Mathematica, Sage
- 66 countries visited; over five years cumulatively spent outside the USA.
- avid rock climber, motorcycle enthusiast, and nature lover.
- Iyengar yoga practitioner since 2000; Buddhist meditation practitioner since 2006.
- walked the entire 2,174-mile Appalachian Trail in 2004.
- multi-faceted musician: trained in Indian tabla, Cuban bata, West African drumming, Balinese gamelan, Japanese taiko, and piano; performance experience in Seattle, Los Angeles, Philadelphia, and New York City (including Carnegie Hall).
- diverse non-mathematical work experience, including: lifeguard, farmer, stone worker, construction worker, Lawrence Berkeley National Laboratory physics intern, election worker, apple picker, sailboat deckhand.