

Catherine Lynn Crockett

MICS Department
Point Loma Nazarene University
San Diego, CA 92106

Phone: 619-849-2723
e-mail: catherinecrockett@pointloma.edu

EDUCATION

- Ph.D. in Mathematics, University of California, Riverside, December 2006
Dissertation Advisor: Xiao-Song Lin
Dissertation Topic: *On the Topology, Combinatorics, and Geometry of Circle and Spherical Orders*
- M.S. in Mathematics with concentration in Applied Math, California State Polytechnic University, Pomona, March 1998
- B.S. in Mathematics with concentration in Applied Math, California State Polytechnic University, Pomona, December 1995

CURRENT POSITION

Professor of Mathematics, Point Loma Nazarene University, Fall 2020 - present

PREVIOUS POSITIONS

- Associate Professor of Mathematics, Point Loma Nazarene University, 2016-2020
- Assistant Professor of Mathematics, Point Loma Nazarene University, 2008-2016
- Adjunct Faculty in mathematics, Riverside City College, Fall 2005 – Fall 2008
- Research Assistant, University of California, Riverside, Summer 2006
- Graduate Teaching Assistant, University of California, Riverside, Fall 2000 - Spring 2004 and Fall 2005 - Winter 2006
- Teaching Associate in Mathematics, University of California, Riverside, Summers 2001- 2003 and 2005
- Instructor in Mathematics, California State Polytechnic University, Pomona, Winter 1996 - Summer 2000
- Lecturer in Mathematics, University of California, Riverside, Fall 1998 - Spring 2000

COURSES TAUGHT AT POINT LOMA NAZARENE UNIVERSITY

- Math 099: Elementary Algebra
- Math 113: Intermediate Algebra
- Math 121: Calculus and Modeling
- Math 123: Elementary Functions
- Math 131: Computer Aided Calculus
- Math 123/133: Pre-Calculus

- Math 144: Calculus with Applications
- Math 153: Business Math
- Math 164: Calculus I
- Math 173: Business Calculus
- Math 174: Calculus II
- Math 203: Introduction to Statistics
- Math 213: Fundamentals of Elementary Mathematics I
- Math 223: Fundamentals of Elementary Mathematics II
- Math 274: Calculus III
- Math 303: Problem Solving
- Math 343: Discrete Mathematics
- Math 382: Mathematical Statistics
- Math 383: Mathematically Probability and Statistics
- Math 392: Mathematical Probability
- Math 402: Topics in Geometry
- Math 413: Complex Analysis
- Math 424: Real Analysis I
- Math 444: Abstract Algebra I
- Math 452: Abstract Algebra II
- Math 453 Advance Statistics
- Math 492: Special Topics in Mathematics
- Math 4013 Service Learning
- Math 481/CSC 481: Senior Seminar in Mathematics/ Computer Science

RESEARCH

Rigorous Peer Reviewed Scholarship:

Publications

(Scholarship of Teaching)

- L. Carter and **C. Crockett**, (2019) “An Ethics Curriculum for Computer Science with Flexibility and Continuity”, Paper published in the 2019 Frontiers in Education Conference refereed proceedings, Cincinnati, OH.
- L. Carter, R. Botts and **C. Crockett**, (2018) “Hybrid courses across the curriculum: what works and what doesn’t”, Paper published in the 2017 ACMS Conference refereed proceeding, Charleston, SC
- L. Carter, R. Botts and **C. Crockett**, (2015) “Using the Blended Learning Approach in a Quantitative Literacy Course”, Primus, Vol. 28: 3, pages 236-265

- L. Carter, R. Botts and **C. Crockett**, (2012) “Computational Science Program: the Background Research”, Paper published in the 2012 Frontiers in Education Conference, refereed proceedings, Seattle, Washington. October 3-6, pp.1091-1096.

(Scholarship of Application)

- L. Carter and **C. Crockett**, (2018) “Preparing K-12 Teachers to Inspire Future Coders: It Doesn’t Have to be Complex”, Paper published in the 2018 Frontiers in Education Conference refereed proceedings, San Jose, CA.

Unpublished Scholarly Outcomes:

(Scholarship of Teaching)

Presentations

- L. Carter and **C. Crockett**, October 2019, “An Ethics Curriculum for Computer Science with Flexibility and Continuity”, 2019 Frontiers in Education Conference, Cincinnati, OH.
- C. Crockett, June 2019, “Mentoring Students with Extra Challenges”, Panel Discussion, Conference of the ACMS at Indiana Wesleyan University, Marion, IN.
- L. Carter and **C. Crockett**, June 2019, “Ethics in Computer and Data Sciences”, Conference of the ACMS at Indiana Wesleyan University, Marion, IN.
- L. Carter and **C. Crockett**, August 2017, “Preparing Teachers to Inspire Future Coders”, Faculty Scholarship Day at Point Loma Nazarene University, San Diego, CA.
- C. Crockett, June 2017, “Hybrid Courses Across the Curriculum: What works and what doesn’t”, Conference of the ACMS at Charleston Southern University in Charleston, SC
- C. Crockett, August 2016, “Researching and Implementing Best Practices in Quantitative Literacy”, Faculty Scholarship Day at Point Loma Nazarene University, San Diego, CA
- C. Crockett, August 2016, “Quantitative Literacy at Post-Secondary Level: Future Directions in Research”, Invited Panel Member, MAA MathFest at Columbus, Ohio.
- C. Crockett, May 2015, “Quantitative Literacy- What is it and what can we do with it?” Conference of the ACMS at Hamilton, Ontario, Canada.
- C. Crockett, May 2015, “Hybrid Classes in Mathematics and Computer Science”, Panel Discussion, Conference of the ACMS at Hamilton, Ontario, Canada.

- C. Crockett, January 2015, “The impact of a hybrid course format on student learning and attitudes in a Quantitative Literacy Course.”, Joint Mathematics Meeting in San Antonio, TX
- C. Crockett, May 2013, “A Different Approach”, Conference of the ACMS at Bethel University, St. Paul, MN.

Publications

- L. Carter and C. Crockett, July 2021, “Integrated Ethics Labs”, website published. <https://integratedethicslabs.org/>
- C. Crockett, “A Different Approach”, paper published in 2013 ACMS conference proceedings at Bethel University, St. Paul, MN.

(Scholarship of Application)

Presentations

- C. Crockett, October 2018, “Preparing K-12 Teachers to Inspire Future Coders: It Doesn’t Have to be Complex”, 2018 Frontiers in Education Conference refereed proceedings, San Jose, CA.

(Scholarship of Discovery)

Presentations

- C. Crockett, May 2009, “Unwind with Knots”, Conference of the ACMS at Wheaton College, Wheaton, IL. Presentation
- C. Crockett, April 2006, “Loop Braid Category”, AMS Sectional Meeting, Special Session on Quantum Invariants, University of New Hampshire.
- C. Crockett, October 2005, “Braids and Loop Braids”, Graduate Student Seminar, University of California, Riverside
- C. Crockett, April 2003, “Torus Knots”, Topology Seminar, University of California, Riverside

Publications

- C. Crockett (2010) “Unwind with Knots”, Paper published in ACMS conference proceedings at Wheaton College, Wheaton, IL May 27-30, pp. 50-60.

(Scholarship of Integration)

Presentations

- C. Crockett, April 2012, “Interdisciplinary work with Computers and Knot Theory”, CWIC SO-Cal Conference in Irvine, CA.

CONFERENCES and MINICOURSES ATTENDED:

- Joint Mathematics Meetings, every January starting from 2007- current
- Frontiers in Education Conference, October 2018 and 2109
- Tapia Conference, September 2019
- Mini-course: “Visualizing Projective Geometry Through Photographs and Perspective Drawings”, Mathfest 2018, Denver CO.
- Inquiry-Based Learning Forum, “19th Annual Legacy of R. L. Moore Conference”, August 2, 2016 at the Math Fest conference in Columbus, OH.
- Celebration of Women in Computing (CWIC) in Southern California, April 2012
- Math fest, August 2012, 2016 and 2018.
- MAA Southern California-Nevada Section Spring Meeting, 2016, 2014, 2013, 2011, 2010
- 2011 National Academies Summer Institute on Undergraduate Education in Biology
- 2010 PKAL/Kreck National Colloquium on Leadership in Interdisciplinary STEM Learning, October 2010
- Association of Christians in Mathematical Sciences, Biennial Meeting, May 2019, 2017 2015, 2013, 2011 and 2009
- AMS Sectional Meeting, Special Session on Quantum Invariants, University of New Hampshire, April 2006
- MSRI Summer Graduate Program: "Knot Theory", University of British Columbia, Summer 2004

SERVICE

Supervised undergraduate Research Students:

- Whitney Featherson, May 2019- June 2019, Topics: Incorporating ethics into data science core courses at PLNU.
- Moyra Dyer, May 2018- May 2109, Title of Honors project “*Torus Knots*”.
- Joy Chen, May 2012-May 2013, Title of Honors project “*On the Alexander Polynomial and Related Invariants*”.
- Amy Hinds, May 2012- July 2012, Topic: Finding the connection between the degrees of Alexander polynomials and unknotting numbers.
- Wileen Chiu, May 2011 – August 2011, Topic: Researching the ingredients necessary to make a strong computational science program.
- Antony Wright, May 2010-August 2010, Topic: Using a computer to search for patterns in Brunnian links and braid words

- Kristen LoPresti, May 2009- May 2010, Title of Honors project “*Searching for Patterns in Brunnian links*”.

Workshops/ Panels Given:

- L. Carter, C. Crockett, S. De Ruiter, June 2022, “Integrating Ethics into Your Courses”, at ACMS Conference at Azusa Pacific University, Azusa, CA.
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- L. Carter and C. Crockett, June 2021, “Ethics in Computer and Data Science Workshop”, at Calvin University, Grand Rapids, MI
- L. Carter and C. Crockett, September 2019, “Workshop: Preparing Tomorrow’s Ethical Decision-Makers in Computer and Data Sciences”, at Tapia Conference, San Diego, CA.
- C. Crockett, G. Karaali, A. Miller and V. Piercy, August 2018, “Town Hall Meeting: Quantitative Literacy Swap Session”, at Mathfest, Denver, CO.
- L. Carter and C. Crockett, July 2017, “Workshop: Preparing Teachers to Inspire Future Coders”, at Point Loma Nazarene University, San Diego, CA.

Paper Sessions Organized:

- C. Crockett, L. Tunstall, M. Branson, G. Karaali and V. Piercey, Contributed Paper Session on “*Insights into Quantitative Literacy and Reasoning from the COVID- 19 Pandemic*”, at MathFest August 2021, virtual.
- C. Crockett, M. Branson, J. Douma, G. Karaali, V. Piercey and L. Tunstall, MAA Contributed Paper Session on “*Quantitative Literacy and Socail Justice: AN Ongoing Dialogue*”, at JMM 2020, virtual.
- C. Crockett, K. Hubbard and J. Nordstorm, MAA Contributed Paper session on “*Innovative Pathways to Quantitative Literacy*” at the Joint Mathematics Meeting held January 2019 in Baltimore, MD
- C. Crockett, A. Miller and V. Piercy, MAA Contributed Paper session on “*Quantitative Literacy Across the Curriculum*” at the Joint Mathematics Meeting held January 2018 in in San Diego, CA.
- C. Crockett, G. Franchy and A. Miller, MAA Invited Paper Session on “*New Directions in Quantitative Literacy for General Education, in Honor of Lynn Steen*” at the Joint Mathematics Meeting held January 2017 in Atlanta, GA.

Miscellaneous

- Serving as the Secretary/treasurer of SIGMMA QL from 2016 to current.
- Referee for the journal *Primus*
- Judge for Undergraduate Posters at JMM and Mathfest
- Writer for the annual SIGMAA QL newsletter (2018-2019)
- Conference reviewer for Frontiers in Education Conference (FIE) 2018 and 2019

PROFESSIONAL AFFILIATIONS

- American Mathematical Society
- Mathematical Association of America
- Association of Christians in Mathematical Sciences
- National Numeracy Network
- SIGMAA QL: Special Interest Group of the Mathematical Association of America, Quantitative Literacy
- American Society for Engineering Education

AWARDS and HONORS:

- National Academies Education Fellow in the Life Sciences 2011-2012

GRANTS:

- L. Carter and C. Crockett, SIGCSE Special Projects, for the project: “Developing Ethics Modules for Core CS and DS Courses”, May 2019
- L. Carter and C. Crockett, PLNU Alumni Faculty Grant, for the project: “Preparing Teachers to Inspire Future Coders”, April, 2017