

# Maria Zack

Department of Mathematical, Information and Computer Sciences

Department of Physics and Engineering

Point Loma Nazarene University

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## EDUCATION

*University of California, San Diego, San Diego, CA*

**Ph.D. in Mathematics**

**1989**

Dissertation: "Convergence to Uniform on the Finite Heisenberg Group and Applications to Random Number Generators"

*University of California at San Diego, San Diego, CA*

**B.A. in Mathematics**

**1984**

## GRANTS AND AWARDS

- Subawardee on "NSF INCLUDES Alliance: The Alliance of Students with Disabilities for Inclusion, Networking, and Transition Opportunities in STEM (TAPDINTO-STEM)," (\$108,000), 2022-2026 **2022-2026**
- NetVUE Vocation Across the Academy (\$60,000) **2019-2022**
- Council of Independent Colleges, NetVUE Professional Development Grant (\$10,000) **2016-2017**
- National Science Foundation SSTEM Grant (\$576,000) **2016-2020**
- Council of Independent Colleges, NetVUE Grant (\$50,000) **2014-2015**
- Education Associates Lighthouse Award **2013**
- Wesleyan Center Research Grant **2006-2007**
- Grant to participate in SAUM (Supporting Assessment in Undergraduate Mathematics) sponsored by the NSF/MAA **2003-2004**

## TEACHING EXPERIENCE

*Point Loma Nazarene University, San Diego, CA*

**Professor and Chair** – Department of Mathematical, Information and Computer Science and Department of Physics and Engineering

**2016-present**

*Point Loma Nazarene University, San Diego, CA*

**Professor and Chair** – Mathematical, Information and Computer Sciences

**2002-2016**

*Point Loma Nazarene University, San Diego, CA*

**Professor** – Mathematics

**2000-2002**

*Point Loma Nazarene University, San Diego, CA*

**Associate Professor** – Mathematics

**1996-2000**

*Point Loma Nazarene University, San Diego, CA*

**Assistant Professor** – Mathematics

**1994-1996**

*Texas Tech University, Lubbock, TX*

**Assistant Professor** – Mathematics

**1989-1990**

## RELATED EXPERIENCE

*Institute for Defense Analysis Center for Communications Research, La Jolla, CA*

**Part-Time Research Staff Member**

**1995-2007**

*Institute for Defense Analysis Center for Communications Research, La Jolla, CA*

**Research Staff Member**

**1991-1995**

IDA is an interdisciplinary research facility that works on classified projects that involve techniques from mathematics computer science and engineering.

## PAPERS OR TALKS

M. Zack, November 2023, "Blaise Pascal and the Roulette, a Detailed History," Pohle Colloquium Lecture, Adelphi University, Garden City, NY

M. Zack and L. Whitaker, October 2023, "Leveraging Workday Prism Analytics for Student Success and Student At-Risk Engagement," Workday Rising, San Francisco, CA.

M. Zack, May 2023, "Blaise Pascal and the Roulette," Canadian Society for History and Philosophy of Mathematics Conference, Toronto, Canada

M. Zack, March 2023, "What Can the Lisbon Earthquake Tell Us About the Connections Between Mathematics, urban Planning, and Engineering in Eighteenth Century Portugal?," Mathematics Seminar, American University in Cairo, Cairo, Egypt.

M. Zack, January 2023, "Amos Dettonville, Blaise Pascal, and a Cycloidal Challenge," Joint Mathematics Meetings, Boston, MA.

M. Zack, October 2022, "Mathematics, Architecture, and Engineering in Surprising Locations," Mathematics Seminar, Middlesex University, London, England

M. Zack, July 2022, "Torricelli's Computation of the Area Under the Cycloid," 12<sup>th</sup> SIS- Symmetry Conference, Porto, Portugal

M. Zack, January 2022, "Barbaro and Vitruvius: A Mathematician's Translation of an Architectural Text," Joint Mathematics Meetings, Online

M. Zack, July 2021, "Early Computations on the Cycloid," British Society for the History of Mathematics, Online.

M. Zack, March 2021, "Mathematical and Scientific Roots in the Architecture of Christopher Wren and Robert Hooke," Seminar at Trinity Western University, Canada

M. Zack, February 2021, "A Very Popular Curve: The Cycloid," Philadelphia Area Society for the History of Mathematics, Online

M. Zack, January 2021, "Early Computations on the Cycloid – Some Interesting Puzzles," Joint Mathematics Meetings, Online

M. Zack, January 2020, "Quadrature, Rectification and the Cycloid," Joint Mathematics Meetings, Denver, CO

M. Zack, January 2020, "SSTEM: Using Computational Science to Enhance Learning and Commitment to STEM," Joint Mathematics Meetings, Denver, CO.

M. Zack, June 2019, "Mathematics in Daniele Barbaro's Vitruvius of 1567," Canadian Society for History and Philosophy of Mathematics Conference, Vancouver, Canada

M. Zack, May 2019, "Pre-Conference Workshop on Career Planning for Early Career Faculty," Meeting of the Association of Christians in the Mathematical Sciences, Marion, IN

M. Zack and G. Crow, May 2019, "Practical Examples of Bin Packing and Critical Path Scheduling," Meeting of the Association of Christians in the Mathematical Sciences, Marion, IN

M. Zack and K. Fulcher, March 2019, "Infusing Institutional Commitments to Vocation via Print and Online Resources," NetVUE Conference, Louisville, KY

M. Zack, August 2018, "Through the Looking Glass: Dodgson and Determinants," Mathematical Association of America MathFest, Denver, CO

M. Zack, June 2018, "The Cycloid: Everyone's Favorite Curve," Canadian Society for History and Philosophy of Mathematics Conference, Montreal, Canada

M. Zack, April 2018, "Christopher Wren, John Wallis and the Cycloid," American Mathematical Society Meeting, Boston, MA

M. Zack, T. Dean, B. Norquist, K. Pool, February 2018, "Faith-Informed Approaches to Vocation: Four Institutional Strategies," CCCU International Forum, Dallas, TX

M. Zack, January 2018, "Where Did They Learn That? Mathematical Knowledge in 18th Century Portugal," Joint Mathematics Meetings, San Diego, CA

M. Zack, January 2018, "SSTEM: Using Computational Science to Enhance Learning and Commitment to STEM," Joint Mathematics Meetings, San Diego, CA

M. Zack, June 2017, "Portuguese Mathematical History," Meeting of the Association of Christians in the Mathematical Sciences, Charleston, SC

M. Zack, May 2017, "Manuscript Transmission of Mathematical Knowledge in 18th Century Portugal," Canadian Society for History and Philosophy of Mathematics Conference, Toronto, Canada

M. Zack and K. Lee, April 2017, "Assessing Core Competencies at Point Loma Nazarene University," WSCUC ARC, San Diego, CA

M. Zack, March 2017, "Learning from Eachother: PLNU's Work to Foster Vocational Discernment in Students," CIC NetVUE Conference, Charlotte, NC

M. Zack, January 2017, "SSTEM: Using Computational Science to Enhance Learning and Commitment to STEM," NSF Poster Session, Joint Mathematics Meetings, Atlanta, GA

M. Zack, October 2016, "18<sup>th</sup> Century Portuguese Engineering: Helping a Student to Develop Research Skills," HPM-Americas Meeting, San Diego, CA

M. Zack, P. Hutchings and L. Murti, April 2016, "Designing Coherent Pathways through the Curriculum: Lessons from NILOA's Assignment Library Initiative," WSCUC ARC, Garden Grove, CA

M. Zack, January 2016, "Some Aspects of the History of the Cycloid," Joint Mathematics Meetings, Seattle, WA

M. Zack, August 2015, "Lisbon: Mathematics, Engineering and Planning in the Eighteenth Century," MathFest 2015, Washington, DC.

M. Zack, June 2015, "Lisbon, London and the Mathematics of Materials," Meeting of American and European Mathematical Societies, Porto, Portugal

M. Zack, May 2015, "Pre-Conference Workshop, Research and Scholarship Planning," Meeting of the Association of Christians in the Mathematical Sciences, Hamilton, Ontario.

M. Zack, R. Botts, L. Carter, C. Crockett, G. Crow and J. Jimenez, May 2015, "Hybrid Classes in Mathematics and Computer Science," Meeting of the Association of Christians in the Mathematical Sciences, Hamilton, Ontario.

M. Zack and K. Fulcher, April 2015, "A Realistic and Effective Approach to Academic and Administrative Prioritization," WSCUC ARC, Oakland, CA

M. Zack and M. Bailey, April 2015, "Meaning, Quality, and Integrity of the Degree: DQP as an Organizing Framework," WSCUC ARC, Oakland, CA

M. Zack, April 2015, "What can the Lisbon Earthquake Tell Us about the Connections between Mathematics, Urban Planning and Engineering in Eighteenth Century Portugal?," Pohle Colloquium Lecture, New York, NY

M. Zack, K. Fulcher, M. Butterfield, March 2015, "Making a Sum that is More than Its Parts: Vocation Interwoven Throughout the College Experience," CIC NetVUE Conference, St. Louis, MO.

M. Zack, August 2014, "Effective Undergraduate Research Using Questions Derived from Institutional Research and Computational Science," MathFest 2014, Portland, OR.

M. Zack, June 2014, "Rebuilding Mathematically: A Study of the Rebuilding of London and Lisbon," Nexus 2014: Relationships Between Architecture and Mathematics, Ankara, Turkey. Portugal.

M. Zack, May 2014, "Rebuilding Mathematically: London and Lisbon – What Mathematics Did the Engineers Know?" Annual Meeting of the Canadian Society for History and Philosophy of Mathematics, St. Catherine's, ON.

M. Zack and G. Crow, April 2014, "PLNU: Revising the Faculty Evaluation System," WASC ARC, Los Angeles, CA.

M. Zack, January 2014, "John Wallis' Computations on the Cycloid," Joint Mathematics Meetings, Baltimore, MD.

M. Zack, August 2013, "The Geometric Algebra of John Wallis," Joint Meeting of CSHPM and MathFest, Hartford, CT.

G. Crow and M. Zack, May 2013, "Delaware, Dickeson, Assessment and How You Can Help," Conference of the ACMS at Bethel, Minneapolis, MN.

M. Zack, May 2013, "Panel on Scholarly Work in a High-Teaching University," Conference of the ACMS at Bethel, Minneapolis, MN.

M. Zack and M. Bailey, April 2013, "Transparency: NILOA Assessment Wheel Energizes Community Engagement in Continuous Improvement," WASC ARC, San Diego, CA.

M. Zack, May 2012, "Through the Looking Glass: Dodgson's View of Determinants," CSHPM Conference, Waterloo, ON.

M. Zack, April 2012, "My Experience with Creating a Classroom Project Using Original Historical Sources," Workshop on Authorship of Student Projects Based on Primary Historical Sources, Las Cruces, NM

M. Zack, June 2011, "Using Original Historical Mathematics Texts in the Classroom," Conference of the ACMS at Westmont College, Santa Barbara, CA.

M. Zack, June 2011, "Divide and Conquer or Merge and Maximize?," Conference of the ACMS at Westmont College, Santa Barbara, CA.

K. Fulcher, M. Paul and M. Zack, March 2011, "The Role of Local and Global Service in the Discernment of Vocation," CIC NetVUE Conference on Vocation in Undergraduate Education, Indianapolis, IN.

M. Zack, January 2011, "Mathematics as Architecture: The Built Geometry of Christopher Wren and Robert Hooke," ACMS Banquet Lecture, Joint Mathematics Meetings, New Orleans, LA.

M. Zack, October 2010, "A Layman's Experience with Using Original Texts in the Classroom," International Group on the History and Pedagogy of Mathematics Americas Section, Pasadena, CA.

M. Zack, June 2010, "The Catenary in England," Nexus 2010: Relationships Between Architecture and Mathematics, Porto, Portugal.

M. Zack, March 2010, "Women in Leadership in a Church-Affiliated University," Oxford Roundtable at Lincoln College, Oxford, UK.

G. Crow and M. Zack, January 2010, "Undergraduate Research and Service Learning Projects Developed from Institutional Research Questions," Joint Mathematics Meeting, San Francisco, CA.

M. Zack, June 2009, "Robert Hooke and *An Attempt to Prove the Motion of the Earth from Observation*," Joint Conference of the Canadian Mathematical Society and the Canadian Society of the Philosophy and History of Mathematics, St. Johns, Canada.

M. Zack, May 2009, "Discussing Vocation as Part of a Senior Capstone Class," Conference of the ACMS at Wheaton College, Wheaton, IL.

- M. Zack, June 2008, "Robert Hooke's Fire Monument, Architecture as a Scientific Instrument" Nexus 2008: Relationships Between Architecture and Mathematics, San Diego, CA.
- M. Zack, April 2008, "Creating a Culture of Evidence: Gathering Data and Making Meaning", Western Association of Schools and Colleges Academic Resource Conference, San Diego, CA.
- G. Crow and M. Zack, May 2007, "Vocation," Conference of the ACMS at Messiah College, Grantham, PA.
- M. Zack, June 2006, "Are There Connections Between the Mathematical Thought and Architecture of Sir Christopher Wren?," Nexus 2006: Relationships Between Architecture and Mathematics, Genoa, Italy.
- M. Zack, June 2005, "Integrating the Teaching the History of Mathematics Using Architecture and Art," Conference of the ACMS at Huntington University, Huntington, IN.
- J. Jimenez and M. Zack, January 2004, "Assessment of Student Learning in Undergraduate Mathematics: Work In Progress," Joint Mathematics Meetings, Phoenix, AZ.
- M. Zack, May 2003, "Staying Alive in a Teaching University," Conference of the ACMS at PLNU, San Diego, CA.
- M. Zack, August 2002, "Mathematics and Architecture," The Conference Honoring Audrey Terras, San Diego, CA.
- M. Zack, January 2002, "Using Architecture to Teach the History of Mathematics," Joint Mathematics Meeting, San Diego, CA.
- M. Zack, May 2001, "Mathematics Study Abroad Trips," Conference of the ACMS at Calvin College, Grand Rapids, MI.
- M. Zack, May 1999, "A Review of 'the Man Who Loved Only Numbers'", Conference of the ACMS at Gordon College, Waltham, MA.
- M. Zack, November 1998, "An Introduction to Cryptography," Sonia Kovalesky Mathematics Day, San Diego, CA.
- M. Zack, November 1996, "Excel, Labs and Projects in an Introductory Statistics Course," Ninth Annual Conference on Technology in Collegiate Mathematics, Reno, NV.
- M. Zack, January 1994, "Convergence to Uniform on the Finite Heisenberg Group," American Mathematical Society Meeting, Cincinnati, OH.
- M. Zack, January 1990, "Representations of the Affine Group and Random Number Generators," 4<sup>th</sup> Annual Workshop on Automorphic Forms and Related Topics, Hanover, NH.
- M. Zack, July 1989, "Measuring Randomness and Evaluating Random Number Generators Using the Finite Heisenberg Group," Janos Bolyai Mathematics Society's 3<sup>rd</sup> Annual Colloquium on Limit Theorems, Pecs, Hungary.
- M. Zack, March 1989, "Random Number Generators," NSF-CBMS Regional Conference on Discrete Groups, Expanding Graphs and Invariant Measures, Norman, OK.
- M. Zack, January 1989, "Convergence to Uniform on the Finite Heisenberg Group," American Mathematical Society Meeting, Phoenix, AZ.

## PUBLICATIONS

- M. Zack and D. Waszek, eds, 2024, *Research in History and Philosophy of Mathematics: The Annals of the CSHPM 2022*, Birkhauser, Basel.
- M. Zack and D. Waszek, eds, 2023, *Research in History and Philosophy of Mathematics: The Annals of the CSHPM 2021*, Birkhauser, Basel.
- M. Zack, 2022, "Torricelli's Computation of the Area Under the Cycloid," *Symmetry: Art and Science* (2022), 1-4: 234-241. International Society for the Interdisciplinary Study of Symmetry. <https://doi.org/10.24840/1447-607X/2022/12-29-234>
- M. Zack and D. Schlimm, eds, 2022, *Research in History and Philosophy of Mathematics: The Annals of the CSHPM 2019-2020*, Birkhauser, Basel.
- M. Zack and D. Schlimm, eds, 2020, *Research in History and Philosophy of Mathematics: The CSHPM 2018 Volume*, Birkhauser, Basel.
- M. Zack and D. Schlimm, eds, 2018, *Research in History and Philosophy of Mathematics: The CSHPM 2017 Annual Meeting in Toronto, Ontario*, Birkhauser, Basel.

- M. Zack and D. Schlimm, eds, 2018, *Research in History and Philosophy of Mathematics: The CSHPM 2016 Annual Meeting in Calgary, Alberta*, Birkhauser, Basel.
- M. Zack and E Landry, eds, 2016, *Research in History and Philosophy of Mathematics: The CSHPM 2015 Annual Meeting in Washington, DC*, Birkhauser, Basel.
- M. Zack and E Landry, eds, 2015, *Research in History and Philosophy of Mathematics: The CSHPM 2014 Annual Meeting in St. Catharines, Ontario*, Birkhauser, Basel.
- M. Zack, 2015, "Rebuilding Mathematically: London and Lisbon," *Nexus Network Journal* (2015) 17: 571, Basel, Birkhauser.
- M. Zack, 2014, "Assessing Written Communication, Information Literacy and Oral Communication in a Senior Mathematics and Computer Science Capstone," NILOA DQP Assignment Library, <http://www.assignmentlibrary.org/>.
- M Zack, 2014, "Pombaline Construction: The Enlightenment and the Mathematics of Materials in Lisbon," *Mathematical Intelligencer*, Volume 36 Number 4, Springer Verlag, New York.
- M. Zack, 2014, "Robert Hook's Fire Monument, Architecture as a Scientific Instrument," *Architecture and Mathematics from Antiquity to the Future*, Birkhauser, Basel.
- M. Zack, 2014, "Are There Connections Between the Mathematical Thought and Architecture of Sir Christopher Wren?" *Architecture and Mathematics from Antiquity to the Future*, p171-180, Birkhauser. Basel.
- G. Crow and M. Zack, 2013, "Service Learning Projects Developed from Institutional Research Questions," *PRIMUS Problems, Resources, and Issues in Mathematics Undergraduate Studies*, New York, Taylor and Francis.
- J. Barnett, G. Bezhanishvili, H. Leung, J. Lodder, D. Pengelley, I. Pivkina, D. Ranjan, and M. Zack, 2013, "Primary Historical Sources in the Classroom: Discrete Mathematics and Computer Science," *Loci: Convergence* (July 2013), Mathematical Association of America, DOI:10.4169/loci003984.
- M. Zack, 2013, "Computing the Determinant Through the Looking Glass," *Loci: Convergence* (July 2013), Mathematical Association of America. DOI:10.4169/loci003992.
- M. Zack and M. Ford, 2011, "Huygens' Five Problems and the History of Probability," *The Proceedings of the Canadian Society of the Philosophy and History of Mathematics*, Vancouver, CA, CSHPM.
- M Zack, 2011, "The Geometry of Christopher Wren and Robert Hooke, a Walking Tour of London," *Mathematical Intelligencer*, Volume 33 Number 1, Springer Verlag, New York.
- M. Zack, 2010, "Robert Hooke and *An Attempt to Prove the Motion of the Earth from Observation*," *The Proceedings of the Canadian Society of the Philosophy and History of Mathematics*, New York, CSHPM.
- M. Zack, 2010, "Discussing Vocation as Part of a Senior Capstone Class," *The Journal of the Association of Christians in the Mathematical Sciences*, <http://www.acmsonline.org/journal.htm>, Wheaton, Association of Christians in the Mathematical Sciences.
- G. Crow and M. Zack, 2008, "Vocation," *The Journal of the Association of Christians in the Mathematical Sciences*, <http://www.acmsonline.org/journal.htm>, Wheaton, Association of Christians in the Mathematical Sciences.
- M. Zack, 2008, "Robert Hook's Fire Monument, Architecture as a Scientific Instrument," *Nexus VII: Architecture and Mathematics*, Turin, Kim Williams Books.
- M. Zack, 2006, "Are There Connections Between the Mathematical Thought and Architecture of Sir Christopher Wren?," *Nexus VI: Architecture and Mathematics*, p171-180, Turin, Kim Williams Books.
- J. Jimenez and M. Zack, 2006, "Keeping Assessment Simple," *Supporting Assessment In Undergraduate Mathematics*, p 163-170, Washington, DC, Mathematical Association of America.
- J. Jimenez and M. Zack, 2006, "General Education Mathematics: A Problem Solving Approach," *Current Practices in Quantitative Literacy*, p 119-123, Washington, DC, Mathematical Association of America.
- M. Zack, 2006, "Teaching the History of Mathematics Using Architecture and Art," *The Journal of the Association of Christians in the Mathematical Sciences*, <http://www.acmsonline.org/journal.htm>, Wheaton, Association of Christians in the Mathematical Sciences.
- G. Crow and M. Zack, Editors, 2003, *Proceedings of the Fourteenth Conference of the Association of Christians in the Mathematical Sciences*, Wheaton, Association of Christians in the Mathematical Sciences.
- M. Zack, 2002, "How I came to Love the History of Math," *Bulletin of the Canadian Society for the History and Philosophy of Mathematics*, p. 13, Toronto, Canadian Society for the History and Philosophy of Mathematics.

M. Zack, 2001, "Mathematics Study Abroad Trips," Proceeding of the Thirteenth ACMS Conference on Mathematics from a Christian Perspective, p. 91-96, Wheaton, Association of Christians in the Mathematical Sciences.

M. Zack, 1999, "A Review of 'The Man Who Loved Only Numbers,'" Proceedings of the Meeting of the Association of Christians in the Mathematical Sciences, Wheaton, Association of Christians in the Mathematical Sciences.

M. Zack, 1989, "Measuring Randomness and Evaluation Random Number Generators Using the Finite Heisenberg Group," Colloquia Mathematica Societatis Janos Bolyai, North Holland Publishing.

My consulting work for the Institute for Defense Analyses Center for Communications Research has been one of my key research outlets. The work I did for IDA is classified so I cannot describe it or list publications (from 1991-2007).

#### MEMBERSHIPS

- American Mathematical Society
- Mathematical Association of America
- British Society of the History of Mathematics
- Canadian Society for History and Philosophy of Mathematics
- History of Mathematics Special Interest Group of the Mathematical Association of America
- Association of Christians in Mathematical Sciences
- Association of Women in Mathematics
- Society for Information Management

#### CONFERENCES ORGANIZED

- San Diego Alliance Cyber Security Tour, San Diego, CA, October 2019
- San Diego Alliance Cyber Security Tour, San Diego, CA, November 2016
- HPM-Americas, San Diego, CA, October 2016
- Meeting of the BSHM, CSHPM, HOMSIGMAA, POMSIGMAA jointly with the MathFest Centennial, Washington, DC August 2015.
- Annual Meeting of the CSHPM held jointly with MathFest, Hartford, CT, August 2013.
- HPM-Americas, San Diego, CA, October 2012
- Annual Meeting of the CSHPM, Waterloo, ON, Canada, May 2012.
- Girls Day Out: High School Outreach with SPAWAR, March 2012
- Nexus VII: International Conference on Mathematics and Architecture, San Diego, CA, June 2008.
- Consortium for Computing Sciences in Colleges, Inaugural Southwestern Regional Conference, Los Angeles, CA, April 2008.
- Second Annual Undergraduate Computer Science and Information Sciences Conference, San Diego, CA, April 2006.
- Undergraduate Computer Science and Information Sciences Conference, San Diego, CA, April 2005.
- Association of Christians in the Mathematical Sciences, San Diego, CA, May 2003.
- Institute for Defense Analyses, La Jolla, CA, August 2002.
- Conference Honoring Audrey Terras, La Jolla, CA, August 2002.
- Medical Benevolence Foundation Conference on Medical Missions, Solana Beach, CA, April 2001.

#### UNDERGRADUATE RESEARCH PROJECTS SUPERVISED

- Natalee Chavez, "The History of the Cycloid Curve," 2019-20
- Elizabeth Kenyon, "The Relationship Between Mathematics and Military Education Based on the Eighteenth-Century French Text, Nouveau Cours De Mathématiques, À L'Usage, Bernard Forest de Bélidor," 2016-17
- Hayley Richardson, "Spiritual Formation in Student Athletes," 2016-17
- Kathleen Wilson, "An Analysis on Point Loma Students," 2015-16
- Amy Hinds, "A Statistical Analysis on Chapel Attendance," PLNU 2013-14
- Catherine Quimby, "John Wallis and Quadratures," PLNU 2012-13
- Olivia Heunis, "The History and Mathematics of Perspective Devices," PLNU 2012-13
- Kassandra Ham, "An Analysis of the Effects of PLNU's Enrollment Cap on Student Values," PLNU 2012-13
- Chanell Anderson and Lauren Waggoner, "An Analysis of Trends in Chapel Attendance Patterns," PLNU 2011-12

- Megan Ford, "History of the Development of Probability," PLNU 2010-11
- Emily Haberstroh, "Piano Sight-Reading: A Musical Topic from a Computer Science Perspective ," PLNU 2010-11
- Natasha Jundt, "Generating a Model for Predicting the Academic Success of Incoming Freshmen", PLNU 2009-10
- Marilee Rickett, "An Analysis of Chapel Attendance", PLNU 2009-10
- David Vandebroek, "Reaction Kinetics Involving Chlorosulfony Isocyanate and Some Monoflouralkenes and the History of the Relevant Differential Equations", PLNU 2009-10
- Sarah Lauff, "Institutional Research: Freshmen Retention and Cafeteria Patterns", PLNU 2008-09
- Alana Nichol, "Student Entry, Exit and Reentry Points at PLNU", PLNU 2008-09
- Rachel Shibley, "Indicators of Persistence to Graduation", PLNU 2008-09
- Stefanie Mooney, "Teach, Shape and Send: a Statistical Analysis of Student Data to Assess PLNU Core Values", PLNU 2007-08
- Lauren Nelson, "Analysis of Disease in Sub-Saharan Africa", PLNU 2007-08
- Kaitlin Wilcox, "Calculus Then and Now", PLNU 2007-08
- Brandon Edgebert, "Predicting the Educational Needs of Pastors for the Center for Pastoral Leadership", PLNU, 2006-07.
- Tyler Gray, "Quantitative Analysis of Alumni Survey Data", PLNU, 2006-07.
- Heather Lausch, "Merging Faith and Mathematics: Quantitative Analysis in Aid of PLNU Institutional Research", PLNU, 2006-07.
- Amy Swen, "Analysis of Survey Data on Student Spiritual Disciplines", PLNU, 2006-07.
- Rebecca Price, "Some Applications of Number Theory to Games and Puzzles", PLNU, 2005-06.
- Christine Todd, "The Four Color Theorem", PLNU, 2004-05.
- Sarah Richardson, "Data Mining Using Weka", PLNU, 2004-05.
- Jedidiah Butler, "The Calculus of Newton", PLNU, 2004-05.
- Sarah Littler, "A Mathematical Perspective on Art", PLNU, 2003-04.
- Catherine Pfeiffer, "How Do Graphs Sound?", PLNU, 2001-02.
- Keith Hubbard, "An Investigation of Random Number Generation", PLNU, 1999-2000.

## PLNU COMMUNITY SERVICE

### University at Large:

- Workday Implementation, Co-Project Manager, (2014-present)
- Special Assistant to the President for Planning (2006 – present)
- Co-Chair of the Strategic Planning Committee (2006- present)
- WASC Steering Committee (2015-2017)
  - Serving on three essay teams
  - Writing the main report
  - Coordinating data gathering efforts
- Certified in Blended Learning Teaching, Sloan-C, 2013
- Strategic Enrollment Planning Committee (2012-present)
- PLNU Degree Qualification Profile (DQP) Task Team (2012-2014)
  - Participated in the PLNU DQP Pilot Program (2012-2014)
  - WASC Meaning, Quality and Integrity of Degree Workshop (2013)
  - CIC DQP Consortium Meeting (2012)
  - WASC DQP Workshop (2013)
  - NILOA Charette Conference (2014)
- Prioritization Process Coordinator (2012-2014)
- WSCUC
  - WSCUC Interim Letter (2023)
    - Writer
  - WSCUC Report (2016-2017)
    - Process Coordinator



- Co-author
- Interim Report (2011-2012)
  - Co-author
  - Data analysis and synthesis
- WASC CPR and EER (2004-2007)
  - Wrote CPR Data Report and Strategic Planning Report
  - Built and maintained University Data Tables
  - Webmaster for entire WASC report website (CPR and EER)
- Created the history section of the graduate History and Philosophy of Science course in the Biology masters degree program (2015) and join the class annually as a guest.
- Annually compute the faculty salary target for the Vice President for Finance and Administration (1999 – present)
- I have also served on several university committees including: Faculty Status Committee, Faculty Council, Spiritual Development Committee, Teacher Education Committee, Media Board, IPPS Advisory Board, and Faculty Workshop and Retreat Committee.
- Regular speaker at the New Faculty Orientation and New Faculty Seminar.
- Helped with organizational tasks (presiding over sessions, etc) for most of the Wesley Center Conferences.
- Served on student honors thesis committees outside of my department.
- Have spoken in a number of PLNU events including: Heritage Day chapel, Psychology 101 convocation and Faculty Workshop.
- Coordinator and co-leader for a Theology/Biology study abroad trip to Kenya (1998)

Within the MICS Department:

- Wrote both Department Reviews
- Wrote the Mathematics Single Subject Program certification documents for the State of California and created the template used by other PLNU departments for their single subject documents.
- Organized annual trips to take students to the Mathematical Association of America Southern California Section meeting. Students presented posters of their research at these meetings.
- Designed our departments study abroad experience. This is a course in the history of mathematics. Lead trips in 2000, 2002, 2004, 2006, 2008, 2012, 2014.

## COMMUNITY INVOLVEMENT

Editor of *The Proceedings of the Canadian Society for History and Philosophy of Mathematics* now named *The Annals of the Canadian Society for History and Philosophy of Mathematics* (2014-Present). The book series published by Birkhauser and my contract to edit the series has been extended through 2027.

Canadian Society for History and Philosophy of Mathematics

- Production Editor for the Newsletter of the Canadian Society for the History and Philosophy of Mathematics (2008-present)
- Vice President (2016-2018)
- President (2018-2020)
- Past President (2020-present)

Nexus Network Journal, Editorial Board Member, (2014-present)

Nexus Association

- Nexus Association Secretary (2023 – present)
- Board Member (2021-present)
- Scientific Committee for Nexus 2023 in Turin, Italy (2023)
- Scientific Committee for Nexus 2020 in Kaiserslautern, Germany (postponed to 2021)
- Scientific Committee for Nexus 2018 in Pisa, Italy (2018)
- Scientific Committee for Nexus 2016 in San Sebastian, Spain (2016)
- Scientific Committee for PhD Day for Nexus 2012 in Milan, Italy (2012)

Accreditation Evaluator for the Western Association of Schools and Colleges (2008-present)

Journal Referee for American Mathematical Monthly (2023 – present)

Journal Referee for PRIMUS (2013-present)

Journal Referee Journal of the Association of Christians in the Mathematical Sciences (2022-present)

Journal Referee for Convergence (2017-present)

NSF Review Panel Member (2014-present)

Association for Women in Mathematics

- Membership Committee (2017-20)

Board Member for Association of Christians in the Mathematical Sciences

- Secretary of the Association of Christians in the Mathematical Sciences (2011-2013)
- Vice President of the Association of Christians in the Mathematical Sciences (2013-2015)
- President of the Association of Christians in the Mathematical Sciences (2015-2017)
- Joint Mathematics Meetings Event Coordinator (2013-2-23)

Board Member Lamb's Players Theatre (2014-present)

- Chairman of the Board (2020-present)

HMG Executive Leadership Summit

- Board of Advisors (2022-present)

Society for Information Management (2012-present)

- PLNU Faculty Liaison (2012-present)
- San Diego Chapter Academic Committee (2018-present)
- San Diego Chapter Academic Committee Chair (2021-present)
- San Diego Chapter Board Member (2021-present)
- SIM National Academic Board (2021-present)

Mathematical Association of America

- Centennial Committee (2014-2015)
- Chauvenet Prize Committee (2020-present)

Plant with Purpose Gala Committee (2011-2022)

INGenIOuS Workshop

- Invitation only conference funded by NSF
- Focused on building a community of mathematicians that are training students to use mathematics to solve complex scientific and social problems

Program Review External Reviewer

- Mathematics and Computer Science, Wheaton College (2018)
- General Education Program, Vanguard University (2013)
- Mathematics and Physics Department, Azusa Pacific University (2012)

"Learning Discrete Mathematics and Computer Science Via Primary Sources," funded by the NSF, PI David Pengelley, New Mexico State University (2010-2012)

- Project testing and data gathering
- Assisted with Workshops at the Joint Mathematics Meetings (2011, 2012)
- Participated in Workshop on Authorship of Projects, April (2012)

CIC Network for Vocation in Undergraduate Education (2009-present)

- PLNU point of contact for NetVUE
- Consultant visit to Schreiner University, TX, 2012
- NetVUE conferences 2011, 2013, 2015, 2017, 2019, 2022

Medical Benevolence Foundation:

- Interim Executive Director of the Medical Benevolence Foundation (March – December 2007, April 2011 – January 2012)
- Trustee of the Medical Benevolence Foundation (1997 – 2012)
- Treasurer of the Medical Benevolence Foundation (1999-2002)
- Vice President of the Medical Benevolence Foundation (2005-2006)
- President of the Medical Benevolence Foundation (2007-2008)
- Past President of the Medical Benevolence Foundation (2009-10)
- Coordinator for the construction of a maternity ward at Tumutumu Hospital in Karatina, Kenya (1998-2003)

Assistance provided to a number of community groups in the areas of:

- Strategic planning
- Financial management
- Facilitation and development of multi-day consultations
- Facilitation of gatherings to create theological documents