# Ximena Catepillán Professor Emerita of Mathematics, Millersville University of Pennsylvania

#### ximena.catepillan@millersville.edu

Member of the Mapuche indigenous ethnic group, Chile

# ACADEMIC DEGREES:

University of Iowa, USA, Ph.D. Mathematics University of Iowa, USA, M.S. Mathematics Universidad de Santiago de Chile, Chile, Magister in Mathematics

#### **PROFESSIONAL EXPERIENCE:**

Professor, Millersville University, Millersville, PA Teaching/Research Assistant, University of Iowa, IA Associate/Assistant Professor, Universidad de Magallanes, Patagonia, Chile Assistant Professor, Universidad de Ios Lagos, Chile Adjunct professor, Universidad de Santiago, Santiago, Chile

# COURSES TAUGHT ABROAD (Mexico, Guatemala, and Belize):

Mathematics in Non-European Cultures, MATH 102, Yucatan, Mexico, every summer 2006 – 2010. Courses offered with archaeologists from the Maya Exploration Center.

- Mathematics in Non-European Cultures, MATH 102 & Social Work Community Services, March 2016, Yucatan, Mexico. Course offered with archaeologists from the Maya Exploration Center.
- Ancient Maya Mathematics & Modern Communities, MATH 102 & Social Work Community Services, May 2018, Guatemala & Belize. Course offered with archaeologists from the Maya Exploration Center.
- Ancient Maya Culture and Community Service at the Yucatan Peninsula, Mexico, May 2019. Course offered with archaeologists from the Maya Exploration Center.

# COMMUNITY SERVICE:

**Mexico, May 2019:** I teamed up with Millersville University MATH 102 students, and an archaeologist from Maya Exploration Center, to bring every student in Escuela Jose Vasconcelos in Ek Balam, Mexico, internet capable i-Pads. My students spent a day teaching the Maya students how to use the i-Pads. A whiteboard and a 1-year internet service were donated.

**Guatemala, May 2018:** I teamed up with Millersville University Math 102 students, and an archaeologist from Maya Exploration Center, to paint the elementary school Escuela Aldea Zocotzal in Flores, Guatemala. I taught (in Spanish) Maya Arithmetic, for two days, to first and second-grade Maya students.

**Mexico, May 2017:** I teamed up with Millersville University Math 102 students, and an archaeologist from Maya Exploration Center, to paint the elementary school Colegio El Apostol del Arbol in Yaxunah, Mexico. I taught (in Spanish) Maya Arithmetic to a sixth-grade class of Maya students.

Lancaster, PA, 2008 – 2019: I led Millersville University, UNIV 103, freshman seminar students (Culture, Science, and Mathematics in the pre-Columbian Americas), to do volunteer work in the annual United Way Day of Caring,

**RESEARCH AREAS:** Operator Theory, and Ethnomathematics with focus on the mathematics and science of the Pre-Columbian Americas.

# COURSES DEVELOPED:

*Tópicos en Etnomatemáticas*, Magister en Educación Matemática, Universidad de Santiago de Chile USACH, Chile 2021

- *Ethnomathematics*, Math697, Millersville University, Master in Mathematics Education, with Cynthia Taylor, 2014
- *Women in Mathematics and Science*, SCMA391/WSTU 391, D (Diversity) & P (Perspectives) course, Millersville University, with Natalia Dushkina and Nazli Hardy, 2008
- *Culture, Science and Mathematics in the pre-Columbian Americas*, UNIV 103, Millersville University, Freshman Seminar for undecided students, 2006

- *Mathematics around the World*, EDW 757, Millersville University, Educational Workshop for K-12 mathematics teachers, with Janet White, 2006
- *College Algebra Enrichment*, MATH 107, 2001, Millersville University, with Robert Buchanan and Charles Denlinger
- Mathematics in Non-European Cultures, MATH 102, 1993, D (Diversity) course, Millersville University

# **BOOKS & BOOK CHAPTERS:**

Springer, Research in History and Philosophy of Mathematics, *Two Examples of Ethnomathematics: The intersection of culture, history, and mathematics*, with Cynthia Huffman, Annals of the Canadian Society on the History and Philosophy of Mathematics CSHPM, 2024 https://link.springer.com/chapter/10.1007/978.3.031.72936.2.7

https://link.springer.com/chapter/10.1007/978-3-031-72936-2\_7

**MAA Press, Classroom Resource Materials,** chapter 1, *Investigating foundations of ancient Rapa Nui houses,* in the book *Teaching Mathematics Through Cross – Curricular Projects*, with Cynthia Huffman, 2024 <a href="https://www.ams.org/books/clrm/072/clrm072-endmatter.pdf">https://www.ams.org/books/clrm/072/clrm072-endmatter.pdf</a>

AMS/MAA Classroom Resource Materials. chapter 23, The EPaDel Community, in the book Count Me In, Community and Belonging in Mathematics, with Linda McGuire, 2022 https://bookstore.ams.org/CLRM/68

**MAA Notes Publishing,** chapter 22, *Culture, Science, and Mathematics in the pre-Columbian Americas*, in the book *Mathematical Themes in a First-Year Seminar*, January 2021

https://old.maa.org/sites/default/files/pdf/pubs/books/members/NTE91.pdf

Mathematics in a Sample of Cultures, 2nd Ed. with two additional chapters, co-authors Waclaw Szymanski and Antonia Cardwell, Kendall-Hunt Publishing Co., August 2019. Revised 2<sup>nd</sup> Ed. August 2022. <u>https://he.kendallhunt.com/product/mathematics-sample-cultures</u>

Mathematics in a Sample of Cultures, online revised version with Waclaw Szymanski & Antonia Cardwell, Kendall-Hunt Publishing Co., 2019 <u>https://he.kendallhunt.com/product/mathematics-sample-cultures</u>

**Springer-Verlag Series,** chapter 19, *An Ethnomathematics Course and a First-Year Seminar on the Mathematics of the Pre-Columbian Americas*, AWM Volume, *Mathematics Education, A Spectrum of Work in Mathematical Sciences Departments*, January 2017 <u>https://link.springer.com/chapter/10.1007/978-3-319-44950-0\_19</u>

Mathematics in a Sample of Cultures, textbook with Waclaw Szymanski, Kendall-Hunt Publishing Co., January 2016

# **PUBLICATIONS:**

**Developing a written numbering system in lñupiaq: a beautiful ethnomathematics example,** with Cynthia Huffman, MAA Math Focus Magazine, page 22, February 2025

https://digitaleditions.walsworth.com/publication/?i=840016&view=issueBrowser

**Phnom Penh, Cambodia:** The oldest inscription of Zero (description), MAA Math Focus Magazine, February 2025 <a href="https://digitaleditions.walsworth.com/publication/?i=840016&p=20&view=issueViewer">https://digitaleditions.walsworth.com/publication/?i=840016&p=20&view=issueViewer</a>

- *Mathematics in faraway and forgotten places*, with Cynthia Huffman, MAA Math Horizons Magazine, February 2024 <u>https://digitaleditions.sheridan.com/publication/?i=814988&p=3&view=issueViewer</u>
- *The History of Mathematics is the History of You*, MAA Focus, with HOM SIGMAA Executive Board, page 40, October 2023 <u>https://digitaleditions.walsworth.com/publication/?i=803817&view=issueBrowser</u>

**Computations using Maya Numbers**, Mexicolore UK online magazine for teachers, mexicolore.co.uk, May 2023 <a href="https://www.mexicolore.co.uk/maya/home/computations-using-maya-numbers">https://www.mexicolore.co.uk/maya/home/computations-using-maya-numbers</a>

*Cómputos usando Números Maya*, Mexicolore UK online magazine for teachers, mexicolore.co.uk, September 2023 https://www.mexicolore.co.uk/maya/home/computos-usando-numeros-maya

**MAA Convergence Mathematical Treasure**: The Cambodian Zero by Frank J. Swetz. Contributed with the pictures taken at the National Museum of Cambodia in Phnom Penh, Cambodia, 2023

https://old.maa.org/press/periodicals/convergence/mathematical-treasure-the-cambodian-zero

*Maya Numbers and Computations*, Aztlander Magazine of the Ancient Americas, Vol.3, No. 1, January 2023, <a href="https://publuu.com/flip-book/288247/676281">https://publuu.com/flip-book/288247/676281</a>

*Misterios Matemáticos con Actividades para el Aula de Clases,* MAA Convergence Journal, with Cynthia Huffman and Scott Thuong, 2022

https://old.maa.org/press/periodicals/convergence/misterios-matem-ticos-de-rapa-nui-con-actividadespara-el-aula-de-clases-introducci-n

*Mathematical Mysteries of Rapa Nui with Classroom Activities*, MAA Convergence Journal, with Cynthia Huffman and Scott Thuong, 2021

https://old.maa.org/press/periodicals/convergence/mathematical-mysteries-of-rapa-nui-with-classroomactivities-introduction

Zero in the pre-Columbian Americas, with Alonso Méndez, Maya Exploration Center, 2017

https://www.mayaexploration.org/pdf/ZeroInPreColumbianAmericas CatepillanMendez Sept2017.pdf **NCTM's Integrating Math Project,** K-6 online anthology's collaborator, with Cynthia Taylor and Megan Rehm, February 2016

*Maya Calendars in the Classroom*, MTMS (Mathematics Teaching in the Middle School), with Cynthia Taylor and Megan Rehm, Vol.21, No.2, September 2015

https://pubs.nctm.org/view/journals/mtms/21/2/article-p106.xml

Career profile: Gregory Coxson, Mathematical Engineer, MAA Math Horizons, November 2014 https://www.jstor.org/stable/10.4169/mathhorizons.22.2.15

**Counting and Arithmetic of the Inca**, Revista Latinoamericana de Etnomatemática RLE, with Waclaw Szymanski, 2012 <u>https://www.redalyc.org/articulo.oa?id=274023595003</u>

An Ethnomathematics Course for Non-Mathematics Majors, Proceedings of the 2011 AMATYC Conference, 2011

*Women in Mathematics and Science course at Millersville University*, Proceedings of the 2011 AMATYC Conference with Natalia Dushkina, 2011

Un curso interdisciplinario en matemáticas, ciencias, y los estudios de las mujeres en la Universidad de Millersville, Digital Journal Matematicalia, Spain, with Natalia Dushkina and Nazli Hardy, 2009 <a href="https://documat.unirioja.es/servlet/articulo?codigo=3130573">https://documat.unirioja.es/servlet/articulo?codigo=3130573</a>

*Maya Calendar Conversions*, Convergence Journal of the Mathematical Association of America MAA, with Waclaw Szymanski, 2010 <u>https://old.maa.org/press/periodicals/convergence/maya-calendar-conversions</u>

The Calendars of the Maya, Proceedings of the 2009 AMATYC Conference, with Waclaw Szymanski, 2009

*Linear Combinations of Isometries*, Rocky Mountain Journal of Mathematics, with Waclaw Szymanski, 2004 <u>https://www.jstor.org/stable/44238743</u>

**Operadores en Espacios de Hilbert**, workshop lecture notes for the XXVIII Semana de la Matemática, 2001

Semigroup Properties of Factors in the Polar Decomposition of the Operator de-Moivre Formula, Proceedings of the American Mathematical Society, with Waclaw Szymanski, 1998 https://www.jstor.org/stable/118959

**A Model of a Family of Power Partial Isometries**, Far Eastern Journal of Mathematical Sciences, with Waclaw Szymanski, 1996

https://zbmath.org/pdf/01374491.pdf

Parameterization of Canonically Koszul Invertible Pairs, Journal of Operator Theory, 1995 https://www.jstor.org/stable/24714692

*Multiple Canonical Decomposition of Families of Operators and a Model for Quasinormal Families*, Proceedings of the American Mathematical Society, with Waclaw Szymanski and Marek Ptak, 1993 <u>https://www.jstor.org/stable/2161227</u>

Canonically Koszul Invertible, Koszul Invertible, and Subnormal Pairs of Operators on a Hilbert Space, Ph.D. Thesis, University of Iowa, Iowa City, IA, 1991

*Riemman Matrix of a Surface of Genus 2*, Journal Notas de la Sociedad de Matemática de Chile, 1987 <u>https://zbmath.org/0673.30031</u>

*Riemman Matrix of a Surface of Genus 2 with 5 Automorphisms*, Proceedings of the 2<sup>nd</sup> Conference in Complex Geometry, Chile, 1986

**Differential Equations and Discrete Groups**, Proceedings of the 1<sup>st</sup> Conference in Complex Geometry, Chile, 1984

#### **INTERVIEWS**:

AWM Association for Women in Mathematics/Math for America Essay Contest. Essay written by Daniel Coxson, Richard Montgomery High School, Rockville MD, titled "Ximena Catepillán, Mathematical Ambassador to the Americas," won an Honorable Mention in the Grades 9-12 category, 2022. https://awm-math.org/awards/student-essay-contest/2022-student-essay-contest-results/2022-student-essay-contest-grades-9-12-hm-1/

Podcast interview with Michael Parker West, The Way Out is Back Through, Local School Districts

NC, October 2022 https://www.thewayoutisbackthrough.org/about.html

#### SELECTED PRESENTATIONS: (Since 2015)

**California State University Monterey Bay, CSUMB,** Ethnomathematics: the connection between culture, history, and mathematics, Summer Academy, Monterey Bay, CA, June 2025

III Coloquio Internacional de Historia y Filosofía de la Matemática, Keynote lecture, La Etnomatemática como instrumento de enseñanza, Universidad de Magallanes, Universidad Nacional de Trujillo,

Universidad Nacional Pedro Luis Gallo, December 2024

Whitman College, Colloquium presentation, *Computations among Maya calendars*, Walla Walla, WA, November 2024

**Triton College,** Invited Lecture, *Ethnomathematics in the pre-Columbian Americas*, River Grove, Chicago IL, September 2024

**Dominican University,** Invited Lecture, *Ethnomathematics in the pre-Columbian Americas*, River Forest, Chicago IL, September 2024

**MathFest2024, Invited Paper Session**, *When are we going to use this? Interdisciplinary Projects in Pure Math Courses*, with Cynthia Huffman, Indianapolis, IN, August 2024

California State University Monterey Bay, CSUMB, Helen Rucker Summer STEAM Pathway Program, *Playing with Mathematics Around the World*, Monterey Bay, CA, July 2024

Annual Meeting of the Pacific Northwest Section of the Mathematical Association of America, Keynote Lecture: *Ethnomathematics and Kinship Systems*, Anchorage, AK, June 21, 2024

Annual Meeting of the Pacific Northwest Section of the Mathematical Association of America, Keynote Lecture: *Ethnomathematics: the connection between culture, history, and mathematics,* Anchorage, AK, June 20, 2024

**Millersville University and Franklin & Marshall College,** Colloquium presentation, *Tracing Unicursal Indigenous Graphs*, Millersville, PA, April 2024

Adelphi University, Pohle Colloquium, *Maya numbers and calendrical computations*, Garden City, NY, February 2024

XCI Encuentro Annual Sociedad de Matemática de Chile, SOMACHI, La Etnomatemática en el Colapso de los Natchez, Santiago, Chile, December 2023

Hofstra University, Seminar Lecture, Ethnomathematics and Kinship Systems, Hempstead, NY, October 2023

Hofstra Cultural Center, Hofstra University, Keynote Lecture, *Ethnomathematics: The connection between culture, history, and mathematics*, Hempstead, NY, October 2023

**Universidad de Santiago de Chile USACH**, *Misterios Matemáticos de Rapa Nui con Actividades para el Aula de Clases,* launch of Journal Morfismo for USACH mathematics alumni, Santiago, Chile, October 2023

**Universidad de Valparaíso IMUV,** Workshop, *Etnomatemáticas: Conexión entre Cultura, Historia y Matemáticas,* Valparaíso, Chile, July 2023 (canceled because of weather)

**Fundación Panameña para la Promoción de las Matemáticas**, **FUNDAPROMAT**, *Números Alrededor del Mundo*, virtual, Panama, June 2023

**California State University Monterey Bay, CSUMB,** *An Introduction to Ethnomathematics*, Second Summer Academy on Culturally Responsive Education, virtual, Monterey Bay, CA, June 2023

Canadian Society for History and Philosophy of Mathematics, CSHPM, Congress of the Humanities and Social Sciences, *Ethnomathematics: The intersection of culture, history, and mathematics*, with Cynthia Huffman, Toronto, Canada, May 2023

Philadelphia Undergraduate Mathematics Conference, PUMC Rutgers University Camden, sponsored by Bryn Mawr College, La Salle University, Rutgers University, and Temple University, Keynote speaker, *Ethnomathematics: The connection between culture, history, and mathematics*, Camden, NJ, April 2023

**Universidad de Valparaíso,** Colloquium presentation at Instituto de Matemáticas Universidad de Valparaíso, IMUV, *Etnomatemática: La Conexión entre cultura, historia y matemática*, Valparaíso, Chile, Marzo 2023

Aztlander, Livestream Event, Maya Numbers and Computations, January 2023 Video recording at <a href="https://youtu.be/EJdjI3rTREE">https://youtu.be/EJdjI3rTREE</a> <a href="https://publuu.com/flip-book/288247/676281">https://publuu.com/flip-book/288247/676281</a>

**Universidad de Valparaíso,** *Introducción a la etnomatemática*, conversación con estudiantes del Seminario Educación Matemática, Valparaíso, Chile, November 2022

**PASHoM, Philadelphia Area Seminar on the History of Mathematics,** *Maya Calendar Computations*, hybrid, Villanova University, PA, November 2022

**Pasadena College, Latinx Heritage Celebration,** A Virtual Mathematical Trip to pre-Columbian Cultures, virtual, Pasadena, CA, October 2022

**Millersville University and Franklin & Marshall College,** Colloquium presentation, *Mathematics and Kinship Systems,* Millersville, PA, September 2022

**Canadian Society on the History and Philosophy of Mathematics CSHPM**, *Ethnomathematics and Kinship Systems*, virtual, Canada, July 2022

**Millersville University Honors & Awards Banquet,** presentation *A Math Mystery in Rapa Nui*, Millersville, PA, May 2022

**West Chester University,** Colloquium presentation, *Mathematics and Kinship Systems in Australia and the Republic of Vanuatu*, West Chester, PA, May 2022

**Fundación Panameña para la Promoción de las Matemáticas, FUNDAPROMAT,** Un Viaje Matemático por las Culturas Precolombinas, Parte 2, virtual, Panama, February 2022

**Fundación Panameña para la Promoción de las Matemáticas, FUNDAPROMAT,** Un Viaje Matemático por las Culturas Precolombinas, Parte 1, virtual, Panama, October 2021

**Olimpíadas Matemáticas de Chile**, presentation, *Un Viaje Matemático a Rapa Nui*, virtual, Universidad de Santiago de Chile, Chile, August 2021

**Women in STEM & LLC**, Millersville University, *Teaching About the Cultural Richness of Mathematics*, virtual, Millersville, PA, April 2020

MathFest 2019, MAA Membership Committee, panel presenter and round table participant, Cincinnati, OH, August 2019

**Universidad de la Frontera**, *Un Curso de Etnomatematicas y un Seminario de las Matemáticas de las Americas pre-Colombinas*, Keynote Speaker, Temuco, Chile, August 2018

MathFest 2018, MAA Membership Committee, panel presenter and round table participant, Denver, CO, August 2018

**MathFest 2018**, *The History of the EPaDel Careers in Mathematics Conference*, officers meeting, Denver, CO, August 2018

**Millersville University Holocaust Memorial Night**, presenter and round table participant, Millersville, PA, April 2017

**PASSHEMA, Indiana University of Pennsylvania,** *Ethnomathematics: Teaching About the Cultural Richness of Math*, Keynote speaker, Indiana, PA, March 2017

Penn State University, Maya Civilization, presentation for math majors, Harrisburg, PA, 2016

MathFest 2016, A course on the mathematics of the pre-Columbian Americas, Columbus, OH, August 2016

**Primer Congreso Latinoamericano de Etnomatematicas,** *Cero en las Americas pre-Colombinas*, Sololá, Guatemala, June 2016

Penn State University, Maya Calendars, presentation for math majors, Harrisburg, PA, 2015

**AMATYC,** *Women in Mathematics and Science Course at Millersville University*, with Natalia Dushkina, New Orleans, LA, November 2015

**MALAS Conference**, *Building Interdisciplinary Bridges*, Millersville University, Millersville, PA, 2015 **MathFest 2015**, *An Animation of the Maya Tzolkin Calendar*, with Megan Rehm and Cynthia Taylor,

Washington DC, August 2015 BCTM Maya Colondara in the Classroom with Magan Bahm and Cynthia Taylor, Langaster, BA, Au

**PCTM,** *Maya Calendars in the Classroom*, with Megan Rehm and Cynthia Taylor, Lancaster, PA, August 2015

**JMM 2015,** *Remarks on Vedic Arithmetic – Multiplication*, with Waclaw Szymanski, San Antonio, TX, January 2015

#### MAA MATHEMATICAL ASSOCIATION OF AMERICA

MAA HOM SIGMAA Chair History of Math Special Interest Group, January 2025 - 2028

MAA Pacific Northwest Section PNW, **Invited speaker** for two presentations at the Annual Section Meeting: *Ethnomathematics: the connection between culture, history, and mathematics*, June 20,

Anchorage, AK 2024

Ethnomathematics and Kinship Systems, June 22, Anchorage, AK 2024

MAA Congress member, Representative-at-Large for the Interests of Members Residing outside the United States. July 2024 - 2027 MAA EPaDel Volunteer Visiting Speaker Program, 2024 - present MAA HOM SIGMAA Chair History of Math Special Interest Group, January 2022 - 2025 MAA MathFest 2023 Ethnomathematics Session Chair organizer and moderator 2023 MAA T. Christine Stevens Award for Leadership Development, Chair 2022 - 2025 EPaDel Careers in Math Conference, Millersville University, Organizing Committee, Fall 2023 MAA MathFest 2021 Ethnomathematics Session Chair organizer and moderator 2021 MAA CUSP Committee on Undergraduate Student Programming, January 2021 - present MAA EPaDel Spring Conference at Millersville University, Organizing Committee Chair, 2021 MAA EPaDel Bylaws Committee member, Fall 2018-Spring 2019 MAA EPaDel Section Representative Elections Committee, Chair Fall 2018 MAA Chair EPaDel Section (Eastern Pennsvlvania & Delaware) 2017 – 2019 MAA JMM Ethnomathematics Session Chair organizer and moderator, Baltimore, MD, 2019 MAA Mentor for Project NexT, mentoring an NSF post-doc faculty at UPenn, August 2018 – 2019 MAA Chair Nominating Committee for EPaDel Representative to the Congress. September-December 2018 MAA Vice-Chair EPaDel Section (Eastern Pennsylvania & Delaware) 2015 - 2017 MAA Centennial Celebration, The Musical cast, Franklin & Marshall College, March 2015 MAA Member of Committee on Sections 2015 - 2020 MAA EPaDel Chair Nominating Committee, Fall 2014 MAA Mentor for the ECM (Early Career Mathematicians) Mentoring Network, 2014 – 2016 MAA JMM Ethnomathematics Session Chair organizer and moderator, San Antonio, TX, Jan. 2015 MAA HOM-SIGMAA representative for the EPaDel section, 2014 - 2020 MAA EPaDel Careers in Math Conference, Temple University, Organizing Committee, Fall 2013 MathFest 2011. Organizer and moderator for two sessions: History of Mathematics and its Uses in the Classroom, August 2011 MAA Travel Study Programs Committee, 2011 – 2014 MAA Member-at -large in the Executive Committee of the EPaDel section, 2007 - 2012 MAA EPaDel Student Chapter Coordinator 2009 – 2010 MAA EPaDel Silent Auction creator & coordinator for spring and fall conferences 2011 - 2015 MAA departmental liaison at Millersville University 2005 - 2020 MAA EPaDel Governor's Nominating Committee, Fall 2012 MAA EPaDel Fall Conference at Millersville University, Organizing Committee Chair, 2012 & 2017 MAA EPaDel Careers in Mathematics Conference Committee, Millersville University, Chair, 2009 & 2017 MAA INTERSECTION NEWSLETTER ARTICLES: Intersection is the newsletter for the officers of all 29 Sections of the Mathematical Association of America.

Let's Increase the MAA's Student Membership! Fall 2016 Vendors at Section Meetings Fall 2017

**BOOK REVIEWS:** *101 Careers in Mathematics* 3<sup>rd</sup> ed., with Antonia Cardwell, MAA Horizons Magazine, February 2015

ABROAD WORKSHOPS/MINI-COURSES ATTENDED: (Since 2005)

The following workshops have all been offered by archaeologists from the Maya Exploration Center (MEC) and Ancient Explorations.

An Expedition Through the Cities of Ancient Greece, Greece, Ancient Explorations, June 2025 Zenith Passage at Ancient Angkor and Other Remote Khmer Ruins, Cambodia, Ancient Explorations, August 2023

Ancient American Pyramids: 4000 years of pyramid building in the Mississippi River Valley, Ancient Explorations, June 2022

**Rapa-Nui: Exploring and Mapping its Ancient Villages**, Rapa-Nui, Chile, Ancient Explorations, July 2019 (In December 2019 I received a temporary license by Tukuh Technology to review imagery obtained during the July trip.)

*The Amazon Basin of Brazil, Ancient Civilizations & Modern Tribes*, Center for STEM Education, Amazonas, Brazil, July 2017

The History, Culture and Artistic Traditions of Cuba, Center for STEM Education, Cuba, July 2016 Ancient Inca Culture and Modern Ecology, Center for STEM Education, Bolivia, June 2015 Workshop for college teachers of astronomy, mathematics and related areas, Chautauqua (University of Texas, Austin), Chiapas, Mexico, August 2009

*Workshop, Ancient Inca mathematics and culture: Cuzco, Machu Picchu, and the Nazca Lines,* Chautaugua (University of Texas, Austin), Peru, July 2008

Workshop, Ancient Inca mathematics and culture: Cuzco, Machu Picchu, and the Sacred Valley, Chautauqua (University of Texas, Austin), Peru, June 2007

*Workshop, Ancient Maya mathematics in the highlands of Guatemala,* Chautauqua (University of Texas, Austin), Guatemala, June 2006

*Workshop, Ancient Maya mathematics in the ruins of Quintana Roo*, Chautauqua (University of Texas, Austin), Yucatan Peninsula, Mexico, June 2005

#### **PROFESSIONAL ORGANIZATIONS:**

CSHPM Canadian Society of the History and Philosophy of Mathematics IMS Institute of Maya Studies MAA Mathematical Association of America & HOM SIGMAA AMS American Mathematical Society, 1992 – 2020 AWM Association of Women in Mathematics SOMACHI Sociedad de Matematica de Chile AWS Association for Women in Science TWOWS Third World Organization for Women in Science AAPLAC Association of Academic Programs in Latin America & the Caribbean MALAS Midwest Association for Latin American Studies RELAET Miembro de la Red Latinoamericana de Etnomatemática

**REFEREE:**MAA Convergence Journal, 2019 – present<br/>JMC Journal of Mathematics and Culture, 2010 – present<br/>RLE Revista Latinoamericana de Etnomatemáticas, 2014 – 2017<br/>MAA Mathematics Magazine, 2014

**EDITOR:** Revista Morfismo Universidad de Santiago de Chile USACH, 2022 – present MAA Convergence Editorial Board, 2020 – present

#### SOCIEDAD DE MATEMATICA DE CHILE (SOMACHI):

Ethnomathematics session organizer and moderator, Annual SOMACHI Conference, December 2021

ADVISORY BOARD: Member of the Advisory Board FUNDAPROMAT, Fundación Panameña para la Promoción de las Matemáticas, Panama, 2022 – present

Member of the Advisory Board **Revista Morfismo** of Universidad de Santiago de Chile USACH, Chile, 2022 – present

MILLERSVILLE UNIVERSITY COMMITTEES: (Since 2015)

Millersville University Foundation, 2021 – present Millersville University Foundation, Chair Committee on Directors, 2023 – 2024 President Transition Committee, 2018 – 2019 Middle States Steering Committee, 2017 – 2020 Middle States Group 1 Committee, 2017 – 2020 Presidential Search Committee, appointed by the Council of Trustees, 2017 – 2018 Strategic Advisory Council (SAC) co-chair, June 2015 – May 2019 Strategic Plan Facilitation Team, June 2015 – May 2019 Strategic Planning Steering Committee, June 2015 – May 2019 SAC, Undergraduate Research Metric subcommittee, Fall 2015 Tenure & Promotion Committee, School representative, 2013 – 2015 Multidisciplinary Studies Curriculum Committee, School representative, 2013 – 2015 President's Advisory Leadership Council, Student Success Group, 2012 Enhance Engaged Learning Experience, Transformation Action Idea Team, Millersville University, 2012 APSCUF, Social Committee, 2011 – 2020 Women's Studies Curriculum Committee, 2011 – 2020 MU Foundation Board of Directors Member, 2010 – 2017 MU Foundation, Committee on Directors, 2011 – 2017

MU Wellness Program Committee, 2010 – 2015