

PROFESSOR
 DEPARTMENT OF MATHEMATICS AND STATISTICS
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EDUCATION

Ph.D. Mathematics, University of California, Davis June 2006
M.A. Mathematics, Howard University May 2001
B.A. Mathematics, University of California, Berkeley May 1999

TEACHING EXPERIENCE

Professor, California State Polytechnic University, Pomona 2016–present
Associate Professor, California State Polytechnic University, Pomona 2011–2016
Assistant Professor, California State Polytechnic University, Pomona 2006–2011
Visiting Professor, Pomona College Fall 2017
Visiting Assistant Professor, Georgetown University 2013–2014
Lecturer, Freshman Summer Research Institute, California Institute of Technology Summer 2012
Lecturer, University of California, Santa Barbara Summer 2007
Associate Instructor, Department of Mathematics, Spelman College Summer 2002, 2003
Associate Instructor, Department of Mathematics, Howard University 2001–2002

PUBLICATIONS

- *The Structure of the Heawood Graph*, with Emille Davie Lawrence. Submitted to *Geombinatorics* in February 2020.
- *Rational Knots and their Generalizations*, A Concise Encyclopedia of Knot Theory, to be published by CRC Press in 2020.
- *Topological Symmetry Groups of the Heawood Graph*, with Erica Flapan, and Emille Davie Lawrence. *Symmetry*, Vol. 12, (2020) 546.
- *A View of Mathematics from Behind the Veil*, In A. Henrich, E. D. Lawrence, M. A. Pons (Eds.), *Living Proof: Stories of Struggle and Resilience on the Path to Becoming a Mathematician*. pp. 43–46. AMS/MAA, 2019.
- *Knots, Molecules, and the Shape of the Universe: An Introduction to Topology*, with Erica Flapan, et. al. American Mathematical Society, 2016.
- *The Coarse Geometry of the Kakimizu Complex*, with Jesse Johnson and Roberto Pelayo. *Algebraic and Geometric Topology*, Vol. 14, No. 5 (2014) 2549–2560.

- *Developing High School Students Understanding of the Function Concept*, with Ed Dubinsky. Journal of Mathematical Behavior, Vol. No. 32 (2013) 83–101.
- *Teaching Mathematics to English Language Learners Using Moses' Five-Step Approach*, with Ruth Ahn and Joann I. Teaching for Excellence and Equity in Mathematics, Vol. 3, No. 1 (2007) 20–28.
- *Meridional Almost Normal Surfaces in Knot Complements*, Algebraic and Geometric Topology, Vol. 8, No. 3 (2008) 1717–1740.
- *Knots With Infinitely Many Incompressible Seifert Surfaces*, Journal of Knot Theory and its Ramifications, Vol. 17, No. 5 (2008) 1–15.

RESEARCH RELATED PRESENTATIONS

- *Topological Symmetry Groups of the Heawood Graph*
AMS Fall Western Sectional Meeting, UC Riverside November 9, 2019
- *Symmetries of Spatial embeddings of the Heawood Graph*
Department of Mathematics and Statistics Colloquium, Cal Poly Pomona May 9, 2018
Department of Mathematics Seminar, San Jose State University, San Jose, CA November 1, 2017
- *The Coarse Geometry of the Kakimizu Complex*
AMS Sectional Meetings, CSU Fullerton, Fullerton, CA October 24, 2015
AMS Spring Sectional Meetings, UNLV, Las Vegas, Nevada April 18-19, 2015
Morgan State University, Baltimore, MD April 10, 2014
- *Seifert Surfaces for Knots and the Kakimizu Complex*
Georgetown University, Washington, DC January 25, 2013
University of Hawaii, Hilo, PURE Mathematics REU program. June 15, 2012
- *Supporting Mathematics Achievement for Under-prepared Students Using the Algebra Project Model for Experiential Learning* April 1, 2013
Teachers College, Columbia University, New York, NY
- *Knots, Surfaces, and Heegaard Splittings of 3-Manifolds* April 22, 2010
Morehouse College, Atlanta, GA.
- *Incompressible Surfaces in Knot Complements and the Kakimizu Complex* August 21, 2009
Mathematics Institute Topology Seminar, UNAM, Mexico City, Mexico
- *Knots, Bridges, Surfaces and Knot Complements* October 18, 2008
Shenandoah Undergraduate Mathematics and Statistics (SUMS), James Madison University, Harrisonburg, VA
- *Knots, Surfaces, and 3-Manifolds*
MSRI-UP Research Experience for Undergraduates Program, MSRI July 11, 2008
EDGE (Enhancing Diversity in Graduate Education) Program, Cal Poly Pomona June 6, 2008

- *Almost Normal Bridge Surfaces in Knot Complements*
1039th AMS Meeting, Claremont McKenna College May 4, 2008
USC Geometry/Topology Seminar, University of Southern California November 26, 2007
LMU Mathematics Department Seminar, Loyola Marymount University November 19, 2007
Pepperdine University Natural Science Seminar, Pepperdine University October 17, 2007
13th Conference for African American Researchers in the Sciences, U. Mass, Boston June 22, 2007
- *Knots With Infinitely Many Incompressible Seifert Surfaces*
The Granville-Browne Session, Joint Mathematics Meetings January 6, 2007
- *Knots, 3-Manifolds, and the Shape of Space*
SACNAS National Conference, Tampa, Florida October 27, 2006

TEACHING RELATED PRESENTATIONS

- *The past and present brilliance of our Black students* November 16, 2019
CMC South Conference, Palm Springs, CA
- *The IBL experience when students of color are in the majority* August 1, 2019
MAA Mathfest Invited Paper Session, Cincinnati, OH.
- *Setting the Stage for Student-Centered Pedagogies* July 31, 2019
MAA Mathfest Project NExT Workshop, Cincinnati, OH.
- *Academy of Inquiry Based Learning Graduate Student Workshop* November 22, 2019
UC Irvine
- *Academy of Inquiry Based Learning Workshop* July 9-12, 2019
Torrence, CA.
- *Putting Down the Chalk: Experiences with Flipping, Inquiry, and Equity in Undergraduate Mathematics Instruction* April 26, 2017
CeMAST Brown Bag Seminar, Cal Poly Pomona
- *Inquiry, Equity, and the Algebra Project* April 7, 2017
Breaking Boundaries in STEM Education, Loyola Marymount University, Los Angeles, CA
- *Student-Centered Engagement in the Classroom* August 26, 2015
Teaching Academy Summer Institute, Cal Poly Pomona
- *Strategies for Interactive Pedagogy Face to Face* September 18, 2014
New Faculty Orientation, Cal Poly Pomona
- *Helping Students Engage with Mathematics (Webinar)* May 13, 2014
Faculty Center, Cal Poly Pomona
- *The Role of Mentoring in Undergraduate Mathematics*, Panel Jan. 8, 2011
MAA-SACNAS-NAM Panel Discussion, Joint Mathematics Meetings, New Orleans, LA
- *From Shoestrings to DNA: An Introduction to the Mathematical Study of Knots*
Occidental College Multicultural Summer Institute, Los Angeles, CA July, 21, 2010
GEMS Workshop for Middle School Students, Pitzer College, Claremont, CA December 12, 2009

OTHER PROFESSIONAL ACTIVITIES

- *Associate Editor, Notices of the AMS*, American Mathematical Society 2018–present
- *Director, California Math Project at Cal Poly Pomona*, Cal Poly Pomona 2017–present
- *Steering Committee Ad-hoc Member*, Mathematical Sciences Research Institute 2017–2019
- *Human Resources Advisory Committee Co-Chair*, Mathematical Sciences Research Institute 2015–2019
- *Diversity Committee*, Institute for Advanced Study/Park City Mathematics Institute 2010–2018
- *Editorial Board*, The College Mathematics Journal 2013–2018
- *Reviewer*, Problems, Resources, and Issues un Mathematics Undergraduate Studies 2019–present
- *Reviewer*, The Journal of Mathematical Behavior 2014–present
- *Reviewer*, NSF-DMS grant proposals. September 2011
- National Alliance for Doctoral Studies in the Mathematical Sciences
undergraduate faculty mentor 2010-present

CONFERENCE ORGANIZING

- Co-organizer of *Math and Equity in Southern California Unconference* May, 2019
University of La Verne, La Verne, CA
- Co-organizer of *Sonia Kovalevsky Mathematics Day* March 2019
CSU Fullerton, Fullerton, CA
- Co-organizer of *Sonia Kovalevsky Mathematics Day* March 2019
CSU Fullerton, Fullerton, CA
- Co-organizer of *Topology: new trends in applications and theory* at Latinx in the Mathematical Sciences
Conference March 2018
IPAM, UCLA
- Co-organizer of *Sonia Kovalevsky Mathematics Day* Feb. 2018
Pomona College, Claremont, CA
- Co-organizer of *Math and Equity in Southern California Unconference* Feb. 2018
Harvey Mudd College, Claremont, CA
- Co-organizer of *Topological Data Analysis* October, 2016
Scientific symposium, SACNAS National Conference, Washington, DC
- Co-organizer of the *Pacific Coast Undergraduate Mathematics Conference* March 2012, 2013
California State Polytechnic University, Pomona, CA
- Co-organizer of the *AfterMath Conference: Preparing for Careers in the Math Sciences* Feb, 2013
Harvey Mudd College, Claremont, CA
- Co-organizer of *A Mathematical Invitation to Knot Theory* October, 2012
Scientific symposium, SACNAS National Conference, Seattle, WA

- Co-organizer of *Interdisciplinary Algebra* Scientific symposium, SACNAS National Conference, San Jose, CA October, 2011
- Co-organizer of *Categorical Methods in Topology and Quantum Geometry* Scientific symposium, SACNAS National Conference, Dallas, TX October, 2009
- Co-organizer of *Heegaard Splittings, Bridge Positions, and Low-dimensional Topology* AMS special session at the Joint Mathematics Meetings, San Diego, CA August, 2008
- Co-organizer of *Low Dimensional Topology and Quantum Geometry* Scientific symposium, SACNAS National Conference, Kansas City, MI October, 2007

HONORS AND AWARDS

- **Mathematical Association of America Project NExT Fellow** 2007–2008
- **University of California Office of the President’s Postdoctoral Fellowship**
Department of Mathematics, UC Santa Barbara 2006–2007
- **Ford Foundation Diversity Dissertation Year Fellowship**
Department of Mathematics, UC Davis 2005–2006
- **George W. Woodruff Fellowship**, Department of Mathematics
Emory University 2002–2003
- **Alfred P. Sloan Foundation Fellowship**
Department of Mathematics, Howard University 2001–2002
- **Minority Graduate Education Program Fellowship**
Department of Mathematics, Howard University 1999–2001
- **Honors in Mathematics, UC Berkeley Honors Thesis** 1999

GRANTS AWARDED

- NSF S-STEM-1930553, “Bolstering Advancement fo Masters in Mathematics (BAMM!)”
- MAA Tensor-SUMMA (Strengthening Underrepresented Minority Mathematics Achievement), “A Multi-Tiered Approach to Math Enrichment”, 2018-2020
- California Subject Matter Project/ESSA, “The California Mathematics Project at Cal Poly Pomona”, 2017-2020
- NSF DMS-0936047, “Categorical Methods in Topology and Quantum Geometry: A Scientific Symposium at the 2009 SACNAS National Conference”
- MAA Tensor-SUMMA (Strengthening Underrepresented Minority Mathematics Achievement), “The Northeast Los Angeles Mathematics Enrichment Program”, 2010-2012

- MAA Tensor-SUMMA (Strengthening Underrepresented Minority Mathematics Achievement), “The Cal Poly – Quail Middle School Math Club”, 2007-2008
- NSF DMS-0752978, “Low Dimensional Topology and Quantum Geometry: A Scientific Symposium at the 2007 SACNAS National Conference”

PROFESSIONAL MEMBERSHIPS

- American Mathematical Society (AMS)
- Mathematical Association of America (MAA)
- National Association of Mathematicians (NAM)
- National Council of Teachers of Mathematics (NCTM)