

Gizem Karaali

Associate Professor of Mathematics

October 15, 2018

EDUCATION

Ph.D. in Mathematics , University of California at Berkeley Dissertation: “ r -matrices on Lie superalgebras” (advisors: Nicolai Reshetikhin and Vera Serganova)	2004
B.Sc. in Electrical Engineering (with honors), Boğaziçi University, TURKEY	1997
B.Sc. in Mathematics (with honors), Boğaziçi University, TURKEY	1997

EMPLOYMENT

Associate Professor of Mathematics , Pomona College	2012 – present
Assistant Professor of Mathematics , Pomona College	2006 – 2012
Member, Extended Graduate Faculty , Claremont Graduate University.	2009 – present
Visiting Scholar , University of California at Santa Barbara	2004 – 2006
Graduate Student Instructor , U.C. Berkeley	1998 – 2003

FELLOWSHIPS AND GRANTS

(internal grants not included)

Humanities Studio 2018-2019 Faculty Fellow Pomona College Humanities Studio Inaugural Class	2018-2019
Wikipedia Fellow: General Academic Topics Cohort Association for Women in Mathematics	Summer 2018
Consortium on High Achievement and Success (CHAS) Faculty Grant “Whose Math and For What Purpose?” A Community Seminar on Identity, Culture, and Mathematics (Spring 2018)	2017
Director’s Mathematician in Residence (DMiR) Budapest Semesters in Mathematics Budapest, Hungary	Summer 2017

- Banff International Research Station (BIRS) Conference Grant** 2017
Algebraic Combinatorixx II Workshop
Banff, Alberta, Canada
- Association for Women in Mathematics (AWM) Travel Grant** 2017
BIRS Workshop on Algebraic Combinatorixx II
Banff, Alberta, Canada
- Institute for Pure and Applied Mathematics (IPAM) Core Program Membership** 2016
Spring 2016 Program in Cultural Analytics
Los Angeles, CA
- Banff International Research Station (BIRS) Conference Grant** 2016
Workshop on Creative Writing in Mathematics and Science
Banff, Alberta, Canada
- American Mathematical Society Child Care Grant** 2016
Joint Mathematics Meeting
Seattle, WA
- National Endowment for the Humanities (NEH) Enduring Questions Grant** 2014-2016
NEH Enduring Questions Course on the Aims and Value of Education
Project Director
- American Mathematical Society / National Science Foundation Travel Grant** 2014
International Congress of Mathematicians
Seoul, South Korea
- Banff International Research Station (BIRS) Conference Grant** 2013
Workshop on Creative Writing in Mathematics and Science
Banff, Alberta, Canada
- American Institute of Mathematics (AIM) Travel Grant and Honorarium** 2013
AIM / ICERM Workshop on Research Experiences for Undergraduate Faculty
Team leader
Providence, RI
- National Security Agency (NSA) Young Investigator Award** 2011-2013
Yang-Baxter equations, super quantum groups and generalized Hopf algebras
Principal Investigator
- Banff International Research Station (BIRS) Conference Grant** 2011
Algebraic Combinatorixx Workshop
Banff, Alberta, Canada

- American Institute of Mathematics** (AIM) Travel Grant 2010
Workshop on Supercharacters and combinatorial Hopf algebras
Palo Alto, CA
- Banff International Research Station** (BIRS) Conference Grant 2010
Workshop on Creative Writing in Mathematics and Science
Banff, Alberta, Canada
- Mathematical Sciences Research Institute** (MSRI) Research Membership 2009
Fall 2009 Program in Tropical Geometry
Berkeley, CA
- Mathematical Sciences Research Institute** (MSRI) Travel Grant 2009
Connections for Women Workshop - Introduction to Fall 2009 program
(Tropical Geometry)
Berkeley, CA
- American Institute of Mathematics** (AIM) Conference & Travel Grant 2009
Workshop on Research Experiences for Undergraduate Faculty
Palo Alto, CA
- National Science Foundation** (NSF) Grant DMS-0755540 2008-2011
Claremont Colleges Mathematics REU site
Senior Personnel
- Institute for Mathematics and Education** (IME) Travel Grant 2008
Workshop for Mathematicians in Mathematics Education (MIME)
Tucson, AZ
- Mathematical Sciences Research Institute** (MSRI) Travel Grant 2008
Workshop on Topics in Combinatorial Representation Theory
Berkeley, CA
- Mathematical Sciences Research Institute** (MSRI) Travel Grant 2008
Connections for Women Workshop - Introduction to Spring 2008 programs
(Combinatorial Representation Theory and Representations of Finite Groups)
Berkeley, CA
- BLAIS** Collaborative Grant 2007–2008
exploration / development of an Institute for Math and Science Education
Claremont, CA
- Centre de recherches mathématiques** (CRM) Travel Grant 2007
Workshop on Combinatorial Hopf Algebras and Macdonald Polynomials
Montreal, Canada

American Institute of Mathematics (AIM) Travel Grant Workshop on Buildings and Combinatorial Representation theory Palo Alto, CA	2007
Association for Women in Mathematics (AWM) Travel Grant Workshop for Women Graduate Students and Recent Ph.D.'s Joint Mathematics Meetings 2006, San Antonio, TX Workshop for Women Graduate Students and Recent Ph.D.'s Joint Mathematics Meetings 2004, Phoenix, AZ	2006
Earle C. Anthony Fund Partial Fellowship University of California, Berkeley	2002-2003
NATO A-1 Doctoral Scholarship Sponsored by TÜBİTAK , Turkey	1997-2002
Rafael Rodriguez Golden Age Scholarship University of California, Berkeley	1997-1998

HONORS AND AWARDS

American Mathematical Society (AMS) Project NExT Fellow	2006-2007
Southern California-Nevada MAA Section Project NExT Fellow Mathematical Association of America (MAA)	2006-2007
Outstanding Graduate Student Instructor Award (campus-wide award) U.C. Berkeley	2001-2002

PUBLICATIONS

COAUTHOR CONTRIBUTIONS EQUAL IF IN ALPHABETICAL ORDER.

Book-length manuscripts (authored or edited)

Barcelo, H., Karaali, G., Orellana, R.; *Recent Trends in Algebraic Combinatorics*, an edited volume of articles, Association for Women in Mathematics Series, Cham, Switzerland: Springer Nature, forthcoming.

Tunstall, L., Karaali, G., Piercey, V.; *Shifting Contexts, Stable Core: Advancing Quantitative Literacy in Higher Education*, an edited volume of articles, MAA Notes, MAA Press, forthcoming.

Karaali, G., Khadjavi, L.; “Mathematics for Social Justice: Resources for the College Classroom”, an edited volume of articles and classroom resources, in progress and under contract with the American Mathematical Society Press.

Karaali, G., Khadjavi, L.; “Mathematics for Social Justice: Focusing on Quantitative Reasoning and Statistics”, an edited volume of classroom resources, in progress and under contract with the American Mathematical Society Press.

Karaali, G.; “Representation Theory: A Capstone Course”, textbook, work in progress.

Preprints (articles submitted for peer review)

Garcia, S.R., Karaali, G., Katz, D.J.; *On Chebotarëv’s nonvanishing minors theorem and the Biró–Meshulam–Tao discrete uncertainty principle*, submitted for publication, available from authors upon request.

Karaali, G., Yih, S.; *The Magic of the Number Three: Three Special Cases in Abstract Algebra*, submitted for publication, available from the authors upon request.

Karaali, G.; “Emotional Labor in Mathematics: Reflections on Mathematical Communities, Mentoring Structures, and EDGE”, submitted for publication, available from the author upon request.

Aksoy, S., Azzam, A., Coppersmith, C., Glass, J., Karaali, G., Zhao, X., Zhu, X.; *School Choice as a One-Sided Matching Problem: Cardinal Utilities and Optimization*, submitted for publication, available from authors upon request.

Peer Reviewed Articles (published or accepted)

Gangl, H., Karaali, G., Lee, W.; *Homophonic Quotients of Linguistic Free Groups: German, Korean, and Turkish*, accepted for publication, to appear in *Involve, A Journal of Mathematics*, available from authors upon request.

Glass, J., Karaali, G.; *Matching Kids to Schools: The School Choice Problem*, in *Mathematics for Social Justice: Resources for the College Classroom*, edited by Karaali, G., Khadjavi, L., forthcoming.

Karaali, G.; *On Animals, QL Converts, and Transfer: An Interview with Len Vacher*, in *Shifting Contexts, Stable Core: Advancing Quantitative Literacy in Higher Education*, edited by Tunstall, L., Karaali, G., Piercey, V., forthcoming.

Karaali, G.; *On Grades and Instructor Identity: How Formative Assessment Saved me from a Midlife Crisis*, accepted for publication by PRIMUS: Problems, Resources, and Issues in Mathematics Undergraduate Studies, published online at <https://www.tandfonline.com/doi/abs/10.1080/10511970.2018.1456495>.

Karaali, G., Khadjavi, L.; *Unnatural Disasters: Two Calculus Projects for Instructors Teaching Mathematics for Social Justice*, accepted for publication by PRIMUS: Problems, Resources, and Issues in Mathematics Undergraduate Studies published online at <https://www.tandfonline.com/doi/abs/10.1080/10511970.2018.1472683>.

Karaali, G.; *An “Unreasonable” Component to a Reasonable Course: Readings for a Transitional Class*, in *Using the Philosophy of Mathematics in Teaching Undergraduate Mathematics*, edited by Bonnie Gold, Carl Behrens, and Roger Simons (Mathematical Association of America, Washington DC, 2017), pages 107–118.

Karaali, G., Villafane Hernandez, Edwin H., and Taylor, Jeremy A.; *What’s in a Name? A Critical Review of Quantitative Literacy, Numeracy, and Quantitative Reasoning*, *Numeracy* (journal of the National Numeracy Network), Volume **9**, Issue 1 (2016), Article 6. Available online at <http://scholarcommons.usf.edu/numeracy/vol9/iss1/art2/>

Karaali, G.; *A Humanistic Reading Component for an Introduction-to-Proofs Course*, in *Beyond Lecture: Techniques to Improve Student Proof-Writing Across the Curriculum*, edited by Rachel Schwell, Aliza Steurer, and Jennifer Franko Vasquez (Mathematical Association of America, Washington DC, 2016), pages 123-133.

Aksoy, S., Azzam, A., Coppersmith, C., Glass, J., Karaali, G., Zhao, X., Zhu, X.; *Coalitions and Cliques in the School Choice Problem*, *Involve, A Journal of Mathematics*, Volume 8 Issue 5 (October 2015), pages 801–823.

Karaali, G.; *Metacognition in the Classroom: Motivation and Self-Awareness of Mathematics Learners*, PRIMUS: Problems, Resources, and Issues in Mathematics Undergraduate Studies, Volume **25** Issue 5 (May 2015), pages 439–452.

Brumbaugh, J.L., Bulkow, M., Fleming, P.S., Garcia, L.A., Garcia, S.R., Karaali, G., Michal, M., Turner, A.P., Suh, H.; *Supercharacters, exponential sums, and the uncertainty principle*, *Journal of Number Theory*, Volume **144** (November 2014), pages 151–175.

Fowler, C.F., Garcia, S.R., Karaali, G.; *Ramanujan sums as supercharacters*, *Ramanujan Journal*, Volume **35** Issue 2 (November 2014), pages 205–241.

Karaali, G.; *Can Zombies Write Mathematical Poetry? Mathematical poetry as a model for humanistic mathematics*, *Journal of Mathematics and the Arts*, Volume 8, Issue 1-2 (2014), pages 38–45.

Karaali, G.; *The Genius as a Characterization of the Creative Spirit in Mathematics and the Arts*, in *Proceedings of Bridges 2014: Mathematics, Music, Art, Architecture, Culture*, edited by Gary Greenfield, George Hart, and Reza Sarhangi (Tessellations Publishing, Phoenix, 2014), pages 413–416.

Karaali, G.; *The Brave New World of Open Access & Creative Commons: a Humanistic Experiment in Mathematical Publishing*, Proceedings of the 2013 AMS Special Session on Topics and Issues in Electronic Publishing, pages 11–31. The Proceedings volume is available online at <http://www.emis.de/proceedings/TIEP2013/>.

Aguiar, M., Andre, C., Benedetti, C., Bergeron, N., Chen, Z., Diaconis, P., Hendrickson, A., Hsiao, S. K., Isaacs, I. M., Jedwab, A., Johnson, K., Karaali, G., Lauve, A., Le, T., Lewis, S., Li, H., Magaard, K., Marberg, E., Novelli, J-C., Pang, A., Saliola, F., Tevlin, L., Thibon, J-Y., Thiem, N., Venkateswaran, V., Vinroot, C. R., Yan, N., Zabrocki, M.; *Super-characters, symmetric functions in noncommuting variables, and related Hopf algebras*, Advances in Mathematics, Volume **229** Issue 4 (1 March 2012), pages 2310–2337.

Aksoy, S., Azzam, A., Coppersmith, C., Glass, J., Karaali, G., Zhao, X., Zhu, X.; *A Cost-Minimizing Algorithm for School Choice*, ISAIM 2012 (International Symposium on Artificial Intelligence and Mathematics, Fort Lauderdale, Florida, USA, January 9-11, 2012) Proceedings, 2012. Available at <https://www.cs.uic.edu/bin/view/Isaim2012/AcceptedPapers>.

Karaali, G.; *On the quantization of zero-weight super dynamical r -matrices*, Proceedings of the American Mathematical Society, Volume **140** Issue 1 (January 2012), pages 7–20. MR2833513

Hsiao, S.K., Karaali, G.; *Multigraded combinatorial Hopf algebras and refinements of odd and even subalgebras*, Journal of Algebraic Combinatorics, Volume **34** Number 3 (November 2011), pages 451–506. MR2836370

Karaali, G.; *An Evaluative Calculus Project: Applying Bloom’s Taxonomy to the Calculus Classroom*, PRIMUS: Problems, Resources, and Issues in Mathematics Undergraduate Studies, Volume **21** Issue 8 (November 2011), pages 719–731.

Aguiar, M., Andre, C., Benedetti, C., Bergeron, N., Chen, Z., Diaconis, P., Hendrickson, A., Hsiao, S. K., Isaacs, I. M., Jedwab, A., Johnson, K., Karaali, G., Lauve, A., Le, T., Lewis, S., Li, H., Magaard, K., Marberg, E., Novelli, J-C., Pang, A., Saliola, F., Tevlin, L., Thibon, J-Y., Thiem, N., Venkateswaran, V., Vinroot, C. R., Yan, N., Zabrocki, M.; “Super-characters, symmetric functions in noncommuting variables (extended abstract)” DMTCS Proceedings (FPSAC 2011 Reykjavik, Iceland), **AO**, 2011, 3–14.

Fleming, P.S., Garcia, S.R., Karaali, G.; *Classical Kloosterman sums: representation theory, magic squares, and Ramanujan multigraphs*, Journal of Number Theory, Volume **131** Issue 4 (April 2011), pages 661–680. MR2753270

Karaali, G., Choi, P. I., Owsley Sood, S., Grosfils. E. B.; *Envisioning a Quantitative Studies Center: A Liberal Arts Perspective*, Numeracy (journal of the National Numeracy Network), Volume 3, Issue 1 (2010), Article 4. Available online at <http://services.bepress.com/numeracy/vol3/iss1/art4>

Karaali, G., Yoshiwara, B.; *Life After Wolfram|Alpha: What You (and Your Students) Need to Know*, Loci, Volume 2 (January 2010). DOI: 10.4169/loci003365. <http://dx.doi.org/10.4169/loci003365>

Buhl, G., Karaali, G.; *Spanning sets for Moebius vertex algebras satisfying arbitrary difference conditions*, Journal of Algebra, Volume **320** Number 8 (15 October 2008), pages 3345–3364. MR2450731

Karaali, G.; *On Hopf Algebras and Their Generalizations*, Communications in Algebra, Volume **36** Number 12 (December 2008), pages 4341–4367. MR2473333

Karaali, G.; *Word problems: Reflections on embedding quantitative literacy in a calculus course*, Numeracy (journal of the National Numeracy Network), Volume **1** Issue 2 (July 2008), Article 6. Available online at <http://services.bepress.com/numeracy/vol1/iss2/art6>

Karaali, G.; *Dynamical Quantum Groups - The Super Story*, in *Hopf algebras and generalizations*, edited by Louis H. Kauffman, David E. Radford, and Fernando J. O. Souza (Contemporary Mathematics **441**, American Mathematical Society, Providence, RI, 2007), pages 19–52. MR2381534

Karaali, G.; *Super Solutions of the Dynamical Yang-Baxter Equation*, Proceedings of the American Mathematical Society, Volume **134** Number 9 (September 2006), pages 2521–2531. MR2213729

Karaali, G.; *A New Lie Bialgebra Structure on $sl(2, 1)$* , in *Representations of algebraic groups, quantum groups, and Lie algebras*, edited by Georgia Benkart, Jens C. Jantzen, Zongzhu Lin, Daniel K. Nakano, and Brian J. Parshall (Contemporary Mathematics **413**, American Mathematical Society, Providence, RI, 2006), pages 101–122. MR2262367

Karaali, G.; *Constructing r -matrices on Simple Lie Superalgebras*, Journal of Algebra, Volume **282** Number 1 (1 December 2004), pages 83–102. MR2095573

Editorials

Huber, M., Karaali, G.; *How to Wear More than One Hat Well*, editorial, Journal of Humanistic Mathematics, Volume **8** Issue 2 (July 2018), page 1.

Huber, M., Karaali, G.; *Communicating Mathematics Across Time*, editorial, Journal of Humanistic Mathematics, Volume **8** Issue 1 (January 2018), pages 1–2.

Huber, M., Karaali, G.; *Words, Words, Words*, editorial, Journal of Humanistic Mathematics, Volume **7** Issue 2 (July 2017), pages 1–3.

Huber, M., Karaali, G.; *Mathematical Identities*, editorial, Journal of Humanistic Mathematics, Volume **7** Issue 1 (January 2017), pages 1–2.

Huber, M., Karaali, G.; *Connections*, editorial, Journal of Humanistic Mathematics, Volume 6 Issue 2 (July 2016), pages 1–2.

Huber, M., Karaali, G.; *Not just in the eye of the beholder*, editorial, Journal of Humanistic Mathematics, Volume 6 Issue 1 (January 2016), pages 1–2.

Huber, M., Karaali, G.; *Inspiring Mathematical Experiences*, editorial, Journal of Humanistic Mathematics, Volume 5 Issue 2 (July 2015), pages 1–2.

Huber, M., Karaali, G.; *A Mathematician's Choice*, editorial, Journal of Humanistic Mathematics, Volume 5 Issue 1 (January 2015), pages 1–2.

Huber, M., Karaali, G.; *Mathematical Perspectives*, editorial, Journal of Humanistic Mathematics, Volume 4 Issue 2 (July 2014), pages 1–2.

Huber, M., Karaali, G.; *Turn! Turn! Turn!*, editorial, Journal of Humanistic Mathematics, Volume 4 Issue 1 (January 2014), page 1.

Huber, M., Karaali, G.; *Mathematics Rocks!*, editorial, Journal of Humanistic Mathematics, Volume 3 Issue 2 (July 2013), page 1.

Huber, M., Karaali, G.; *Math: That Thing You Do*, editorial, Journal of Humanistic Mathematics, Volume 3 Issue 1 (January 2013), pages 1–2.

Huber, M., Karaali, G.; *Games Mathematicians Play*, editorial, Journal of Humanistic Mathematics, Volume 2 Issue 2 (July 2012), page 1.

Huber, M., Karaali, G.; *Mathematical creation*, editorial, Journal of Humanistic Mathematics, Volume 2 Issue 1 (January 2012), page 1.

Huber, M., Karaali, G.; *Vampire statistics and other mathematical oddities*, editorial, Journal of Humanistic Mathematics, Volume 1 Issue 2 (July 2011), page 1.

Huber, M., Karaali, G.; *Welcome to the Journal of Humanistic Mathematics*, editorial, Journal of Humanistic Mathematics, Volume 1 Issue 1 (January 2011), page 1.

Extended Book Reviews

Karaali, G.; *Reading About Ada: Children's Edition*, extended book review of children's books on Ada Lovelace, commissioned for and to be submitted to Association for Women in Mathematics Newsletter in November 2018.

Karaali, G.; *Review of Mathematics and Art: A Cultural History*, by Lynn Gamwell (2015), extended book review, Journal of Mathematics and the Arts, Volume 10 Issue 1-4 (2016), pages 87–92.

Karaali, G.; *The Problems of Contemporariness and Voice: Review of Literacy & Mathematics: A Contemporary Approach to Quantitative Literacy*, by Jay P. Abramson and Matthew A. Isom (2005), extended book review, Numeracy, Volume 9 Issue 2 (July 2016),

Article 11. Available at: <http://scholarcommons.usf.edu/numeracy/vol9/iss2/art11>

Karaali, G.; *Really Big Numbers*, by Richard Evan Schwartz; *The Boy Who Loved Math: The Improbable Life of Paul Erdős*, by Deborah Heiligman; *The Short Seller*, by Elissa Brent Weissman, extended book review, Association for Women in Mathematics Newsletter, Volume **45** Number 4 (July-August 2015), pages 17–19.

Karaali, G.; *Mathematics in Popular Culture: Essays on Appearances in Film, Fiction, Games, Television and Other Media*, edited by Jessica K. Sklar and Elizabeth S. Sklar; *Loving+Hating Mathematics: Challenging the Myths of Mathematical Life*, by Reuben Hersh and Vera John-Steiner; *Mathematicians: An Outer View of The Inner World*, by Mariana Cook, extended book review, Association for Women in Mathematics Newsletter, Volume **43** Number 6 (November-December 2013), pages 22–25.

Karaali, G.; *Encyclopedia of Mathematics and Society*, by Sarah J. Greenwald and Jill E. Thomley, extended book review, College Mathematics Journal, Volume **44** Number 4 (September 2013), pages 332–335.

Karaali, G.; *Philosophy of Science after Feminism* by Janet Kourany, extended book review, Association for Women in Mathematics Newsletter, Volume **42** Number 1 (January-February 2012), pages 8–10.

Brief Book Reviews

Karaali, G.; *Rehumanizing Mathematics for Black, Indigenous, and Latinx Students*, edited by Imani Goffney and Rochelle Gutiérrez (2018), brief book review, Mathematics Teacher, to appear.

Karaali, G.; *The Great Formal Machinery Works: Theories of Deduction and Computation at the Origins of the Digital Age* by Jan Von Plato (2017), brief book review, Mathematics Teacher, to appear.

Karaali, G.; *When Critical Multiculturalism Meets Mathematics: A Mixed Methods Study of Professional Development and Teacher Identity*, by Patricia L. Marshall, Jessica T. DeCuir-Gunby, and Allison W. McCulloch (2015), brief book review, Mathematics Teacher, Volume **111** Number 1 (September 2017), pages 78–79.

Karaali, G.; *The Best Writing on Mathematics: 2010*, Mircea Pitici, ed., brief book review, Mathematics Teacher, Volume **105** Number 9 (May 2012), page 717.

Book Blurbs

Truth and Beauty, a chapbook of mathematical poetry by Marion Cohen, WordTech Communications, 2017.

Fluke: the Math and Myth of Coincidence, a book by Guggenheim Fellow Joseph Mazur, Basic Books, 2016.

Guest Blog Posts and Other Contributions to Online Projects

Karaali, G.; *On Being Imperfect*, guest blog entry for American Mathematical Society Blog on Teaching and Learning Mathematics, <https://blogs.ams.org/matheducation/2018/07/02/on-being-imperfect/>, posted on July 2, 2018.

Karaali, G. (with Marion D. Cohen, Sarah Glaz, and JoAnne Growney); *AWP Roundtable: “1.41421...: A Conversation Among Math Poets”*, <https://sundresspublications.wordpress.com/2018/04/08/awp-roundtable-1-41421-a-conversation-among-math-poets/>, posted on April 8, 2018.

Karaali, G.; *mathematics, bigger on the inside*, contribution to the *Humans of the Academy Project*, <https://humansoftheacademy.com/mathematics-bigger-on-the-inside/>, posted on June 28, 2017.

Karaali, G.; *The Power of Two: Two Tips for Mathematicians*, guest blog entry for American Mathematical Society e-Mentoring Network, <http://blogs.ams.org/mathmentoringnetwork/2016/03/14/the-power-of-two-two-tips-for-mathematicians/> posted on March 28, 2016.

Karaali, G.; *Summer Cleaning: (Digital) Organization Basics for Mathematicians*, guest blog entry for American Mathematical Society e-Mentoring Network, <http://blogs.ams.org/mathmentoringnetwork/2015/05/21/summer-cleaning-digital-organization-basics-for-mathematicians/> posted on May 21, 2015.

Karaali, G.; *Women in Maths: Gizem Karaali*, Contribution to the *Women in Maths Project*, <https://www.facebook.com/womeninmaths/> posted on May 20, 2015.

Karaali, G.; *Math Talk: Preparing Your Conference Presentation*, guest blog entry for American Mathematical Society e-Mentoring Network, <http://blogs.ams.org/mathmentoringnetwork/2014/08/04/math-talk-preparing-your-conference-presentation/> posted on August 4, 2014.

Karaali, G.; *Why You Need a Summer Plan*, guest blog entry for American Mathematical Society e-Mentoring Network, <http://blogs.ams.org/mathmentoringnetwork/2014/05/23/why-you-need-a-summer-plan/> posted on May 23, 2014.

Karaali, G. (with eight other female faculty); *Vocalized: What do you wish you could tell your women students?*, a project of the Pomona College Women’s Union, <http://www.facebook.com/PomonaWomensUnion/albums/10152506914949180/>, posted on April 28, 2014.

Karaali, G.; *The Fundamental Principle of Productivity: What they DON'T teach you in graduate school*, guest blog entry for American Mathematical Society e-Mentoring Network, <http://blogs.ams.org/mathmentoringnetwork/2014/04/07/the-fundamental-principle-of-productivity-what-they-dont-teach-you-in-graduate-school/>, posted on April 7, 2014.

Karaali, G.; *Grandma Got STEM! Selma Karaali and Artemis Karaali*, guest blog entry for GRANDMA GOT STEM, <http://ggstem.wordpress.com/2013/04/11/selma-karaali-and-artemis-karaali/>, posted on April 11, 2013.

Poetry

Karaali, G.; “An Invitation”, poem, in *Bridges 2018 Poetry Anthology*, edited by Sarah Glaz, Tessellations Publishing, 2018, page 67.

Karaali, G.; “Math in Seventeen Syllables”, poem, in *Bridges 2018 Poetry Anthology*, edited by Sarah Glaz, Tessellations Publishing, 2018, page 67.

Karaali, G.; “Naive Set Theory”, poem, in *Bridges 2018 Poetry Anthology*, edited by Sarah Glaz, Tessellations Publishing, 2018, page 68.

Karaali, G.; “A Mother’s Math is Never Done”, poem, first published on *The Sundress Blog*, April 8, 2018, available at <https://sundresspublications.wordpress.com/2018/04/08/>. Republished in the Special Issue on Mathematics and Motherhood of *Journal of Humanistic Mathematics* (Volume 8 Issue 2 (July 2018), pages 308–309).

Karaali, G.; “Math and Metaphor”, poem, in *Bridges 2016 Poetry Anthology*, edited by Sarah Glaz, Tessellations Publishing, 2016, page 60.

Karaali, G.; “A Mathematician’s Villanelle”, poem, *Math Horizons*, Volume 22 Issue 1 (February 2015), page 23. Republished in *Bridges 2016 Poetry Anthology*, edited by Sarah Glaz (Tessellations Publishing, 2016, page 59).

Karaali, G.; “The Colors of Math”, poem, *The Mathematical Intelligencer*, Volume 35 Issue 1 (March 2013), page 4.

Other Writing

Karaali, G.; “Mathematics and Poetry”, *Handbook of the Mathematics of the Arts and Sciences*, edited by Bharath Sriraman (Springer 2021), in preparation.

Karaali, G.; “Japanese Temple Geometry”, *Handbook of the Mathematics of the Arts and Sciences*, edited by Bharath Sriraman (Springer 2021), in preparation.

Karaali, G.; “Mektuplarla Ada Lovelace: Charles Babbage ve Augustus De Morgan Mektupları” (“Ada Lovelace Through Letters: Correspondences with Charles Babbage and Augustus De Morgan” (in Turkish)), submitted.

Huber, M., Karaali, G.; “Math in Seventeen Syllables: An Open Call for Mathematical Haiku”, *Journal of Humanistic Mathematics*, Volume 7 Issue 2 (July 2017), pages 435–436.

Karaali, G.; “Math Education: A Messy Problem”, *Inside Higher Education*, Views, May 3, 2016. Available online at <https://www.insidehighered.com/views/2016/05/02/math-education-deserves-support-and-attention-essay>. Reprinted in the *Vermont Council of Teachers of Mathematics* Newsletter, May 2016, available at http://mathinvermont.blogspot.com/2016_05_01_archive.html.

Karaali, G., Radunskaya, A.; “Collaboration and Creativity in Southern California: An Offering”, *Association for Women in Mathematics Newsletter*, Volume 46 Number 2 (March–April 2016), pages 30–32.

Huber, M., Karaali, G.; “WANTED: Journalists of Humanistic Mathematics”, *Journal of Humanistic Mathematics*, Volume 6 Issue 1 (January 2016), page 307.

Karaali, G.; “What if ... math were not required in K-12 education?”, *Pomona College Magazine*, Fall 2015 (Volume 52 Number 1), pages 2–3.

Karaali, G.; “On Genius, Prizes, and the Mathematical Celebrity Culture”, *The Mathematical Intelligencer*, Volume 37 Issue 3 (2015), pages 61–65.

Karaali, G.; “Can Zombies Do Math?”, in *Mind in Mathematics: Essays on Mathematical Cognition and Mathematical Method*, edited by Mariana Bockarova, Marcel Danesi, Dragana Martinovic and Rafael Núñez, 2015; pages 140–153.

Karaali, G.; “Inspiring Our Daughters: GoldieBlox, Princesses, and Engineers”, *Association for Women in Mathematics Newsletter*, Volume 44 Number 6 (November–December 2014), pages 10–13.

Karaali, G.; “Nesin Math Village: Mathematics as a Revolutionary Act”, *The Mathematical Intelligencer*, Volume 36 Issue 2 (2014), pages 45–49.

Alayont, F., Karaali, G., Pehlivan, L.; “What Does It Take to Teach Nonmajors Effectively?”, *FOCUS* (newsletter of the Mathematical Association of America), Volume 32 Number 6 (2012), pages 11–12.

Karaali, G.; “Can Zombies Do Math? In Defense of Frivolous Questions”, *Pomona College Magazine*, Fall 2012 (Volume 49 Number 1), pages 28–29.

Karaali, G.; “A Tale of Two Workshops: Two Workshops, Three Papers, New Ideas”, *AIMatters* (Newsletter of the American Institute of Mathematics), Autumn 2012, page 11.

Karaali, G.; “Humanistic Mathematics: An Oxymoron?”, *Diversity & Democracy*, a publication of the Association of American Colleges and Universities, Volume 15 Number 2 (Spring 2012), page 21.

Karaali, G.; “In Defense of Frivolous Questions”, *Inside Higher Education*, Views, April 10, 2012. Available online at <http://www.insidehighered.com/views/2012/04/10/essay-defense-courses-ask-seemingly-frivolous-questions>

Karaali, G.; “Have You Seen This...? Journal of Humanistic Mathematics”, *MSOR Connections*, Summer 2011, Volume **11** Number 2 (June 2011), page 43.

Karaali, G.; “Journal of Humanistic Mathematics”, in *Media Highlights, College Mathematics Journal*, Volume **42** Number 3 (May 2011), pages 244–252 (page 247)

Karaali, G., Yoshiwara, B.; “A Different Pencil Too Good to be Ignored? A First Look at Wolfram|Alpha”, *FOCUS* (newsletter of the Mathematical Association of America), Volume **29** Number 5 (2009), page 15.

Bargagliotti, A., Chidambaram, R., Karaali, G.; “Mathematicians Playing a Role in Math Education: What We Learned at the IME/MIME Workshop”, *FOCUS* (newsletter of the Mathematical Association of America), Volume **28** Number 8 (2008), pages 26–27.

Karaali, G.; “What I learned from the MAA Digital Library workshop”, *FOCUS* (newsletter of the Mathematical Association of America), Volume **26** Number 9 (2006), pages 18–19.

AMS Mathematical Reviews

MR3764839 Kahng, Byung-Jay; Van Daele, Alfons, “The Larson-Sweedler theorem for weak multiplier Hopf algebras”. *Comm. Algebra* **46** (2018), no. 1, 1–27.

MR3709781 Hong, Jin; Lee, Hyeonmi, “Rigged configuration descriptions of the crystals $B(\infty)$ and $B(\lambda)$ for special linear Lie algebras”. *J. Math. Phys.* **58** (2017), no. 10, 101701, 24 pp.

MR3632541 Kock, Joachim, “Polynomial functors and combinatorial Dyson-Schwinger equations”. *J. Math. Phys.* **58** (2017), no. 4, 041703, 38 pp.

MR3310684 Yau, Donald, “The classical Hom-Yang-Baxter equation and Hom-Lie bialgebras”. *Int. Electron. J. Algebra* **17** (2015), 11–45.

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- MR2513272 (2010G:17015) Pop, Iulia; Stolin, Alexander, *Classification of quasi-trigonometric solutions of the classical Yang-Baxter equation*. Representation theory, 155–162, Contemp. Math., **478**, Amer. Math. Soc., Providence, RI, 2009.
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- MR2485471 (2010D:17021) Song, Guang'ai; Su, Yucui; Xin, Bin, *Quantization of Hamiltonian-type Lie algebras*. Pacific J. Math. **240** (2009), no. 2, 371–381.
- MR2477581 (2009J:16046) Einstein-Matthews, Stanley; Mohlala, Molobe, *On quantum Yang-Baxter coherent algebra sheaves*. Int. J. Pure Appl. Math. **49** (2008), no. 2, 167–199.
- MR2452175 (2010A:81108) Avan, J.; Zambon, C. *The semi-dynamical reflection equation: solutions and structure matrices*. J. Phys. A **41** (2008), no. 19, 194001, 16 pp.
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- MR2395769 (2009F:16071) Kanakoglou, K.; Daskaloyannis, C. *Graded structure and Hopf structures in parabosonic algebra. An alternative approach to bosonisation*. New techniques in Hopf algebras and graded ring theory, 105–116, K. Vlaam. Acad. Belgie Wet. Kunsten (KVAB), Brussels, 2007.
- MR2389797 (2009E:16078) Shibukawa, Youichi *Dynamical Yang-Baxter maps with an invariance condition*. Publ. Res. Inst. Math. Sci. **43** (2007), no. 4, 1157–1182.
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- MR2351892 (2008J:16123) Laliena, Jess; Sacristan, Sara *Lie structure in semiprime superalgebras with superinvolution*. J. Algebra **315** (2007), no. 2, 751–760.

MR2344579 (2008G:17029) Geer, Nathan *Some remarks on quantized Lie superalgebras of classical type*. *J. Algebra* **314** (2007), no. 2, 565–580.

MR2322791 (2008D:17019) Groza, Valentyna A. *Degenerate series representations of the q -deformed algebra $so'_q(r, s)$* . *SIGMA Symmetry Integrability Geom. Methods Appl.* **3** (2007), Paper 064, 12 pp. (electronic).

MAA Book Reviews

Scholarly reviews of recently published mathematics books chosen by the MAA Reviews editor (online at <http://www.maa.org/publications/maa-reviews>).

Experiencing Mathematics: What do we do, when we do mathematics? by Reuben Hersh (January 2015)

Shaping Space: Exploring Polyhedra in Nature, Art, and the Geometrical Imagination edited by Marjorie Senechal (December 2013)

5 Elements of Effective Thinking by Edward Burger and Michael Starbird (April 2013)

Topics in Physical Mathematics by Kishore Marathe (August 2012)

Thinking Mathematically by John Mason, Leone Burton, and Kaye Stacey (September 2011)

Algebra by Michael Artin (March 2011)

Algebra Word Problems by Izolda Fotiyeva (February 2011)

Unitary Reflection Groups by Gustav I. Lehrer and Donald E. Taylor (October 2010)

Mirrors and Reflections: The Geometry of Finite Reflection Groups by Alexandre V. Borovik and Anna Borovik (May, 2010)

Applied Algebra: Codes, Ciphers, and Discrete Algorithms by Darel W. Hardy, Fred Richman, and Carol L. Walker (January 2010)

On the Study and Difficulties of Mathematics by Augustus De Morgan (December 2009)

Linear Algebra: A Geometric Approach by Ted Shifrin and Malcolm Adams (October 2009)

Symmetries and Laplacians: Introduction to Harmonic Analysis, Group Representations and Applications by David Gurarie (June 2009)

An Invitation to Quantum Groups and Duality: From Hopf Algebras to Multiplicative Unitaries and Beyond by Thomas Timmermann (May 2009)

The Geometry and Topology of Coxeter Groups by Michael W. Davis (April 2009)

Geometric Combinatorics edited by Ezra Miller, Victor Reiner and Bernd Sturmfels (January 2009)

Elements of the Representation Theory of Associative Algebras 3: Representation-Infinite Tilted Algebras by Daniel Simson and Andrzej Skowronski (September 2008)

Geometric Algebra for Physicists by Chris Doran and Anthony Lasenby (July 2008)

Elements of the Representation Theory of Associative Algebras II: Tubes and Concealed Algebras of Euclidean Type by Daniel Simson and Andrej Skowronski (April 2008)

A (Terse) Introduction to Linear Algebra by Yitzhak Katznelson and Yonatan R. Katznelson (March 2008)

Vector Calculus, Linear Algebra, and Differential Forms: A Unified Approach by John H. Hubbard and Barbara Burke Hubbard (December 2007)

Projective and Cayley-Klein Geometries by Arkady L. Onishchik and Rolf Sulanke (November 2007)

Modern Geometric Structures and Fields by Sergei P. Novikov and Iskander A. Taimanov (August 2007)

Mathematics and Culture IV and V edited by Michele Emmer (May 2007)

Spaces of Constant Curvature by Joseph A. Wolf (March 2007)

Invariant Subspaces of Matrices with Applications by Israel Gohberg, Peter Lancaster and Leiba Rodman (January 2007)

Elements of the Representation Theory of Associative Algebras I: Techniques of Representation Theory by Ibrahim Assem, Daniel Simson and Andrej Skowronski (December 2006)

Calculus: Single Variable by Brian E. Blank and Steven G. Krantz (October 2006)

Calculus: Multivariable by Brian E. Blank and Steven G. Krantz (July 2006)

Actions and Invariants of Algebraic Groups by Walter Ferrer Santos and Alvaro Rittatore (May, 2006)

Signal Processing: A Mathematical Approach by Charles L. Byrne (April, 2006)

Lie Groups, Lie Algebras, and Representations: An Elementary Introduction by Brian C. Hall (January 2006)

The Nuts and Bolts of Proofs by Antonella Cupillari (November 2005)

Using Algebraic Geometry by David A. Cox, John Little, and Donald O'Shea (September 2005)

Visual Linear Algebra: With Maple and Mathematica Tutorials by Eugene A. Herman and Michael D. Pepe (August 2005)

Computers, Rigidity, and Moduli: The Large-Scale Fractal Geometry of Riemannian Moduli Space by Shmuel Weinberger (May 2005)

The Nature and Power of Mathematics by Donald M. Davis (March 2005)

PROFESSIONAL PRESENTATIONS

SEMINAR, COLLOQUIUM, CONFERENCE, AND WORKSHOP TALKS¹

UPCOMING: “*Constructing Integrable Systems From Graded Classical r -Matrices*”, AMS Special Session on Representations of Lie algebras, algebraic groups, and quantum groups, AMS Spring Southeastern Sectional Meeting, Auburn, AL; (03/2019)

“*Lights Out! and Other Mechanical Puzzles: Fun Ways to Enter Research With Students*”, Research Experiences for Undergraduate Faculty (REUF 2018), American Institute for Mathematics (AIM), San Jose, CA; (06/2018)

“*Humanistic Mathematics*”, Research Experiences for Undergraduate Faculty (REUF 2018), American Institute for Mathematics (AIM), San Jose, CA; (06/2018)

“*Defining Ada: On The Legacy of Augusta Ada Byron King Lovelace*”; Claremont History and Philosophy of Mathematics Seminar; Claremont, CA (04/2018)

“*Languages, Alphabets, and Group Theory (OR a Group-Theoretic Example of the Unreasonable Effectiveness of Mathematics)*”; Undergraduate Mathematics Colloquium, University of North Texas; Denton, TX (02/2018)

“*Can Zombies Do Math? OR Humanism as a Philosophy of Mathematics*”; Millican Colloquium, University of North Texas; Denton, TX (02/2018)

“*Ada’s Poetic Science: Correspondences of Ada Lovelace and Charles Babbage*”; AMS Special Session on History of Mathematics, (Joint Mathematics Meeting JMM 2018), San Diego, CA; (01/2018)

“*Can Zombies Do Math? OR Humanism as a Philosophy of Mathematics*”; Budapest Semesters in Mathematics Colloquium; Budapest, HUNGARY (06/2017)

“*Can Zombies Do Math? OR Humanism as a Philosophy of Mathematics*”; California Polytechnic University San Luis Obispo Colloquium and AWM Student Chapter Talk; San Luis Obispo, CA (05/2017)

“*Can Zombies Do Math? OR Humanism as a Philosophy of Mathematics*”; CMC³ Recreational Math Conference; Lake Tahoe, CA (04/2017)

¹This list excludes seminar, colloquium, conference, and workshop talks that focus on pedagogy and mathematics education; those are listed separately in what follows.

- “*Supercharacters and their Superpowers*”; Discrete Mathematics Seminar, University of British Columbia; Vancouver, BC; (10/2016)
- “*Languages, Alphabets, and Group Theory*”, Claremont Center for the Mathematical Sciences (CCMS) Algebra-Number Theory-Combinatorics Seminar, Claremont, CA; (04/2016)
- “*Can Zombies Do Math? OR Humanism as a Philosophy of Mathematics*”; California State University San Bernardino Mathematics Colloquium; (02/2016)
- “*Can Zombies Write Mathematical Poetry? Mathematical poetry as a model for humanistic mathematics*”, AMS Special Session on Humanistic Mathematics, AMS Fall Western Sectional Meeting, Fullerton, CA; (10/2015)
- “*Can Zombies Write Mathematical Poetry? Mathematical poetry as a model for humanistic mathematics*”, Bridges 2015 Mathematics and the Arts Conference, Baltimore, MD; (08/2015)
- “*Can Zombies Do Math? OR Humanism as a Philosophy of Mathematics*”; University of California Irvine Undergraduate Mathematics Colloquium; (05/2015)
- “*Can Zombies Do Math? OR Humanism as a Philosophy of Mathematics*”; University of California Riverside AWM Chapter & Math Club Colloquium; (05/2015)
- “*Can Zombies Do Math? OR Humanism as a Philosophy of Mathematics*”; Claremont Center for the Mathematical Sciences Colloquium; (02/2015)
- “*School Choice as a One-Sided Matching Problem: Cardinal Utilities and Optimization*”; AMS Special Session on Graphs, matrices, and other related problems, (Joint Mathematics Meeting JMM 2015), San Antonio, TX; (01/2015)
- “*Quantization and superization: Making new stars from old moons*”; International Congress for Mathematicians, Seoul, South Korea; (08/2014)
- “*Supercharacters and their Superpowers*”; 6TH Annual Women in Mathematics Symposium, Riverside, CA; (10/2013)
- “*Supercharacters and Exponential Sums*”; AMS Special Session on Combinatorial Avenues in Representation Theory, (Spring Western Sectional Meeting of the American Mathematical Society #1089), Boulder, CO; (04/2013)
- “*How HOT is your geometry? A Tropical Excursion*”; Claremont Center for the Mathematical Sciences Algebra-Number Theory-Combinatorics Seminar; (02/2013)
- “*Quantization and Superization*”; AWM (Association of Women in Mathematics) Speaker Series, University of California San Diego; La Jolla, CA; (05/2012)
- “*Supercharacters and their Superpowers*”, Claremont Center for the Mathematical Sciences (CCMS) Algebra-Number Theory-Combinatorics Seminar, Claremont, CA; (04/2012)

“*A Cost-Minimizing Algorithm for School Choice*”, Special Session on Computational Social Choice, International Symposium on Artificial Intelligence and Mathematics (ISAIM 2012), January 9-11, 2012, Fort Lauderdale, FL; (01/2012)

“*Constructing Integrable Systems From Graded Classical r -Matrices*”, AMS Special Session on Mathematical Principles and Theories of Integrable Systems, (Joint Mathematics Meeting JMM 2012), Boston, MA; (01/2012)

“*Coalitions and Cliques in the School Choice Problem*”, AMS Special Session on the Mathematics of Decisions, Elections, and Games, (Joint Mathematics Meeting JMM 2012), Boston, MA; (01/2012)

“*Quantization and Superization*”; California State University San Bernardino Mathematics Colloquium; (10/2011)

“*Quantization and Superization*”; Claremont Center for the Mathematical Sciences Colloquium; (09/2011)

“*Solving the Yang-Baxter equations over Lie superalgebras*”, Seventh International Conference on Quantum Theory and Symmetries (QTS-7), Prague, Czech Republic; (08/2011)

“*Quantization and Superization*”; California State University Dominguez Hills Mathematics Colloquium; (04/2011)

“*How HOT is your geometry? A Tropical Excursion*”; Fullerton College Mathematics Colloquium; (03/2011)

“*Classical Kloosterman sums: Representation theory, magic squares, and Ramanujan multigraphs*”; Claremont Center for the Mathematical Sciences Algebra-Number Theory-Combinatorics Seminar, Claremont, CA; (02/2011)

“*On Multigraded combinatorial Hopf algebras*”; AMS Special Session on Hopf algebras and their representations (Joint Mathematics Meeting JMM 2011), New Orleans, LA; (01/2011)

“*So what is a combinatorial Hopf algebra and what can you do with it?*”; 3RD Annual Women in Mathematics Symposium, Claremont, CA; (11/2010)

“*Combinatorial Hopf algebras: A Common Playground for Algebra and Combinatorics*”; Claremont Center for the Mathematical Sciences Algebra-Number Theory-Combinatorics Seminar, Claremont, CA; (09/2010)

“*Quantization and Superization*”; Boğaziçi University Mathematics Colloquium, Istanbul, Turkey; (03/2010)

“*On the quantization of zero-weight super dynamical r -matrices*” AMS Special Session on Algebraic Structures in Knot Theory (Fall Western Sectional Meeting of the American Mathematical Society #1054), Riverside, CA; (11/2009)

- “*Yang-Baxter equations and quantum groups*”; California State Polytechnic University Pomona, Spring Mathematics Colloquium; (05/2008)
- “*On Hopf algebras and their generalizations*” International Workshop on Lie Theory and Its Applications in Physics, Varna, Bulgaria; (06/2007)
- “*Algebra for the quantum world*”; California State University San Bernardino Mathematics Colloquium; (05/2007)
- “*A Beginner’s Guide to Hopf Algebras*”; Southeastern Louisiana University Algebra Seminar; (04/2007)
- “*Algebra for the quantum world*”; Southeastern Louisiana University Mathematics Colloquium; (04/2007)
- “*Algebra for the quantum world*”; California State University Dominguez Hills Mathematics Colloquium; (03/2007)
- “*A Beginner’s Guide to Hopf Algebras*”; Claremont Colleges Algebra / Combinatorics Seminar; (02/2007)
- “*Algebra for the quantum world*”; California State University Los Angeles Mathematics Colloquium; (01/2007)
- “*On Generalizations of Hopf algebras*” Workshop on Representation Theory and Geometry, Berkeley, CA; (05/2006)
- “*Yang-Baxter equations and quantum groups*”; University of Southern California Math Talks for Women in Mathematics; (04/2006)
- “*Super solutions of the Yang-Baxter equations*”; University of California Riverside Lie Theory Seminar; (02/2006)
- “*Yang-Baxter equations and their super solutions*”; University of Arkansas Mathematics Colloquium; (02/2006)
- “*Yang-Baxter equations and their super solutions*”; University of Hawaii Mathematics Colloquium; (02/2006)
- “*Algebra for the quantum world*”; Pomona College Special Mathematics Talk; Claremont, CA; (02/2006)
- “*Algebra for the quantum world*”; Vassar College Mathematics Colloquium; Poughkeepsie, NY; (02/2006)
- “*Yang-Baxter equations and their super solutions*”; North Dakota State Mathematics Colloquium; (01/2006)
- “*The road to super quantum groups*”; AWM Workshop for Women Graduate Students and Recent Ph.D.’s, San Antonio, TX; (01/2006)

- “*Algebra for the quantum world*”; Colby College Mathematics Colloquium; Waterville, ME; (12/2005)
- “*Yang-Baxter equations and their super solutions*”; Georgia Tech (Georgia Institute of Technology) Algebra-Geometry-Topology Seminar; (11/2005)
- “*What should a dynamical super quantum group be?*”; Southern California Algebra Conference; (11/2005)
- “*Algebra for the quantum world - A basic introduction to quantum groups*”; California State University Channel Islands Mathematics Graduate Seminar; (09/2005)
- “*The road to super quantum groups*”; Boğaziçi University Mathematics Colloquium, Istanbul, Turkey; (07/2005)
- “*Dynamical quantum groups—The super story*”; Antalya Algebra Days VII (18–22 May 2005), Antalya, Turkey; (05/2005)
- “*Symmetries and matrices - An elementary introduction to representation theory*”; University of California Santa Barbara Undergraduate Linear Algebra Seminar; (05/2005)
- “*Super solutions of the dynamical Yang-Baxter equation*”; Geometric Representation Theory, Tucson, AZ; (03/2005)
- “*On the classification of finite-type cluster algebras*”; University of California Santa Barbara Algebra Seminar; (02/2005)
- “*Combinatorics in representation theory II*”; University of California Santa Barbara Combinatorics and Discrete Geometry Seminar; (02/2005)
- “*Combinatorics in representation theory I*”; University of California Santa Barbara Combinatorics and Discrete Geometry Seminar; (12/2004)
- “*Super Lie bialgebra structures*”; University of California Santa Barbara (UCSB) Algebra Seminar; (11/2004)
- “*A new Lie bialgebra structure on $sl(2, 1)$* ”; AMS Special Session on Hopf Algebras at the Crossroads of Algebra, Category Theory, and Topology (Fall Central Sectional Meeting of the American Mathematical Society #1001), Evanston, IL; (10/2004)
- “*How to construct an r -matrix on a Lie superalgebra*”; AMS-IMS-SIAM Summer Research Conference on Representations of Algebraic Groups, Quantum Groups and Lie Algebras, Snowbird, UT; (07/2004)
- “*Constructing r -matrices on Lie superalgebras*”; University of California Santa Barbara (UCSB) Algebra Seminar; (02/2004)
- “ *r -matrices on Lie superalgebras*”; University of Southern California (USC) Algebra Seminar; (10/2003)

“*Constructing r -matrices on Lie superalgebras*”; Workshop on Lie Groups, Lie Algebras and Their Representations, Santa Barbara, CA; (10/2003)

(with Milen Yakimov): “*A Short course on Poisson-Lie groups*”; a short course / series of four lectures; University of California Berkeley Seminar on Representations of Lie Groups; (04/2001)

“*Basic Facts on Weakly Symmetric Spaces*”; University of California Berkeley Seminar on Representations of Lie Groups; (10/2000)

EXPOSITION FOR GENERAL AUDIENCES

“*Weird Geometry: On Doughnuts and Coffee Mugs*”; Claremont Gateway to Exploring the Mathematical Sciences (GEMS) Program, Claremont Math Circle workshop for local high school students; (12/2014)

“*Strange Geometry: On Doughnuts and Coffee Mugs*”; A Workshop with Math Olympians (outreach / enrichment activity for grades 3-8); Alta Loma Christian School; Rancho Cucamonga, CA; 03/2013

“*How HOT is your geometry? A Tropical Excursion*”; Claremont Gateway to Exploring the Mathematical Sciences (GEMS) Program, Claremont Math Circle workshop for local high school students; (04/2011)

“*How HOT is your geometry? A Tropical Excursion*”; an interactive presentation for Üsküdar Amerikan Lisesi (Üsküdar American High School) Mathematics Club, Istanbul, Turkey; (04/2010)

“*How HOT is your geometry? A Tropical Excursion*”; an interactive presentation for Pomona College alumni/ae, University of California Berkeley Faculty Club; (12/2009)

POSTER PRESENTATIONS

“*Whose Math and For What Purpose? A Community Seminar on Identity, Culture, and Mathematics*”, 2018 Southern California PKAL Regional Network Annual Meeting, Los Angeles, CA; (03/2018)

“*All The Math You Need: An Investigation into the Curricular Boundaries of Mathematical Literacy*”,² 20th Annual Conference on Research on Undergraduate Mathematics Education (RUME 2017), San Diego, CA; (02/2017)

“*Purpose and humanism in mathematics education research*”, International Congress for Mathematicians, Seoul, South Korea; (08/2014)

²This poster was previously accepted for ICME 2016, the 13th International Congress on Mathematical Education, July 24-July 30, 2016, Hamburg, Germany. I was unable to attend due to lack of sufficient funding.

“*On Hopf Algebras and Their Generalizations*”; CRM Workshop on Combinatorial Hopf Algebras and Macdonald Polynomials, Montreal, Quebec; (05/2007)

“*On Generalizations of Hopf algebras*”; Project NExT/Young Mathematician’s Network Poster Session, Joint Mathematics Meetings, New Orleans, LA; (01/2007)

“*r-matrices on Lie superalgebras*”; AWM Workshop for Women Graduate Students and Recent Ph.D.’s, Phoenix, AZ; (01/2004)

PRESENTATIONS ON PEDAGOGY AND MATHEMATICS EDUCATION

“*Whose Math and For What Purpose? A Community Seminar on Identity, Culture, and Mathematics*”; Minisymposium on Mathematics and Social Justice in the Classroom, SIAM Conference on Applied Mathematics Education (ED18); Portland, OR (07/2018)

“*Creating, Scaffolding, and Teaching Writing: The Teacherless Writing Class*”, Pomona College ID1 (First-Year Critical Inquiry Seminar) Workshop, Claremont, CA; (05/2018)

“*On Zombies, The Republic, and Mathematics: Teaching First-Year Seminars That Humanize Mathematics*”, MAA Contributed Paper Session on Mathematical Themes in a First-Year Seminar, Joint Mathematics Meetings, San Diego, CA; (01/2018)

“*On Utilitarian and Aesthetic Goals of Mathematics Education: Quantitative Literacy and Humanistic Mathematics*”, MAA Invited Paper Session on New Directions in Quantitative Literacy for General Education, in honor of Lynn Steen, Joint Mathematics Meetings 2017, Atlanta, GA; (01/2017)

“*Formative Assessment with a Purpose: From Philosophical Considerations to Pragmatic Implementation*”, MAA Contributed Paper Session on Formative Assessment Techniques for Undergraduate Math Courses, MathFest, Columbus, OH; (08/2016)

“*Why Should Mathematicians Care?*”; Conference on Research in Undergraduate Mathematics Education, Equity Working Group; Pittsburgh, PA; (02/2016)

“*Defining Quantitative Literacy Through College-Level Textbooks—A Preliminary Report*”, MAA Contributed Paper Session on Research in Undergraduate Mathematics Education, Joint Mathematics Meetings, Seattle, WA; (01/2016)

(with Lily Khadjavi): “*Mathematics and Social Justice: Perspectives and Resources for the College Classroom*”, MAA Contributed Paper Session on Democratizing Access to Authentic Mathematical Activity, MathFest, Washington DC; (08/2015)

(with Travis Brown): “*Writing with Numbers*”, Pomona College ID1 (First-Year Critical Inquiry Seminar) Workshop, Claremont, CA; (05/2015)

“*Build Your Own Fractal*”, Hands On Learning Workshop in honor of Katherine Hagedorn, Pomona College, Claremont, CA; (02/2014)

“*Math with a Conscience?*” 2013 Annual Meeting and Exposition of the National Council of Teachers of Mathematics, Denver, CO; (04/2013)

“*A Humanistic Reading Component For An Introduction to Proofs Course*”; MAA Contributed Paper Session on Bridging The Gap: Designing an Introduction to Proofs Course, Joint Mathematics Meetings, San Diego, CA; (01/2013)

“*A Humanistic Reading Component in a Transitional Mathematics Course*”, Scholar Session, International Institute for SoTL Scholars and Mentors (IISSAM), Loyola MaryMount University, Los Angeles, CA; (06/2012)

“*Purpose and Humanism in Mathematics Education Research 1968-1996*”, History and Pedagogy of Mathematics (HPM) Americas West Coast Section Meeting October 1-2, 2011, San Diego, CA; (10/2011)

“*Bloom Takes Calculus: Higher-Level Tasks for Your Calculus Courses*”, 2011 Annual Meeting and Exposition of the National Council of Teachers of Mathematics, Indianapolis, IN; (04/2011)

“*Bloom’n Calculus: Higher Level Tasks for Your Calculus Class*”, Workshop aimed for K-12 mathematics teachers, 51st Annual Meeting of the California Mathematics Council-South, Palm Springs, CA; (11/2010)

“*An Evaluative Calculus Project: Applying Bloom’s Taxonomy to the Calculus Classroom*”; MAA General Contributed Paper Session, Joint Mathematics Meetings, San Francisco, CA; (01/2010)

(with Robert Baker): “*Math Digital Library Workshop*”; Workshop aimed for K-12 mathematics teachers, 49th Annual Meeting of the California Mathematics Council-South, Palm Springs, CA; (11/2008)

An “*Unreasonable*” Reading Component to a Reasonable Course: Readings for a Transitional Class; MathFEST 2008 - Contributed Paper Session on Incorporating the Humanities and the Arts into the Mathematics Classroom (and Vice Versa), Madison, WI; (08/2008)

(with Robert Baker): “*Math Digital Library Workshop*”; MAA Southern California/Nevada Section Spring 2007 Meeting, Claremont, CA; (03/2007)

“*What does that mean? Helping Upper Division Students Understand Concepts*”; 3rd International Conference on the Teaching of Mathematics (ICTM3), Istanbul, Turkey; (06/2006)

“*Word problems and quantitative literacy*”; MathFEST 2005 - General Contributed Paper Session, Albuquerque, NM; (08/2005)

PANEL PRESENTATIONS

UPCOMING: Panelist at the Project NExT panel titled “Productive failure: What can we learn from our teaching mistakes?”, Joint Mathematics Meeting 2019, Baltimore, MD;

(01/2019)

UPCOMING: Panelist at the PIMS-Math Job Forum for Postdoctoral Fellows and Graduate Students, University of British Columbia, Vancouver, BC; (10/2018)

Panelist at the MAA panel titled “*Ethics, Morality and Politics in the Quantitative Literacy Classroom*,” Joint Mathematics Meeting 2018, San Diego, CA; (01/2018)

Panelist at the Budapest Semesters in Mathematics Summer 2017 panel on Women in Mathematics, Budapest, HUNGARY; (06/2017)

Panelist at the Budapest Semesters in Mathematics Summer 2017 panel on Graduate School, Budapest, HUNGARY; (06/2017)

Panelist at the AMS / MAA panel titled “*Women and Scholarly Publishing*,” Joint Mathematics Meeting 2017, Atlanta, GA; (01/2017)

Panelist at the MAA panel titled “*Refocusing Your Career: Making Time and Space*,” Joint Mathematics Meeting 2017, Atlanta, GA; (01/2017)

Panelist at the PIMS-Math Job Forum for Postdoctoral Fellows and Graduate Students, University of British Columbia, Vancouver, BC; (10/2016)

Panelist at the Project NExT panel titled “*Teaching Introductory Proofs Courses*,” MathFest 2015, Washington DC; (08/2015)

Panelist at the MAA panel titled “*Mathematicians Write: Publishing Options and Outlets Beyond the Standard Research Journal*,” Joint Mathematics Meeting 2015, San Antonio, TX; (01/2015)

Panelist at the MAA panel titled “*Open Access Publishing in Mathematics: Who?, What?, Where?, Why?, and How?*,” MathFest 2014, Portland, OR; (08/2014)

Panelist at the Project NExT panel titled “*Independent Study Courses*,” MathFest 2014, Portland, OR; (08/2014)

Panelist at the AMS panel titled “*Proving Hardy Wrong: Math Research with Social Justice Applications*”; Joint Mathematics Meetings 2011, New Orleans, LA; (01/2011)

Panelist at the MAA panel titled “*Mathematical culture and mathematical life*”; Joint Mathematics Meetings 2011, New Orleans, LA; (01/2011)

Panelist at the U.C. Berkeley Mathematics Career Talks seminar titled “*A mathematical career at a liberal arts college*”; Berkeley, CA; (10/2009)

Panelist at the TLC-ITS co-sponsored luncheon on 2007 Hahn Teaching with Technology Grants; Pomona College; (03/2008)

Panelist at the Mathematical Sciences Research Institute *Connections for Women Workshop* panel titled “*Three Things I Wish I Knew Then*”; Berkeley, CA; (01/2008)

OTHER PRESENTATIONS

Lights Out! and Other Mechanical Puzzles: Fun Ways to Enter Research With Students, Research Experiences for Undergraduate Faculty (REUF 2018) (**Workshop team leader**), American Institute for Mathematics (AIM), San Jose, CA; (06/2018)

MAA Workshop on Writing Pedagogical and Expository Papers, 2018 Joint Mathematics Meetings; San Diego, CA; (01/2018)

(with Mark Huber) A Roundtable Discussion on Open Access (OA) and Open Educational Resources (OER), University of Redlands, CA; (11/2017)

“*Math and Poetry*”; lunch conversation with Budapest Semesters in Mathematics Students, Budapest, HUNGARY; (06/2017)

“*My Mathematical Journey*”; lunch conversation with Pomona Scholars in Mathematics, Claremont, CA; (04/2017)

“*Humanistic Mathematics: What You Should Know*”; California Mathematics Council Community Colleges (CMC³) South Spring 2016 Conference, Pomona, CA; (03/2016)

“*Education and its Discontents (and what math’s got to do with it)*”, Special Interest Lecture, Pomona College Family Weekend, (02/2016)

Poetry, in the mathematical podcast *Relatively Prime*, posted January 28, 2016.

Poetry: “A Mathematician’s Villanelle” (*Math Horizons*, 22:1, p. 23), public reading during the Creative Writing in Mathematics and Science workshop held at the Banff International Research Station in Banff, Calgary, (01/2016)

MAA Minicourse on Humanistic Mathematics, a two-session workshop; the 2016 Joint Mathematics Meetings; Seattle, WA; (01/2016)

(with Mark Huber) “*Humanistic Mathematics: A Philosophy, a Journal, and a Community*”, Claremont Discourse Lecture, Claremont Colleges Library, Claremont, CA; (11/2015)

Poetry, at the special mathematical poetry reading for Bridges 2015 Mathematics and the Arts Conference, Baltimore, MD, (08/2015)

Working with Writing Interns, a panel, Pomona College: ID1 (First-Year Critical Inquiry Seminar) Workshop (05/2015)

How I Write, a presentation with a Q&A session, facilitated by Pomona College Writing Center, Claremont, CA; (03/2015)

MAA Minicourse on Humanistic Mathematics, a two-session workshop; the 2015 Joint Mathematics Meetings; San Antonio, TX; (01/2015)

“*Humanism as a Philosophy of Mathematics?*”, a presentation for the Core Math & Philosophy Program of Concordia University Irvine, CA; (10/2014)

“*The Genius as a Characterization of the Creative Spirit in Mathematics and the Arts*”, Bridges 2014 Mathematics and the Arts Conference, Seoul, South Korea; (08/2014)

“*Defining humanistic mathematics through personal experience*”, Thematic Program on Teaching, Learning, Living Mathematics Humanistically; Fields Mathematics Education Forum; Fields Institute, Toronto, Canada; (03/2014)

(with Johanna Hardin and Samantha Hill’14): “*Bridging 6th Street: Math and the Humanities*”, Phi Beta Kappa Lectures 2013-2014, Pomona College, CA; (02/2014)

“*Humanism as a Philosophy of Mathematics?*”, a presentation for the Core Math & Philosophy Program of Concordia University Irvine, CA; (02/2014)

“*Can zombies do math?*”, Special Interest Lecture, Pomona College Family Weekend, (02/2014)

MAA Minicourse on Humanistic Mathematics, a two-session workshop; the 2014 Joint Mathematics Meetings; Baltimore, MD; (01/2014)

Excerpts from short story “A Mathematician’s Dilemma” and a recently published poem “The Colors of Math” (The Mathematical Intelligencer 35:1, p. 4), public reading during the Creative Writing in Mathematics and Science workshop held at the Banff International Research Station in Banff, Calgary, (11/2013)

“*MATH is FUN! (aka pick me!!!)*” representing the math department at *Pomona College: The Baccalaureate*, Pomona Student Union Event; (10/2013)

“*Can zombies do math?*”, Pomona College Alumni Event, Descanso Gardens, La Canada, CA; (08/2013)

Research Experiences for Undergraduate Faculty (REUF 5) (**Workshop team leader**), Institute for Computational and Experimental Research in Mathematics (ICERM), Providence, RI; (07/2013)

“*The Brave New World of Open Access and Creative Commons: A Humanistic Experiment in Mathematical Publishing*”; AMS Special Session on Topics and Issues in Electronic Publishing, Joint Mathematics Meetings, San Diego, CA; (01/2013)

“*Productivity and Time Management: A Mini-Workshop*”, Workshop for EDGE 2012 (Enhancing Diversity in Graduate Education), Claremont, CA, (06/2012)

“*Math with a Social Conscience?*”, Pomona College Division II Science Lunch Talk, Claremont, CA; (04/2012)

“*Can zombies do math?*”, Special Interest Lecture, Pomona College Family Weekend, Claremont, CA; (02/2012)

“*Proving Hardy Wrong: Math With a Social Conscience*”, Invited Lecture, CMC Atul Vyas Memorial Lectures, November 8, 2011; Claremont, CA; (11/2011)

“*Humanistic Mathematics: Charting a Path Toward a New Transdiscipline*”, Facilitated discussion at the AAC&U Network for Academic Renewal Conference: *Arts & Humanities: Toward a Flourishing State?*, Providence RI, November 3-5, 2011; (11/2011)

(with Mark Huber): “*Journal of Humanistic Mathematics*”, A live web interview, Math 2.0 Special Interest Group (an international network of researchers, educators, families, community leaders and technology enablers); (5//2011)

“*Humanistic Mathematics: A Journal, A Philosophy, A Community?*”; **Invited Keynote Address** for the Thematic Program on Humanistic Mathematics, Fields Mathematics Education Forum; Fields Institute, Toronto, Canada; (11/2010)

“*Writing Mathematics*”; Workshop aimed for Summer REU students participating in the Claremont 2010 REU program, Claremont, CA; (07/2010)

TEACHING

COURSES TAUGHT (AT POMONA COLLEGE)

ID1: <i>Critical Inquiry Seminar</i>	Fall 2018
Math 174: <i>Abstract Algebra II - Representation Theory</i>	Fall 2018
ID1: <i>Critical Inquiry Seminar</i>	Fall 2017
Math 174: <i>Abstract Algebra II - Representation Theory</i>	Fall 2017
Math 1: <i>Mathematics, Philosophy, and the Real World</i>	Spring 2017
Math 60: <i>Introduction to Linear Algebra</i>	Spring 2017
ID1: <i>Critical Inquiry Seminar</i> , Pomona College	Fall 2016
Math 171: <i>Abstract Algebra I - Groups and Rings</i>	Fall 2016
Math 101: <i>Introduction to Analysis</i>	Spring 2016
ID1: <i>Critical Inquiry Seminar</i> , Pomona College	Fall 2015
Math 30: <i>Calculus I</i> (two sections)	Fall 2015
Math 1: <i>Mathematics, Philosophy, and the Real World</i>	Spring 2015
Math 174: <i>Abstract Algebra II - Representation Theory</i>	Spring 2015
ID1: <i>Critical Inquiry Seminar</i> , Pomona College	Fall 2014
Math 101: <i>Introduction to Analysis</i>	Fall 2014
ID1: <i>Critical Inquiry Seminar</i> , Pomona College	Fall 2013
Math 171: <i>Abstract Algebra I - Groups and Rings</i>	Fall 2013
Math 1: <i>Mathematics, Philosophy, and the Real World</i>	Spring 2013
Math 60: <i>Introduction to Linear Algebra</i>	Spring 2013
Math 30: <i>Calculus I</i>	Spring 2012
Math 60: <i>Introduction to Linear Algebra</i>	Spring 2012

ID1: <i>Critical Inquiry Seminar</i> , Pomona College	Fall 2011
Math 30: <i>Calculus I</i>	Fall 2011
Math 101: <i>Introduction to Analysis</i>	Spring 2011
Math 174: <i>Abstract Algebra II - Representation Theory</i>	Spring 2011
Math 101: <i>Introduction to Analysis</i>	Fall 2010
Math 171: <i>Abstract Algebra I - Groups and Rings</i>	Fall 2010
Math 101: <i>Introduction to Analysis</i>	Fall 2008
Math 30: <i>Calculus I</i> (two sections)	Fall 2008
Math 174: <i>Abstract Algebra II - Representation Theory</i>	Spring 2008
Math 60: <i>Linear Algebra</i>	Spring 2008
Math 171: <i>Abstract Algebra I - Groups and Rings</i>	Fall 2007
Math 32: <i>Calculus III</i>	Fall 2007
Math 60: <i>Linear Algebra</i>	Spring 2007
Math 32: <i>Calculus III</i>	Spring 2007
Math 60: <i>Linear Algebra</i>	Fall 2006
Math 32: <i>Calculus III</i>	Fall 2006

INDEPENDENT STUDY COURSES

Ahmed Al Fared (CGU): <i>Quasigroups and Their Structure Theory</i>	Spring 2017
Ahmed Al Fared (CGU): <i>Characters and Supercharacters of the Symmetric Groups</i>	Fall 2016
Samuel Yih: <i>Characters and Supercharacters of the Symmetric Groups</i>	Fall 2016
Ahmed Al Fared (CGU): <i>Representation Theory of Finite Groups</i>	Spring 2016
Ahmed Al Fared (CGU): <i>Representation Theory of Finite Groups</i>	Fall 2015
Jeremy Alexander Taylor: <i>Defining Quantitative Literacy</i>	Fall 2014
Amy Shoemaker: <i>Rethinking Algebra: A Middle School Math Curriculum</i>	Spring 2014
Gabrielle Badie: <i>Sports Ranking Analysis: A Study</i>	Spring 2012
Jacob Brumbaugh-Smith: <i>Applications of Lie Groups to Differential Equations</i>	Spring 2012
Ian Zhang: <i>Humanistic Mathematics</i>	Spring 2012
Karin Tannaka: <i>Introduction to Abstract Algebra</i>	Fall 2008

COMMUNITY SEMINARS FACILITATED (AT POMONA COLLEGE)

<i>Whose Math and For What Purpose: On Identity, Culture, and Mathematics</i>	Spring 2018
<i>A Teacherless Writing Class a la Peter Elbow</i>	Spring 2017

COURSES TAUGHT (AT THE CLAREMONT GRADUATE UNIVERSITY)

In Spring 2014, I was invited to develop and teach a graduate course on humanistic mathematics at the Claremont Graduate University, with support from a CGU BLAIS grant.

TRND 405E: <i>Humanistic Mathematics</i>	Fall 2014
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COURSES TAUGHT (AT THE UNIVERSITY OF CALIFORNIA SANTA BARBARA)

Math 5A: <i>Introduction to Linear Algebra and Differential Equations</i> ,	Spring 2006
Math 8: <i>A Transition to Higher Mathematics</i> ,	Winter 2006
Math 108A: <i>Introduction to Linear Algebra</i> ,	Fall 2005
Math 34B: <i>Calculus for Social and Life Sciences - II</i> ,	Fall 2005
Math 117: <i>Methods of Analysis</i> ,	Spring 2005
Math 34B: <i>Calculus for Social and Life Sciences - II</i> ,	Winter 2005
Math 34A: <i>Calculus for Social and Life Sciences - I</i> (two sections)	Fall 2004

COURSES TAUGHT (AT THE UNIVERSITY OF CALIFORNIA BERKELEY)

For eight terms, I led discussion sessions as a Graduate Student Instructor in Calculus, Discrete Mathematics, Linear Algebra and Differential Equations. I also served as a Head GSI, resolving enrollment problems for hundreds of students each semester. I taught the following as sole instructor:

Math 54: <i>Linear Algebra and Differential Equations</i>	Summer 2002
Math 1A: <i>Calculus of a Single Variable I</i>	Summer 2001

DISSERTATION AND THESIS COMMITTEES**Senior Theses Supervised (POMONA COLLEGE)**

The senior exercise in the Pomona mathematics department consists of a senior thesis project. Students work on this project throughout their senior year; at the end, they present their work to their professors and their peers, and write a detailed paper on their project.

During the academic year 2018-2019, I am working with (titles are tentative):

Yanai Feldman ('19)	<i>Topos Theory and Intuitionism</i>
Eric Gofen ('19)	<i>Ethnomathematics and Project Based Learning</i>
Sophia Hui ('19)	<i>Mistakes and Failure in the Mathematics Classroom</i>
Sylvia Akueze Nwakanma ('19)	<i>Topic Modeling and Image Labeling</i>

Below are the students I have worked with previously during my time at Pomona.

Nurry Goren ('18)	<i>Quantifying Quantitative Literacy: Insights from Textbook Analysis</i>
Jacob Gomez ('18)	<i>Ethnomathematics and the Case for a Pedagogy of Liberation</i>
Adam Hathaway ('17)	<i>Algebraic Models of Logic in Quantum Mechanics</i>
Julia Paige Smith ('17)	<i>Evaluating Problem-Based Mathematics Curricula Grades 9-12</i>
Vannessa (Jinglin) Wang ('17)	<i>Revisiting the College Admissions Problem</i>

Luke Fischinger ('16)	<i>Quasigroups and Their Characters</i>
Charles Kusi Minkah-Premo ('16)	<i>Motivation and Epistemological Beliefs</i>
Cesar Julian Meza ('16)	<i>Ethnomathematics: An Indigenous Approach</i>
Emily Frances Proulx ('16)	<i>Creative Mathematical Reasoning in Assessment Tasks</i>
Hannah Thornhill ('16)	<i>The Philosophy of Mathematics: A Study of Indispensability and Inconsistency (Scripps dual thesis)</i>
Kimberley Jiongco Africa ('15)	<i>Challenging Roadblocks to Access in Education</i>
Alexander Cole ('15)	<i>Supermanifolds</i>
Emmanuel De Jesus Mendez ('15)	<i>Fermat's Last Theorem: Past Attempts & Final Proof</i>
Jennifer Marie Stewart ('15)	<i>Comparing Transition School Math Homework and Exams</i>
Gabrielle Andrea Badie ('14)	<i>Proof Formalization: History and Advancement</i>
Utsav Kothari ('14)	<i>The Theory of Coxeter Groups</i>
Rina Sadun ('14)	<i>Game Theory and the Binding of Isaac</i>
Jacob Alexander Brown ('13)	<i>Decomposing Poisson Space Into Symplectic Spaces</i>
Maria Boya Zhu ('13)	<i>Mathematics of Happiness</i>
Tom Cleveland ('12)	<i>Gödel's Incompleteness Theorems</i>
Christopher Fowler ('12)	<i>Supercharacter theory and Ramanujan Sums</i>
Clara Fried ('12)	<i>Strategy Manipulation in Matching Theory</i>
Xinyi Guo ('12)	<i>Group Theory in Physics</i>
Qingcheng Zhang ('12)	<i>Online Dating and Matching Theory</i>
Courtney Sibert ('12)	<i>School Choice and Voucher Systems (Scripps dual thesis)</i>
Anna Bessesen ('11)	<i>Effect of Gender in Mathematics Achievement</i>
Ben Greenberg ('09)	<i>Gödel's Incompleteness Theorems: Application and Proof</i>
Ian Cunningham ('08)	<i>An "Anti-group" Approach to Group Theory</i>
Andreea Nicolae ('08)	<i>Tropical Algebra and Applications to Tropical Geometry</i>
Kimberly Walters ('08)	<i>Gröbner Bases and Integer Programming</i>

G. Badie, T. Cleveland, B. Greenberg, X. Guo, A. Hathaway, and J. Wang received distinction for their work.

H. Thornhill was co-advised by Yuval Avnur (Scripps College).

A. Bessessen was co-advised by Darryl Yong (Harvey Mudd College).

C. Fowler was co-advised by Stephan Garcia (Pomona College).

For information on these senior theses see:

<http://pages.pomona.edu/~gk014747/research/seniortheses.html>

Senior Theses - Second Reader (POMONA COLLEGE)

At the Pomona Mathematics Department, theses nominated for distinction are read carefully by a second reader. I performed this duty for the following students:

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|-----------------------|---|
| Andrew Foster ('12) | ADVISOR: R. Levitt
TITLE: <i>The Italian Anagram Problem</i> |
| Terry McDonnell ('09) | ADVISOR: S. Shahriari
TITLE: <i>Irreducibility and primality of elements in generalized power series rings</i> |
| Julie Siloti ('08) | ADVISOR: A. Radunskaya
TITLE: <i>An Investigation of Symmetry Increasing Bifurcations in Discrete and Continuous Dynamical Systems</i> |
| Philip Armour ('07) | ADVISOR: S. Shahriari
TITLE: <i>Cooperative Game Theory with an Application to Currency Regimes</i> |

Doctoral Dissertations - Committee Member (CLAREMONT GRADUATE UNIVERSITY)

Faculty at the five undergraduate colleges of the Claremont Consortium occasionally serve on dissertation committees of doctoral students when their research specialties are relevant. They can also direct dissertation work in special circumstances.

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|---------------------|--|
| Ahmed Al-Fares('19) | ADVISOR: G. Karaali
PROGRAM: Mathematics
TITLE: (TENTATIVE) <i>On Quasigroups and Their Representations</i> |
| Hsi-Ching Wang('10) | ADVISOR: S. Rajpoot
PROGRAM: Engineering and Industrial Applied Mathematics
TITLE: <i>Z' Expectations at the Large Hadronic Collider</i> |

RESEARCH SUPERVISION IN OTHER CONTEXTS**• Research Experiences for Undergraduate Faculty (2018 REUF AIM-ICERM WORKSHOP TEAM LEADER)**

Tenth in a series, sponsored by AIM, ICERM, and the NSF, this workshop aims to introduce undergraduate faculty to research opportunities in several fields of mathematics so as to equip them with the tools to mentor students in undergraduate research in mathematics.

PROJECT TITLE: Mathematics of Mechanical Puzzles

DESCRIPTION: Lectures aimed to provide background information and introduce open problems. The majority of the time was spent working on problems, reporting on progress, and formulating plans for future work.

FACULTY RESEARCH TEAM PARTICIPANTS: Tara Davis, Lauren Grimley, Kenan Ince, Boyan Kostadinov, and Roberto Soto.

• **Summer research project supervisor** (*through a POMONA COLLEGE FACULTY RESEARCH GRANT 2015-2016*)

In Summer 2016, supported by an internal grant, I worked with two Pomona students.

PROJECT TITLE: Defining Humanistic Mathematics

DESCRIPTION: We explored the various definitions provided for this term. This work resulted in a poster presentation and a conference presentation for the students, and we expect there to be at least two papers coming out of it in the near future.

STUDENT RESEARCHERS: Nurullah Elliott Goren '18, Tiffany Zhu '17.

• **Summer reading and research project supervisor (2016)**

In Summer 2016, I also worked with Samuel Yih '18, a Pomona mathematics major who was interested in pursuing more opportunities.

PROJECT TITLE: The Power of Three in Abstract Algebra

DESCRIPTION: We explored the various special cases in abstract algebra involving the number 3 and found connections between these special cases.

STUDENT RESEARCHER: Samuel Yih '18.

• **Yearlong research project supervisor** (SOUTHERN CALIFORNIA ACADEMY OF SCIENCE (SCAC) RESEARCH TRAINING PROGRAM) 2015-2016)

Southern California Academy of Science supports local high school students who are interested in engaging in science research to connect with college faculty to work through the academic year. The work culminates in a research paper and a presentation. In the academic year of 2015-2016, I had the opportunity to work with one SCAC student.

PROJECT TITLE: Totally Positive Matrices and Planar Networks

DESCRIPTION: We explored the various algebraic properties of totally positive matrices and then connect them to planar networks using Le diagrams.

STUDENT RESEARCHERS: Christopher Wong, Walnut High School '17.

• **Summer research project supervisor** (POMONA COLLEGE SURP (SUMMER UNDERGRADUATE RESEARCH PROGRAM) 2015)

Pomona College supports several undergraduates who are interested in engaging in research projects of various Pomona faculty via a funding program titled SURP. In the summer of 2015, I had the opportunity to work with one SURP student.

PROJECT TITLE: Defining Quantitative Literacy

DESCRIPTION: We explored the various definitions provided for this term. Together with Jeremy Taylor's work during his independent study with me in Fall 2014, this work resulted in a paper that was published in January 2016 in the journal *Numeracy*.

STUDENT RESEARCHERS: Edwin Villafane Hernandez '18.

• **Summer reading and research project supervisor (2015)**

In Summer 2015, I also worked with Dorian Lee '15, a Pomona mathematics major who had just graduated but was interested in pursuing some research opportunities before moving forward after graduation.

PROJECT TITLE: Languages, Alphabets, and Group Theory

DESCRIPTION: We explored algebraic properties of the Korean and Turkish alphabets. This work led to a collaborative project with Herbert Gangl of Durham University, UK, which has been recently accepted for publication.

STUDENT RESEARCHER: Woohyung (Dorian) Lee '15.

• **Summer research project supervisor (POMONA COLLEGE SURP (SUMMER UNDERGRADUATE RESEARCH PROGRAM) AND HAP (HIGH ACHIEVEMENT PROGRAM) 2014)**

Pomona College supports several undergraduates who are interested in engaging in research projects of various Pomona faculty via a funding program titled SURP.

Through another funding channel, HAP, Pomona supports a handful of incoming first-year students from backgrounds that are underrepresented in the sciences during a summer bridge program, which incorporates a research experience.

In Summer 2014, I worked with two SURP students and one HAP student.

PROJECT TITLE: Purpose and Humanism in Mathematics Education Research

DESCRIPTION: We explored the purported goals of mathematics education. We focused on the corpus of the first twenty volumes of an established mathematics education research journal (*Educational Studies in Mathematics*) to determine the prevalence of various approaches to this question among researchers of the time span of these twenty volumes.

STUDENT RESEARCHERS: Alejandra Castillo '17 (SURP), Prisca Diala '18 (HAP), Luke Fischinger '16 (SURP).

• **Research Experiences for Undergraduate Faculty (2013 REUF AIM-ICERM WORKSHOP TEAM LEADER)**

Fifth in a series, sponsored by AIM, ICERM, and the NSF, this workshop aimed to introduce undergraduate faculty to research opportunities in several fields of mathematics so as to equip them with the tools to mentor students in undergraduate research in mathematics.

PROJECT TITLE: Doing Math with a Conscience? / Math For Social Justice

DESCRIPTION: Lectures aimed to provide background information and introduce open problems. The majority of the time was spent working on problems, reporting on progress, and formulating plans for future work. During the workshop I supervised a team of five faculty members in developing their own viable research programs in their own institutions.

FACULTY RESEARCH TEAM PARTICIPANTS: Nicholas Boros, Rhonda Ellis, Karen McCready, William Miles, and Roselyn Williams.

• **Summer research project supervisor (CCMS FLETCHER JONES SUMMER RESEARCH FELLOWSHIP 2011)**

The Claremont Center for the Mathematical Sciences funds, via the support of Fletcher Jones Foundation, three summer research projects. My project was selected to be one of these for Summer 2011. In this framework I worked with three undergraduate students from HMC and Pomona, and one graduate student from CGU.

PROJECT TITLE: Yang-Baxter Equations and Integrable Systems

DESCRIPTION: We explored the various meanings of the classical Yang-Baxter equation (CYBE). Our goal was to construct (precise mathematical descriptions for) specific mechanical systems (called *integrable systems*) arising from solutions of the CYBE. Students also got a glimpse of how modern physics and mathematics are inextricably intertwined.

STUDENT RESEARCHERS: Peter Fedak (Harvey Mudd College), Keith McHugh (Pomona College), Aaron Pribadi (Harvey Mudd College), Sundeep Sampath (Claremont Graduate University)

• **REU project supervisor (CLAREMONT REU 2010: Statistics / Operations Research)**

The Claremont Colleges run a joint NSF-supported Research Experiences for Undergraduates program where faculty from the five undergraduate colleges of the Claremont Consortium supervise projects in a focus area which changes from year to year.

PROJECT TITLE: Game Theory and School Choice

DESCRIPTION: The School Choice Problem seeks school choice mechanisms (designed by the school district) to allocate available resources (seats in schools) among players (students with parents as agents) subject to district priorities and legal requirements. We investigated a core set of mechanisms and devised new mechanisms with desirable properties.

STUDENT RESEARCHERS: Sinan Aksoy (University of Chicago), Adam Azzam (University of Nebraska Lincoln), Chaya Coppersmith (Bryn Mawr College), Xueying Zhao (Mount Holyoke College), Xinjing (Amie) Zhu (Mount Holyoke College)

RESEARCH DESIGN: Joint with Julie Glass (California State University East Bay)

PROFESSIONAL SERVICE

Editorial Experience

FOUNDING (AND CONTINUING) EDITOR (2011-present)

Journal of Humanistic Mathematics

with Mark Huber (Claremont McKenna College)

“*The Journal of Humanistic Mathematics provides a forum for discussions about the aesthetic, cultural, historical, literary, pedagogical, philosophical, psychological, and sociological aspects as we look at mathematics as a human endeavor.*” Established in 2011.

<http://scholarship.claremont.edu/jhm>

ASSOCIATE EDITOR (2013-present)

The Mathematical Intelligencer

“*The Mathematical Intelligencer publishes articles about mathematics, about mathematicians, and about the history and culture of mathematics.*” Established in 1978.

<http://www.springer.com/mathematics/journal/283>

<http://link.springer.com/journal/283>

ASSOCIATE EDITOR (2016-present)

Numeracy

“*As the flagship journal of the National Numeracy Network (NNN), Numeracy seeks to advance the NNN’s vision of ‘a society in which all citizens possess the power and habit of mind to search out quantitative information, critique it, reflect upon it, and apply it in their public, personal and professional lives.’*” Established in 2008.

<http://scholarcommons.usf.edu/numeracy/>

EDITORIAL BOARD, *Matematik Dünyası*, (2017-present)

A popular mathematics magazine

Published in Turkish by the Turkish Mathematicians Foundation

EDITORIAL BOARD, *Carus Mathematical Monographs*, (2013-2019)

Publication Series of Mathematical Association of America

“*Monographs [in this series] are set forth in a manner comprehensible not only to teachers and students specializing in mathematics, but also to scientific workers in other fields.*”

<https://www.cambridge.org/core/series/carus-mathematical-monographs/>

SERIES EDITOR, *Mathematics in Culture and the Arts*, (2017-present)

ASSOCIATE EDITOR, *Mathematics in Culture and the Arts*, (2013-2017)

Springer Book Series

“*The series Mathematics in Culture and the Arts publishes books on all aspects of the relationships between mathematics and the mathematical sciences and their roles in culture, art, architecture, literature, and music. This new book series will be a major resource for*

researchers, educators, scientifically-minded artists, and students alike.”

<http://www.springer.com/series/13129>

CONSULTING EDITOR, *Springer Handbook on the Mathematics of the Arts and Sciences*,
edited by Bharath Sriraman (2016-2021)

“The goal of this Handbook is to become an authoritative source with chapters that show the origins, unification, and points of similarity between different disciplines and mathematics. Some chapters will also show bifurcations and the development of disciplines which grow to take on a life of their own. Science and Art are used as umbrella terms to encompass the physical, natural and geological sciences, as well as the visual and performing arts.”

<http://www.springer.com/us/book/9783319570716#aboutBook>

WEB EDITOR, *Algebraic Combinatorixx*, (2016-2017)
AWM Research Network

“This site serves as a resource for and about female mathematicians whose research interests lie in Algebraic Combinatorics.”

Site available at <https://awmadvance.org/research-networks/algebraic-combinatorixx/>

Peer-Review

- **Journal Referee:** *Advances in Mathematics, College Mathematics Journal, European Journal of Educational Research, Journal of Mathematics and the Arts, Involve, Leonardo, Loci, Math Horizons, Mathematics Teaching in the Middle School, Mathematics Teacher, Middle Grades Research Journal, Notices of the American Mathematical Society, Numeracy, PRIMUS, Turkish Journal of Mathematics.*

- **Reviewing Grant Proposals:**

FWF Grant Reviewer: *reporting to the Austrian Science Fund* 2015

2015 FWF Grant Competition

NSA-AMS Grant Reviewer: *reporting to the National Security Agency* 2015

2015 NSA-AMS Grant Competition

DOE-GAANN Grant Reviewer: *reporting to the Department of Education* 2012

2012 GAANN Grant Competition

DOE-FIPSE Grant Reviewer: *reporting to the Department of Education* 2010

2010 FIPSE Comprehensive Grant Competition

NSF-EPSCoR Grant Reviewer: *reporting to the Louisiana Board of Regents* 2009

Pilot Funding for New Research (Pfund) program

- **AAC&U Conference Reviewer:** *Transforming STEM Education* 2013

Book reviewer: since 2011
AWM Newsletter, College Mathematics Journal, Mathematics Teacher, Journal of Mathematics and the Arts, Numeracy

Book reviewer: *MAA Reviews* since 2005
 Scholarly reviews of recently published mathematics books
<http://mathdl.maa.org/mathDL/19/>
 wrote over thirty book reviews.

• **Reviewer:** *AMS Mathematical Reviews (MathSciNet)* since 2007
 Scholarly reviews of published mathematics research articles
<http://www.ams.org/mathscinet/>

KARAALI HAS ALSO REVIEWED SEVERAL BOOKS FOR PUBLISHERS:

- Reviewer, *Birkhäuser* 2016
- Reviewer, *Birkhäuser* 2016
- Reviewer, *Cambridge University Press* 2014
- Reviewer, *McGraw-Hill* 2013
- Reviewer, *Pearson* 2011
- Reviewer, *Houghton Mifflin* 2007

Workshops, Conference Sessions, Panels Organized, Chaired

- UPCOMING: Co-organizer, *MAA Contributed Paper Session Humanistic Mathematics, Joint Mathematics Meeting 2019, Baltimore, MD* January 2019
- Co-organizer, *MAA Workshop Writing Pedagogical and Expository Papers, Joint Mathematics Meeting 2018, San Diego, CA* January 2018
- Co-organizer, *MAA Contributed Paper Session Humanistic Mathematics, Joint Mathematics Meeting 2018, San Diego, CA* January 2018
- Co-organizer, *AWM Special Session Algebraic Combinatorics, AWM Research Symposium 2017, Los Angeles, CA* April 2017
- Co-organizer, *MAA Contributed Paper Session Humanistic Mathematics, Joint Mathematics Meeting 2017, Atlanta, GA* January 2017

- Co-organizer, *MAA Contributed Paper Session* January 2017
Humor and Mathematics,
 Joint Mathematics Meeting 2017, Atlanta, GA
- Co-organizer, *MAA General Contributed Paper Session* August 3–6, 2016
General Contributed Paper Sessions,
 MathFest 2016, Columbus, OH
- Co-organizer, *AWM Research Workshop* January 9, 2016
AWM Research Workshop Session on Algebraic Combinatorics
 Joint Mathematics Meeting 2016, Seattle, WA
- Co-organizer, *MAA Minicourse* January 6-8, 2016
Humanistic Mathematics - Two Parts,
 Joint Mathematics Meeting 2016, Seattle, WA
- Co-organizer, *MAA Contributed Paper Session* January 6, 2016
Quantitative Literacy in the K-16 Curriculum,
 Joint Mathematics Meeting 2016, Seattle, WA
- Co-organizer, *SACNAS Professional Development Session* October 29, 2015
A Writing Group Strategy for Scientists,
 2015 SACNAS National Conference, National Harbor, MD
- Co-organizer, *AMS Special Session* October 24-25, 2015
Special Session on Humanistic Mathematics,
 AMS 2015 Fall Western Section Meeting, Fullerton, CA
- Co-organizer,, *MAA Panel Session* August 8, 2015
Quantitative Literacy and Democracy,
 MathFEST 2015, Washington, DC
- Co-organizer, *MAA / PCUMC Conference* March 14, 2015
MAA Centennial and PCUMC Tenth Anniversary Conference,
 Spring 2015 MAA SoCal/NV Section Meeting, Thousand Oaks, CA
- Co-facilitator, *Faculty Session on Pedagogy* March 14, 2015
MAA Centennial and PCUMC Tenth Anniversary Conference,
 Spring 2015 MAA SoCal/NV Section Meeting, Thousand Oaks, CA
- Co-organizer, *MAA Minicourse* January 10-12, 2015
Humanistic Mathematics - Two Parts,
 Joint Mathematics Meeting 2015, San Antonio, TX

- Co-organizer, *AWM Poster Session* January 12, 2015
Graduate Student Research Poster Session
 Joint Mathematics Meeting 2015, San Antonio, TX
- Co-organizer, *MAA Contributed Paper Session* January 10, 2015
Humor in Mathematics,
 Joint Mathematics Meeting 2015, San Antonio, TX
- Organizer, *MAA Panel Session* January 11, 2015
Mathematicians Write: Publishing Options and Outlets
Beyond the Standard Research Journal,
 Joint Mathematics Meeting 2015, San Antonio, TX
- Co-organizer, *AALAC Workshop* October 10-11, 2014
Enhancing Quantitative Reasoning Across the Curriculum,
 National Numeracy Network Annual Conference, Northfield, MN
- Chairperson, *Short Communication Session SC11-05* August 15, 2014
 International Congress for Mathematicians-ICM 2014, Seoul, Korea
- Co-organizer, *MAA Minicourse* January 15-17, 2014
Humanistic Mathematics - Two Parts,
 Joint Mathematics Meeting 2014, Baltimore, MD
- Organizer, *MAA Contributed Paper Session* October 12, 2013
Contributed Paper Sessions - Four Parts,
 Fall 2013 MAA SoCal/NV Section Meeting, Dominguez Hills, CA
- Co-organizer, *AMS Special Session* January 11, 2013
Special Session on Algebraic Combinatorics & Representation Theory,
 Joint Mathematics Meeting 2013, San Diego, CA
- Co-organizer, *MAA General Contributed Paper Session* January 9-12, 2013
General Contributed Paper Sessions,
 Joint Mathematics Meeting 2013, San Diego, CA
- Co-organizer, *MAA Panel* August 3, 2012
Effective Strategies for Teaching Classes for Non-majors,
 MathFEST (Annual Meeting of MAA) 2012, Madison, WI
- Co-organizer, *MAA Contributed Paper Session* January 8-9, 2011
Contributed Paper Session on Humanistic Mathematics,
 Joint Mathematics Meeting 2011, New Orleans, LA

- Co-organizer, *AMS 2008 Spring Western Section Meeting Session
Special Session on Hopf Algebras and Quantum Groups*,
Claremont McKenna College May 3-4, 2008
- Co-organizer, *Project NExT Panel,
Funding agencies other than the NSF and Dept. of Education*
MathFEST 2007, San Jose, CA August 2, 2007
- Co-organizer, *Project NExT Panel,
Expanding Our Research Horizons*
Joint Mathematics Meetings 2007, New Orleans, LA January 7, 2007

Also organized a poetry reading / open poetry night at the JMM 2011 (together with Mark Huber and Dagan Karp), JMM 2012 (together with JoAnne Growney and Mark Huber), JMM 2013 (together with Mark Huber and Sue VanHattum), JMM 2014 (together with JoAnne Growney and Mark Huber), JMM 2015 (together with Lawrence Lesser), JMM 2016 (together with Lawrence Lesser and Douglas Norton), and JMM 2017 (together with Lawrence Lesser and Douglas Norton).

Mentoring activities: General

Workshop Team Leader:

Research Experiences for Undergraduate Faculty (REUF 2018)
American Institute for Mathematics (AIM), San Jose, CA; 2018

MPWR Group Leader: *Mentoring & Partnerships For Women in RUME Group* 2016
Conference on RUME 2016, Pittsburgh, PA

Co-organizer: *AWM Workshop Session and Mentoring Matchups* 1/15-1/16
For the *AWM Research Workshop Session on Algebraic Combinatorics*
Joint Mathematics Meeting 2016, Seattle, WA

Co-organizer: *SACNAS Professional Development Workshop Session* 11/15
A Writing Group Strategy for Scientists
2015 SACNAS National Conference, National Harbor, MD

Faculty advisor: *Gates Millennium Scholars Claremont Colleges Community* 2015-

Research Mentor: *The Mellon Mays Undergraduate Fellowship* 2015-2017
For Alejandra Castillo (PO class of 2018)

Co-organizer: *AWM Poster Session and Mentoring Matchups* 12/14-1/15
For the *Graduate Student Research Poster Session*
Joint Mathematics Meeting 2015, San Antonio, TX

Mentor: *MAA Early Career Mentoring Network* 2013-
National program connecting junior mathematicians with experienced mathematicians.

Consultant: *Project NExT* 2013-
Professional development program for new or recent Ph.D.s in the mathematical sciences.

Workshop Team Leader:

Research Experiences for Undergraduate Faculty (REUF 5)
Institute for Computational and Experimental Research in Mathematics (ICERM), Providence, RI; 2013

Mentor: AWM (Association for Women in Mathematics) Joint Mathematics Meetings Workshop - assigned to mentor an individual postdoctoral mathematician. 2010

Instructor for EDGE 2008 June 2008

Enhancing Diversity in Graduate Education:

NSF-funded summer program for women about to start graduate studies in mathematics

Quantitative literacy and student support activities

Chair, Special Interest Group of the MAA on Quantitative Literacy 02/2018-01/20120

Chair-Elect, Special Interest Group of the MAA on Quantitative Literacy 08/2017-01/2018

Secretary/Treasurer, Executive Committee, Special Interest Group of the MAA on Quantitative Literacy (*served for two terms*) 02/2010-01/2016

Faculty coordinator for the CCMS Software Lab 2010-2013

A collaborative consortium-wide resource that provides timely and much needed software support to any member of the Claremont community who requests it.

Served on all faculty committees of Pomona College on quantitative skills 2010-2014

Pomona College team member:

Summer workshop on inquiry based statistics education, Wesleyan College July 2011

PKAL workshop on quantitative assessment techniques, Carleton College October 2010

Reviewing / Judging Student Research

TRIAGE JUDGE FOR HIGH SCHOOL STUDENT TEAM RESEARCH PROJECTS, for the M3 MathWorks Math Modeling Challenge 2018, (03/2018)

JUDGE FOR UNDERGRADUATE STUDENT RESEARCH PRESENTATIONS, for the 2017 SACNAS (Society for Advancement of Chicanos/Hispanics and Native Americans in Science) – The National Diversity in STEM Conference, to be held in Salt Lake City, UT in October 2017; (07-08/2017)

JUDGE FOR GRADUATE STUDENT RESEARCH PRESENTATIONS, for the 2017 SACNAS (Society for Advancement of Chicanos/Hispanics and Native Americans in Science) – The National Diversity in STEM Conference, to be held in Salt Lake City, UT in October 2017; (07-08/2017)

JUDGE FOR THE GRADUATE STUDENT POSTER SESSION, 2017 AWM Research Symposium, Los Angeles, CA; (04/08/2017)

PROGRAM COMMITTEE MEMBER / REVIEWER FOR 2014 MCURCSM, Undergraduate computer science and mathematics research conference in Wooster, OH; (10-11/2014)

REVIEWER FOR THE 2014 YOUNG MATHEMATICIANS CONFERENCE, Undergraduate mathematics research conference in Columbus, OH, on August 22-24, 2014; (07/2014)

JUDGE FOR THE STUDENT POSTER SESSION, Spring 2014 Meeting of the Southern California - Nevada Section of MAA, Fullerton, CA; (04/12/2014)

PROGRAM COMMITTEE MEMBER / REVIEWER FOR 2013 MCURCSM, Undergraduate computer science and mathematics research conference in Delaware, OH; (10-11/2013)

PROGRAM COMMITTEE MEMBER / REVIEWER FOR 2012 MCURCSM, Undergraduate computer science and mathematics research conference in Delaware, OH; (10-11/2012)

REVIEWER FOR THE 2012 YOUNG MATHEMATICIANS CONFERENCE, Undergraduate mathematics research conference in Columbus, OH, on July 27-29, 2012; (06/2012)

JUDGE FOR THE STUDENT POSTER SESSION, Spring 2012 Meeting of the Southern California - Nevada Section of MAA, Fullerton, CA; (04/14/2012)

REVIEWER FOR THE NINTH ANNUAL STUDENT PAPER CONTEST IN THE HISTORY OF MATHEMATICS, Undergraduate essay competition organized by the History of Mathematics Special Interest Group of the MAA (HOMSIGMAA), 2012; (04/2012)

PROGRAM COMMITTEE MEMBER / REVIEWER FOR 2011 MCURCSM, Undergraduate computer science and mathematics research conference in Granville, OH; (10-11/2011)

REVIEWER FOR THE 2011 YOUNG MATHEMATICIANS CONFERENCE, Undergraduate mathematics research conference in Columbus, OH, on August 19-21, 2011; (07/2011)

REVIEWER FOR THE EIGHTH ANNUAL STUDENT PAPER CONTEST IN THE HISTORY OF MATHEMATICS, Undergraduate essay competition organized by the History of Mathematics Special Interest Group of the Mathematical Association of America (HOMSIGMAA), 2011; (04/2011)

PROGRAM COMMITTEE MEMBER / REVIEWER FOR 2010 MCURCSM, Undergraduate computer science and mathematics research conference in Springfield, OH; (10-11/2010)

REVIEWER FOR THE 2010 YOUNG MATHEMATICIANS CONFERENCE, Undergraduate mathematics research conference in Columbus, OH, on August 27-29, 2010; (08/2010)

JUDGE FOR THE UNDERGRADUATE RESEARCH POSTER SESSION, Joint Mathematics Meetings 2010, San Francisco, CA; (01/15/2010)

PROGRAM COMMITTEE MEMBER / REVIEWER FOR 2009 MCURCSM, Undergraduate computer science and mathematics research conference in Oberlin, OH; (10-11/2009)

REVIEWER FOR THE 2009 YOUNG MATHEMATICIANS CONFERENCE, Undergraduate mathematics research conference in Columbus, OH, on August 28-30, 2009; (08/2009)

JUDGE FOR THE STUDENT POSTER SESSION, Spring 2008 Meeting of the Southern California - Nevada Section of MAA, San Diego, CA; (03/15/2008)

JUDGE FOR THE UNDERGRADUATE RESEARCH POSTER SESSION, Joint Mathematics Meetings, San Diego, CA; (01/08/2008)

JUDGE FOR THE STUDENT POSTER SESSION, Spring 2007 Meeting of the Southern California - Nevada Section of MAA, Claremont, CA; (03/03/2007)

JUDGE FOR THE UNDERGRADUATE RESEARCH POSTER SESSION, Joint Mathematics Meetings, New Orleans, LA; (01/07/2007)

Service to the Mathematical Association of America

Chair, Special Interest Group of the MAA on Quantitative Literacy 02/2018-01/2020

Chair-Elect, Special Interest Group of the MAA on Quantitative Literacy 08/2017-01/2018

Program Chair, MAA Southern California-Nevada Section, 2014-2015

Editorial Board Member, *Carus Mathematical Monographs*, 2013-2016, 2016-2019

Program Vice Chair, MAA Southern California-Nevada Section, 2013-2014

Program Committee Member, MAA Southern California-Nevada Section, 2012-2015

Member, MAA Committee on Contributed Paper Sessions 2011-2014, 2014-2017

Secretary/Treasurer, Executive Committee, 02/2010-01/2016

Special Interest Group of the MAA on Quantitative Literacy
(*served for two terms*)

Member, MAA Committee on the Beckenbach Book Award 2008-2010

Reviewer: MAA Reviews 2005-present
wrote over thirty book reviews

Service to the Association for Women in Mathematics

AWM Wikipedia Fellow Summer 2018

AWM-MAA Sectional Liaison Committee, AWM 2018-2020

Research Networks Committee, AWM 2015-2017

Joint Mathematics Meeting Committee, AWM	2014-2016
Mentor, AWM (Association for Women in Mathematics) Joint Mathematics Meetings Workshop - assigned to mentor an individual postdoctoral mathematician.	2010
Member, AWM 2010 Joint Mathematics Meetings Workshop Postdoctoral Participant Selection Committee	08/2009-07/2010

Other professional activities

Judge; AMS Math Poetry Contest 2019,	November 2018-January 2019
Participant: VALUE Reliability Project: AAC&U Project to assess the reliability of VALUE rubrics	February 2011
Contributor: CAPSULE project MAA project to catalogue articles in Mathematics Magazine.	2006-2008

COLLEGE SERVICE and ACTIVITIES

DEPARTMENTAL ACTIVITIES:

Participated in the promotion to full professor review of Vin de Silva.	Spring 2018
Participated in the search to fill two temporary positions	Spring 2017
Participated in the third-year review of Blerta Shytilla.	Fall 2015
Participated in the promotion to full professor review of Jo Hardin.	Spring 2015
Senior exercise and honors “committee”	Spring 2015
Participated in the first-year review of Blerta Shytilla.	Fall 2014
Participated in the search to fill a temporary part-time position	Fall 2013
Participated in the search to hire a tenure-track mathematician	Fall 2012-Spring 2013
Participated in the search to fill a three year postdoctoral position	Spring 2012
Departmental assessment committee	Fall 2010-Spring 2012
Participated in the search for two temporary faculty.	Fall 2008-Spring 2009
Participated in the third-year review of Vin de Silva.	Fall 2007
Participated in the tenure review of Jo Hardin.	Fall 2007
Helped proctor the exams in the Mathematics Placement Exams	08/27/2007
Helped grade for the Pomona-Wisconsin Mathematics Talent search - V	03/19/2007

Participated in the first-year review of Vin de Silva. Fall 2006

POMONA COLLEGE COMMUNITY:

Pomona College Academy for Youth Success (PAYS) Advisory Committee 2018-2019

Pomona College Faculty Liaison Spring 2018-present
Study Abroad (Budapest Semesters in Mathematics Education)

Education / PST Advisor Fall 2017-present

Participated in the International Faculty and Student Meet and Greet 2017 Fall 2017

Member of the Critical Thinking and Writing Committee 2015-2017

Member of the Advisory Board for Library Planning (ABLP) 2015-2016

Member of the Hahn Teaching with Technology Grants Committee Spring 2013, Spring 2015, Spring 2016

Family Weekend presentations on ID1 courses 02/2016, 02/2014, 02/2012
(see Presentations for titles)

Member of the Faculty Positions Advisory Committee (elected) Fall 2013–Spring 2015
Interim Chair: Summer 2014, Chair: 2014-2015.

Member of the QSC Advisory Committee Fall 2013-Spring 2014

Special lecture presentation for Pomona College alumni/ae 08/2013, 12/2009
(see Presentations for titles)

Chair of the ID-1 Steering Committee Spring 2013

Member of the Quantitative Studies Center Director Search Committee Fall 2012

Member of the Faculty-Trustee Retreat Planning Committee 2011-2012

Division II Science Lunch Talk 04/2012
(see Presentations for titles)

Discussion leader for first-year book August 2011

Pomona College Faculty representative July 2011
Summer workshop on inquiry based statistics education, Wesleyan College

Participant at Women’s Union event *Major Equality* March 2011
on gender imbalances across specific disciplines

Member of the Quantitative Studies Center Committee 2010-2011

Attended multiple sponsor dinners with students hosted by Dean Feldblum 2010, 2008

Pomona College Faculty representative October 2010

- PKAL workshop on quantitative assessment techniques, Carleton College
- Faculty advisor for Goldwater Fellowships 2010-2011
- Participated in the grading of the first year quantitative skills examination 08/23/2010
- Member of the Ad Hoc Committee on the Quantitative Studies Center 2008-2009
- Led discussion seminar for the first year book 08/30/2008, 09/02/2007
- Member of the Orientation Committee Spring 2008
- Led the FSFW Walking Club Fall 2007-Spring 2009, Fall 2010-Spring 2016
- Started the FSFW (Faculty-Staff Fitness and Wellness) Walking Club Fall 2007
- Irregular participant of the Oldenburg Turkish language table.
- Participated in the Orientation Adventure 2007 SoCal Adventure
- Participated in peer mentoring with colleagues Fall 2007
Phil Choi (Astronomy), Dwight Whitaker (Physics), Anne Dwyer (German and Russian)
and Hilary Lackey (Geology)
- Participated in peer mentoring with colleagues Spring 2007
Pardis Mahdavi (Anthropology), Erin Runion (Religious Studies), Angelina Chin (His-
tory), and Aaron Kunin (English)
- Attended Alumni Board Dinner with New Faculty 02/03/2007
- Attended faculty lunch with library consultants 02/06/2007
- Participated in peer mentoring with colleagues Fall 2006
April Mayes (History), Darryl Smith (Religious Studies) and Kyla Tompkins (English)
- CLAREMONT MATHEMATICS COMMUNITY:
- CCMS Program Review Committee member Spring 2017
- Organizer of the Claremont Algebra/Number Theory/Combinatorics Seminar 2007–2009,
Continued after Steele Leave 2010-
- Pitzer College Math Search Committee: external member 2014-2015
- Faculty coordinator for the CCMS Software Lab 2010-2013
- Founding Member and Participant of Mathematics Education Reading Club Spring 2011
- Attended a library discussion about mathematics collections with President Oxtoby (others
present were Ami Radunskaya (Pomona) and Ellis Cumberbach (CGU)) 07/09/2009
- Participated in the planning and foundation of the Claremont Center for the Mathematical
Sciences CCMS (est. 2007)

Participated in the collaborative development phase of the Claremont Colleges Institute for Math and Science Education housed at the Claremont Graduate University; now called the Claremont Colleges Collaborative for Math and Science Education (C3MSE) 2007-2008

Attended three out of four job talks for the CMC Mathematics department, and attended the candidate dinner with one of them 01/2007

OTHER CLAREMONT ACTIVITIES

Professional Development Network: *Work Prioritization Group* 2018-2019

Coorganized the *Global Warming Demystified with Jeffrey Bennett* event February 2018

Faculty advisor: *Gates Millennium Scholars Claremont Colleges Community* 2015-present

Claremont Colleges Consortial / Cross-Campus Project:
Coordination of K-12 Teacher Preparation Spring–Fall 2017

Claremont Colleges Consortial / Cross-Campus Project:
Library Support and Collaboration – Faculty participant Spring 2017

Professional Development Network: *Work/Life Balance in STEM Fields* 2014-2015

Faculty Member of Search Committee for Digital Scholarship Librarian Fall 2014

Participated in a Hixon Faculty Discussion Group on Surveillance and Society Spring 2008

Participated in a Hixon Faculty Discussion Group on Technology and International Development Spring 2007

Attended the meetings of the Claremont Humanities Forum Fall 2006

OTHER

Conferences, Mini-courses and Workshops Attended for Professional Development

RESEARCH CONFERENCES AND WORKSHOPS

BIRS Workshop: Algebraic Combinatorixx II, Banff, Canada; (05/2017)

IPAM Workshop: Mathematical Analysis of Cultural Expressive Forms: Text Data, Los Angeles, CA; (05/2016)

IPAM Workshop: Culture Analytics Core Tutorial, Los Angeles, CA; (03/2016)

WiMSoCal 9: Women In Mathematics: Southern California (11/2015)

Istanbul Summer School in Algebraic Geometry, Istanbul, Turkey; (06/2013)

BIRS Workshop: Algebraic Combinatorixx, Banff, Canada; (05/2011)

AIM Workshop: Supercharacters and combinatorial Hopf algebras, Palo Alto, CA; (05/2010)

- MSRI Workshop: Tropical Structures in Geometry and Physics, Berkeley, CA; (12/2009)
- MSRI Workshop: Tropical Geometry in Combinatorics and Algebra, Berkeley, CA; (10/2009)
- MSRI Workshop: Introduction to Tropical Geometry, Berkeley, CA; (08/2009)
- MSRI Connections for Women Workshop on Tropical Geometry, Berkeley, CA; (08/2009)
- AIM Workshop on Research Experiences for Undergraduate Faculty, (REUF 2), Palo Alto, CA; (07/2009)
- Spring Western Section Meeting of the American Mathematical Society (Meeting #1039), Claremont, CA; (05/2008)
(Co-organizer of the Special Session on Hopf Algebras and Quantum Groups, with Susan Montgomery (USC) and Serban Raianu (Cal State Dominguez Hills)).
- MSRI Workshop on Topics in Combinatorial Representation Theory, Berkeley, CA; (03/2008)
- Southern California Algebra Conference, Los Angeles, CA; (02/2008)
- MSRI Connections for Women workshop on Combinatorial Representation Theory and Representations of Finite Groups, Berkeley, CA; (01/2008)
- CRM Workshop on Combinatorial Hopf Algebras and Macdonald Polynomials, Montreal, Quebec; (05/2007)
- AIM (American Institute of Mathematics) Workshop on Buildings and Combinatorial Representation Theory, Palo Alto, CA; (03/2007)
- Southern California Algebra Conference, Los Angeles, CA; (11/2006)
- NSF-CBMS Regional Conference on Cluster Algebras and Applications, North Carolina State University, Raleigh, NC; (06/2006)
- Geometry and Representation Theory, A Conference in Honor of George Lusztig, Cambridge, MA; (05/2006)
- Geometric Group Theory, University of Arkansas Spring Lecture Series 2006, (04/2006)
- Workshop on Lie Groups, Lie Algebras and Their Representations, Eugene, OR; (10/2005)
- MAA PREP - MSRI Workshop on Geometric Combinatorics, Berkeley, CA; (06/2005)
- Southern California Algebra Conference, Los Angeles, CA; (02/2005)
- Southern California Algebra Conference, Los Angeles, CA; (11/2004)
- Interactions between Representation Theories, Knot Theory, Topology, Quantum Field Theory, Category Theory, and Mathematical Physics, Potsdam, NY; (06/2003)

Workshop on Lie Groups, Lie Algebras and Their Representations, Riverside, CA (03/2002)

Workshop on Representation of Loop Groups, Institute for Pure and Applied Mathematics,
Los Angeles, CA; (11/2001)

SCHOLARSHIP OF TEACHING & LEARNING, PEDAGOGY, MATHEMATICS EDUCATION

Pomona College: ID1 (First-Year Critical Inquiry Seminar) Workshop (05/2018)

2018 Southern California PKAL (SoCAL PKAL) Regional Network Annual Meeting, *One Size Doesn't Fit All: Using Varied Instructional Approaches to Help All STEM Students Succeed*, University of California Los Angeles, Los Angeles, CA; (03/2018)

Conference on Research in Undergraduate Mathematics Education (RUME 2017), San Diego, CA; (02/2017)

Claremont Colleges Center for Teaching and Learning Collaborative Learning Workshop, Claremont, CA; (12/2016)

Pomona College: Writing-Intensive Courses Workshop, Claremont, CA; (12/2016)

RUME with a View: Conference for New Researchers in RUME (Research in Undergraduate Mathematics Education), Norman, OK; (10/2016)

Pomona College: ID1 (First-Year Critical Inquiry Seminar) Workshop (08/2016)

Mobile National Academy Summer Institute of Undergraduate STEM Education, Claremont, CA; (06/2016)

Pomona College: ID1 (First-Year Critical Inquiry Seminar) Workshop (05/2016)

Conference on Research in Undergraduate Mathematics Education (RUME 2016), Pittsburgh, PA; (02/2016)

The Eighth International Mathematics Education and Society (MES8) Conference, Portland, OR; (06/2015)

MAA PREP Workshop on *Using Video Case Studies to Develop Students Proof-Writing Skills* (online); (06/2015)

Pomona College: ID1 (First-Year Critical Inquiry Seminar) Workshop (05/2015)

MAA Short Course on History of Mathematics, JMM 2014, Baltimore, MD (01/2014)

Pomona College: ID1 (First-Year Critical Inquiry Seminar) Workshop (05/2013)

Pomona College: Digital Pedagogies Workshop (05/2013)

2012 International Institute for SoTL (Scholarship of Teaching and Learning) Scholars and Mentors (IISSAM) on the Ecology of Teaching and Learning, Loyola Marymount University, Los Angeles, CA, May 31-June 3, 2012.

2012 Southern California PKAL (SoCAL PKAL) Regional Network Annual Meeting, *Engaged STEM Teaching — What Works?*, Pomona College, Claremont, CA; (01/2012)

Workshop on Designing & Implementing Student Research Projects for Maximum Learning; Claremont Colleges Libraries; (08/2011)

Pomona College: ID1 (First-Year Critical Inquiry Seminar) Workshop (05/2011)

PBWiki Summer Camp 2010: four-week training program (June 21-July 20) on the use of new technologies in the classroom; (06/2010-07/2010)

MAA Minicourse on Teaching a Proof-Based Course as the Gateway to the Mathematics Major, MathFEST 2008, Madison, WI; (08/2008)

Boot Camp for Professors, Leadville, CO (07/2008)

Pomona College TLC Workshop: Team Teaching Interdisciplinary Courses, (04/2008)

Institute for Mathematics and Education Workshop: Mathematicians in Mathematics Education, Tucson, AZ; (03/2008)

MAA Minicourse on Evaluating Student Presentations in Mathematics, Joint Mathematics Meeting, San Diego, CA; (01/2008)

MAA Minicourse on Directing Undergraduate Research, Joint Mathematics Meeting, San Diego, CA; (01/2008)

MAA Minicourse on Using History of Calculus to Enhance Its Teaching, MathFEST 2007, San Jose, CA; (08/2007)

Workshop: Responding to Student Writing: How can we help student writing improve through comments on a single paper?, Claremont, CA; (02/2007)

NITLE Workshop on Emerging Technologies and the Liberal Arts Campus, Claremont, CA; (01/2007)

MAA Mini-course on Scholarship of Teaching and Learning, Joint Mathematics Meetings 2007, New Orleans, LA; (01/2007)

MISCELLANEOUS TOPICS

MAA Minicourse on Visualizing Projective Geometry through Photographs and Perspective Drawings, MathFEST 2018, Denver, CO; (08/2018)

Wikipedia Fellows General Academic Topics Cohort Summer 2018 Training: twelve-week training program (July 11-September 20) on contributing to Wikipedia to support and strengthen its coverage in topics of expertise; (07/2018-09/2018)

Difficult Dialogues: How to be a Better Ally, AWM workshop, 2018 SIAM Annual Meeting, Portland, OR, hill (07/2018)

- DH@CC Digital Humanities Summer Institute on Computational Text Analysis; Claremont, CA (05/2017)
- BIRS Workshop: Creative Writing in Mathematics and Science, Banff, Canada; (1/2016)
- DH@CC Digital Humanities Summer Institute; (06/2015)
- Claremont Colleges Library Journal Editors Workshops; (02/2014; 10/2014)
- BIRS Workshop: Creative Writing in Mathematics and Science, Banff, Canada; (11/2013)
- CHAS Pre-Major Advising and Mentoring Programs for Students of Color Targeted Professionals Meeting, Pomona College (06/2012)
- Workshop on inquiry based statistics education, Wesleyan College (07/2011)
- The Future of Higher Education in America: Are We Academically Adrift?* American Council on Education Webinar (06/2011)
- Feminism and Science: Building Bridges for Teaching and Research Innovation Mellon 23 workshop, Scripps College, Claremont, CA; (01/2011)
- PKAL / QUIRK Workshop on Quantitative Assessment, Carleton College (10/2010)
- BIRS Workshop: Creative Writing in Mathematics and Science, Banff, Canada; (05/2010)
- Introduction to GIS Workshop, Claremont Colleges Libraries, Claremont, CA (01/2009)
- MAA Minicourse on A Game Theory Path to Quantitative Literacy, MathFEST 2008, Madison, WI; (08/2008)
- MAA Short Course: Game-theoretic Modeling: Techniques and Applications, MathFEST 2008, Madison, WI; (07/2008)
- MAA Short Course: Combinatorics: Past, Present, and Future, Joint Mathematics Meeting 2008, San Diego, CA; (01/2008)
- Pomona College Faculty Workshop on Queer Theory, Claremont, CA; (05/2007)
- MAA Digital Library Workshop, Washington, DC; (10/2006)
- MAA Mini-course on Mathematical Finance, MathFEST, Albuquerque, NM; (08/2005)

Professional Memberships

American Mathematical Society (AMS); Association for Women in Mathematics (AWM); California Mathematics Council (CMC); Mathematical Association of America (MAA); National Council of Teachers of Mathematics (NCTM); National Numeracy Network (NNN); SACNAS (Society for Advancement of Chicanos/Hispanics and Native Americans in Science).