

Julia Olkin, Ph.D.

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Citizenship: USA

Education

- Ph.D.** Rice University, Mathematical Sciences, 1986
Dissertation: *Linear and Nonlinear Deconvolution Problems*
- M.A.** Rice University, Mathematical Sciences, 1985
- B.A.** Pomona College, Mathematics, 1981

Teaching Experience

- 2018-** Professor, Dept. of Mathematics, California State University, East Bay
- 2013-2018** Associate Professor, Dept. of Mathematics, California State University, East Bay
- 2007-2013** Assistant Professor, Dept. of Mathematics and Computer Science, California State University, East Bay
- 2005-2007** Lecturer, Dept. of Mathematics and Computer Science, California State University, East Bay

Courses Taught

- Lower Division:** College Algebra (1130), Business Calculus (1810), Calculus I-III (1304/1305/2304), Numerical Algorithms & Linear Algebra for Computer Science (225),
- Upper Division:** Linear Algebra (3100); Differential Equations (DE), Ordinary DE, Partial DE (3331/3361/4361); Numerical Analysis I, II (3750/4750); Linear Programming (3841); Linear Optimization (4841)
- Graduate Level:** Advanced Topics in Linear Optimization (6840); Advanced Topics in Optimization (6842); Advanced Topics in Numerical Analysis (6750)

- 2005-2007** MathCounts[©] Coordinator/Coach, Canyon Middle School, Castro Valley, CA. A national math enrichment, coaching and competition program that promotes middle school math achievement.
- 1998-2006** Math teacher (substitute), Castro Valley Unified School District
- 1998 - ongoing** Math tutoring to high school and community college students
- 1989** Visiting Lecturer for Numerical Analysis course (CS135), Stanford University

Professional Activities

- 2016-2019 STEM Faculty Learning Program**, funded by NSF via a UC Berkeley program, *Transforming College Teaching: Statewide Implementation of the Faculty Learning Program to Improve STEM Undergraduate Teaching and Learning*. This initiative brings together STEM faculty from 4-year and 2-year institutions to learn, support each in integrating active learning strategies in their courses, and build relationships and understanding of one another's teaching and learning contexts. (**Co-PI**)
- 2017-2018 Course Redesign with Technology**, supported by the CSU Chancellor's Office. Collaborate with two colleagues on incorporating active learning strategies regularly in Calculus classes to improve student success. (**PI**)
- 2017 East Bay Summer Math Program**, funded by the Warriors Community Foundation. Create and deliver a one-week intensive program to rising 9th graders in Oakland who are struggling in Algebra, to help prepare them in both math and social/emotional content. (**PI**)

- 2016-2017 Bridging the Gap**, a partnership between Peralta Community College District, Oakland Unified, Berkeley Unified, and CSUEB, funded by the James Irvine Foundation. Two goals are to increase the number of students who, upon high school graduation, will enroll and be successful in college level mathematics, and to develop and pilot innovative practices.
- 2016-2017 Teaching for Effectiveness and Equity in Mathematics (TEEM)** in Hayward Unified School District, supported by the California Dept. of Education. Form a professional learning community of TK-3 teachers and administrators to improve early math skills and vertical articulation of math instruction and to increase mathematical discourse. (**Co-PI**)
- 2015-2016 NGEI: New Generation of Educators Initiative**, funded by Bechtel. In exploring the power of co-teaching, we put together a team of two secondary teachers from Castro Valley Unified (CVUSD), a faculty member from Teacher Education at CSUEB, and myself. Together we designed curriculum to incorporate into the math methods course for credential candidate, and created two professional development workshops for all math teachers in CVUSD. (**Faculty Lead**)
- 2014-ongoing Math and Science Teacher Initiative (MSTI)**, support by the CSU Chancellor's Office. The goal is to encourage undergraduates to consider teaching in grades 6-12 in a STEM discipline. (**PI**)
- 2013-2016 California Academic Partnership Program (CAPP)** grant with Deer Valley High School in Antioch USD and Los Medanos Community College. Create math units to teach in Algebra I classes, which align with Common Core standards. Help to increase the pathways for students to attend an institute of higher learning.
- 2013-2015 ChaRM project: Changing Remedial Math.** CSUEB Grant on overhauling the developmental math program for our students. Create new curriculum and teaching pedagogy for the year-long developmental math sequence. (**PI**)
- 2011-2014 CSU Director for Carnegie Statway University Collaboratory.** Help facilitate a faculty-led-and-researched, accelerated, alternative pathway to college-level credit in quantitative reasoning and statistics programs. Lead position, working with a team at CSUEB, Carnegie Foundation, and San Jose State University to create an online Statway Instructors program.
- 2011- 2016 Co-Director** of the newly-formed **Center For Math Education and Research (CMER)**. The purpose is to nourish collaboration between College of Science and Teacher Education in advancing mathematics education by providing professional development to teachers and outreach to students and communities. The Center reflects both the educational and research components of math education.
- 2009-2015 Chevron Math Achievement Academies (MAA).** The goal was to increase the number of college-ready students interested in pursuing higher education in the STEM disciplines. The Summer Academy Program increased in number and scope each summer throughout Alameda and Contra Costa counties, eventually offering a middle school math program to incoming 6th and 7th graders, and Algebra I, Geometry, and Algebra II to incoming 9th, 10th, 11th graders, respectively. The expanded program included summer curriculum, coaching during the academic year, parental and industry volunteer involvement and ultimately reached over 3000 students. (**PI**)
- 2011-2014 Leshar Math Achievement Academies**, funded by the Margaret and Dean Leshar Foundation. Build on the success of the Chevron MAA, this grant added a professional development component for Contra Costa county teachers. We created and taught week-long workshops in Algebra I, Algebra II, and Geometry, for a total of five workshops, to very positive teacher feedback. (**PI**)
- 2011-2014 California Math and Science Partnership (CaMSP)** grant with Pittsburg Unified School District, titled **IMPACT**– Improving Mathematics through Pittsburg's Active Collaboration of Teachers. IMPACT's mission is to improve student achievement by developing the math content knowledge and pedagogical skills of 35 3rd-8th grade teachers to better prepare students for Algebra 1 success and rigorous high school math courses. (**PI**)
- 2009-2012 California Math and Science Partnership (CaMSP)** grant with Antioch Unified School District, titled **ATEAM**– Antioch:Teaching the Essentials of Algebra Mastery. Created intensive curriculum (60 hours per three summers) and teaching 65 teachers in grades 3-7 to

improve their knowledge of the math fundamentals and understanding of the underlying concepts in an effort to better prepare them and their students for Algebra I. (PI)

2010-2011 Grant from PG&E to create math modules to teach in middle school math classes, demonstrating the application of math to real-world situations, with an emphasis on energy related applications.

2010-2011 Strengthening Math Instruction (SMI) seminar: developed a pre-service workshop SMI geared to professors throughout CSU who teach the math methods courses to potential high school teachers. Funded by the Chancellor's office.

2010-2011 Served as Advisor to the Foundational Math program, a one year program for candidates getting a Foundational Math Credential.

2009 Served as Math Consultant to a summer Algebra Academy program, serving predominantly African American rising 8th and 9th graders in a 5-week intensive summer program. The program is run by RT Fisher, with support from CSUEB.

Professional Experience

1997-1998 Senior Research Mathematician, Vista Research Inc, Mountain View, CA

1987-1997 Senior Research Mathematician, SRI International, Menlo Park, CA

1986-1987 Senior Software Mathematician, Ferranti International Controls, Sugarland, TX

1984-1985 Mathematician, Shell Development Co, Houston, TX

1982-1983 Mathematician, Exxon Production Research, Houston, TX

Publications

1. Olkin, J. & Callahan, K (2016). *Math 805, Math 806, Math 807 Textbook*. Hayden-McNeil LLC, Macmillan Learning Curriculum Solutions.
2. Naghshineh, K., Olkin, J, Heck. L.P., & Kamman, J.W., (1998). Evaluation of an actuator placement method for active noise control applications. *ASME Journal of Vibration and Acoustics*, **120**, No. 4, pp. 875-879.
3. Olkin, J, Heck, L.P., & Naghshineh, K. (1998). Transducer placement for broadband active vibration control using a novel multidimensional QR factorization. *ASME Journal of Vibration and Acoustics*, **120**, No. 3, pp. 663-671.
4. Barnum, J, Nowlin, W.D., & Olkin, J. (1997). Detection of ships with OTH radar using short integration times. *Proceedings of IEEE National Radar Conference, Syracuse, NY* pp. 1-6.
5. Heck, L.P., Olkin, J., & Naghshineh, K. (1996). Evaluation of the multidimensional QR algorithm for automated actuator placement in active control applications. *Proceedings of ASME International Mechanical Engineering Congress and Expositions, Atlanta, GA*, **22**, pp. 15-19.
6. Olkin, J & Titterton, P.J. (1996). Using semi-definite programming for H^2 controller design with multiple simultaneous H^2 constraints. *Journal of VLSI Signal Processing*, **14**, No. 1, pp. 57-67.
7. Naghshineh, K., Olkin, J, Heck. L.P (1996). Automated placement of transducers for active noise control: performance measures. *IEEE Proceedings of International Conference on Acoustics, Speech and Signal Processing*, **2**, pp. 969-972.
8. Flamm, D.S., Heck, L.P., Olkin, J, Heck, L.P., Titterton, P.J., Nowlin, W.C., Chou, K.C. (1995) Control system design for the SPICES smart structure demonstrations. *Proceedings of SPIE Conference on Smart Structures and Materials*, **2447**, pp. 237-248.
9. Olkin, J & Titterton, P.J. (1995). A practical method for constrained optimization controller design: H^2 or H^∞ optimization with H^2 and/or H^∞ constraints. *Proceedings of the IEEE 29th Asilomar Conference on Signals, Systems and Computers*, **2**, pp.1265-1269.
10. Olkin, J & Titterton, P.J. (1995). Semi-definite programming for quadratically constrained quadratic programs. *Advanced Signal Processing Algorithms, Proceedings of SPIE Conference, San Diego, CA*, **2563**, No. 17, pp. 193-206.

11. Olkin, J & Douglas, S.C. (1993). Multiple-input, multiple-output, multiple-error adaptive feedforward control, using the filtered-X normalized LMS algorithm. *Proceedings of the Second Conference of Recent Advances in Active Control of Sound and Vibration*, pp. 743-755.
12. Chan, T.F. & Olkin, J (1994). Circulant preconditioners for Toeplitz-block matrices. *Numerical Algorithms*, **6**, No. 1-2, pp. 89-101.
13. Olkin, J, Freed, M.S. & Jungers, P.D. (1994). SRI weights algorithms and performance simulation (SWAPS) code. *Technical Report, SRI International*, pp. 1-59.
14. Chan, T.F., Cooley, D.W., & Olkin, J (1992). Solving quadratically constrained least squares using black box solvers. *BIT*, **32**, pp. 481-494.

Presentations/Workshops

- 2017** *Presentation: Using ABCD Response Cards for Peer Instruction*, Back to the Bay.
- 2016** *Workshop: Created and taught a one-day math workshop for high school math teachers in Pittsburg Unified for their mandatory professional development day.*
- 2016** *Presentation: Association of Mathematics Teacher Educators (AMTE), "Co-Teaching Across the Pipeline: Encouraging Discourse Among Students, Teachers, and Prospective Teachers."*
- 2015** *Workshop: Collaborated and taught two one-day math workshops for 6-12 grade math teachers in Castro Valley Unified for their mandatory professional development day.*
- 2013** *Presentation: Invited colloquium speaker to the Math Department at Sonoma State University.*
- 2013** *Workshop Taught a Foundations of Algebra workshop for middle school and high school Algebra teachers in San Lorenzo School District.*
- 2012-2015** *Workshop: Developed and taught several week-long intensive workshops for Contra Costa County teachers (supported by Leshar Foundation). The separate workshops covered content in Algebra I, Algebra II, and Geometry.*
- 2011-2012** Participated in a Faculty Learning Community on Learning and Assessment
- 2009-2013** *Workshop: Taught 24 hours of professional development to Secondary School math teachers, in three 8-hour days. The curriculum is the Strengthening Mathematics Instruction program, part of the Early Assessment Program training for CSUs. I have given this training three times.*
- 2012** *Poster: titled "Closing the Math Achievement Gap with African American Students: A Case Study" as part of the Faculty Poster Session sponsored by CSUEB.*
- 2010-2011** *Workshop: Taught two 6-hour Strengthening Math Instruction seminars to CSU professors who teach the Math Methods courses.*
- 2011** *Presentation: CMSESMC Mathematics/Science Conference, Council of Math/Science Educators of San Mateo County, 60 minute workshop on "What's Holding This Up? Using Underlying Math Structures"*
- 2010** *Presentation: Asilomar Mathematics Conference, California Mathematics Council-North, 90 minute workshop on "What's Holding This Up? Using Underlying Math Structures"*
- 2010** *Presentation: Office of Faculty Development: "Engaging Students With a Few New Ideas: A Bright Ideas Roundtable"*
- 2010** *Presentation: "Introduction to Linear Programming" to the CSUEB Math Club*
- 2010** *Workshop: Math workshop for middle school girls at Expanding Your Horizons conference at Diablo Valley College*
- 1987-1997** Numerous presentations at professional conferences (SIAM - Society for Industrial and Applied Mathematics) and to clients such as Department of Defense, while employed at SRI.

Honors and Awards

- 2017** CSU East Bay Provost Award on Outstanding Scholar on Issues of Diversity, Social Justice and Multiculturalism.

1997 Outstanding Oral Presentation winner at IEEE National Radar Conference, Syracuse, NY

1989-2000 Winner of numerous speech contest awards in Toastmasters, Bay Area, CA, at Club, Area, Division and District levels.

1984 Recipient of Grant-In-Aid award from Getty Foundation

Service

2017- Graduate Coordinator for the Mathematics Department

2017-2018 Chair, Search Committee, Mathematics Department

2017-2018 Participate in pilot program, testing the Quantitative Reasoning rubric in my math course.

2014-2017 Co-Chair, Board of the Institute for STEM Education. Faculty Board Member since inception, 2012.

2016 Co-Lead, Subcommittee on Quantitative Reasoning ILO rubric development.

2010-2016 Organized a Meet & Greet session for all Math Masters students. Presented information on classes and comprehensive exams. Held every even year during the beginning of Fall Term.

2009-2015 Served as Department Liaison to College of Science for the Science Festival. Participated in the Science Festival, held every odd year during Fall Term. Created and manned the “Can You KenKen” booth and puzzle booths, and recruited many student volunteers to help out.

2007-ongoing Chair of the Math Comprehensive Exams Committee, responsible for writing and grading the Math Comprehensive Exams and all organizational tasks including registration, proctoring, keeping records of student performance, etc.

2010-2014 Member of Academic Senate representing College of Science (two sequential two-year appointments)

2008-2010 Chair, Committee on Research (two-year appointment)

1994 Chair, Committee to review Vacation/Sick Leave policies and make recommendations for Improvements. Endorsed by CEO of SRI International

1991-1992 Editor, Society for Industrial and Applied Mathematics Special Interest Group in Linear Algebra electronic newsletter

Membership

CAMTE California Association of Mathematics Teacher Educators

MAA Math Association of America

NCTM National Council of Teachers of Mathematics

SIAM Society of Industrial and Applied Mathematics

Sigma Xi The Scientific Research Society