

MANUEL L. REYES

CURRICULUM VITAE

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EDUCATION

University of California, Berkeley, Ph.D. Mathematics, 2010. Advisor: Tsit Yuen Lam.
Dissertation: *One-sided prime ideals in noncommutative algebra*.
Westmont College, B.S. Mathematics and Physics (double major), 2005.
Summa cum laude, Phi Kappa Phi.

AWARDS, FELLOWSHIPS, AND SCHOLARSHIPS

2010-2011 UC President's Postdoctoral Fellowship.
2007–10 Ford Foundation Predoctoral Fellowship.
2005–07 Chancellor's Distinguished Fellowship, UC Berkeley.
2005 Mathematics Department graduate of the year, Westmont College.
Physics Department graduate of the year, Westmont College.
2004–05 NSF Computer Science, Engineering, and Mathematics Scholarship, Westmont College.
2004 Wheelon Scholarship, Westmont College Physics Department, Fall 2004.
2003 Westmont College Mathematics Department Leonhard Euler Outstanding Sophomore Award.
2002–04 American Physical Society Minority Scholar.
2001–05 Presidential Scholar, Westmont College.
2001 George Bate Physics Scholarship, Westmont College Physics Department.

RESEARCH INTERESTS

Noncommutative and commutative rings, multiple types of primes in commutative and noncommutative rings, noncommutative algebraic geometry.

PUBLICATIONS AND PREPRINTS

- *Noncommutative generalizations of theorems of Cohen and Kaplansky*, submitted.
- *A (one-sided) Prime Ideal Principle for noncommutative rings*, submitted to J. Alg. Appl., arXiv:0903.5295v2 [math.RA].
- *Oka and Ako Ideal Families in Commutative Rings* (with T. Y. Lam), Rings, Modules, and Representations, 263–288, *Contemp. Math.*, **480**, Amer. Math. Soc., Providence, RI, 2009.

- *A Prime Ideal Principle in Commutative Algebra* (with T. Y. Lam), *J. Algebra* **319** (2008), pp. 3006–3027.

PRESENTATIONS

- 2010 Ohio State University, 30th Ohio State - Dennison Conference, *A (one-sided) Prime Ideal Principle for noncommutative rings*.
 Wellesley College, *The trace of a matrix and Prime Ideals: from commutative to noncommutative algebra*.
 University of Colorado at Colorado Springs, Mathematics Department Colloquium, *Theorems of Cohen and Kaplansky: from commutative to noncommutative algebra*.
 Bowdoin College, *Prime ideals in commutative algebra*.
- 2009 UC Berkeley, Graduate Student Colloquium (inaugural lecture): *Theorems of Cohen and Kaplansky: from commutative to noncommutative algebra*.
 UC Berkeley, Quantum Groups course (Math 216B): *Quantum GL_2* .
 UC Santa Barbara, Noncommutative Algebra Day: *A (one-sided) Prime Ideal Principle for noncommutative rings*.
 UC Berkeley, Ring Theory Seminar: *Noncommutative generalizations of theorems of Cohen and Kaplansky*, parts I–III.
- 2006 UC Berkeley, Many Cheerful Facts Seminar: *Rings with invariant basis number*.
- 2005 Westmont College, Natural and Behavioral Sciences Seminar (with Justin Marks), *Machine learning: an average-case analysis of the Nearest Neighbor Algorithm*.
- 2004 Westmont College, Celebration of Summer Research: *Machine learning: an average-case analysis of the Nearest Neighbor Algorithm*.

TEACHING EXPERIENCE

- 2007–09 Graduate Student Instructor, UC Berkeley Department of Mathematics.
Duties: Taught hour-long discussion sections three times per week, created and graded quizzes, held office hours, graded weekly problem sets, held review sessions for exams, helped grade midterms and final exams.
Courses: Linear Algebra and Differential Equations, Honors Linear Algebra and Differential Equations, Multivariable Calculus, Calculus I.
- 2006 Assistant Teacher, Summer Math and Science Honors (SMASH) Academy, Algebra I. Funded by the Level Playing Field Institute, the SMASH Academy serves high achieving, low-income high school students of color in the San Francisco Bay Area who are passionate about math and science.
Duties: Assisted in the teaching of Algebra I, tutored individuals and small groups of students, and contributed to course planning.

2002–05 Teaching Assistant, Westmont College.

Duties: Held weekly homework review sessions as well as exam review sessions.

Courses: Linear Algebra, Mathematical Physics, Differential Equations, Modern Physics, General Physics I–II.

RESEARCH EMPLOYMENT

2004 Summer Research Assistant, Westmont College Department of Mathematics. Mentor: C. Ray Rosentrater. Conducted mathematical research on average-case analyses of machine learning algorithms.

2003 Intern, Stanford Linear Accelerator Center, Student Undergraduate Laboratory Internships summer program. Mentors: Tom Glanzman and Willy Langeveld. Programmed software to collect and organize data from cosmic ray telescopes for use in high school science classrooms in the QuarkNet program.

PROFESSIONAL DEVELOPMENT

2009 Summer Institute for Preparing Future Faculty (elective course: Developing a Teaching Portfolio), UC Berkeley GSI Teaching & Resource Center. An interdisciplinary institute designed to prepare graduate students to transition into academic careers. Topics discussed include: history of US higher education, academic governance and mission, faculty roles and responsibilities, civic engagement, diversity, and ethics.

Workshops on teaching, UC Berkeley GSI Teaching & Resource Center:

- Digital Communication and GSI/Student Boundaries;
- Assessing Teaching and Learning.

2007 Teaching Workshop (Math 300 course), UC Berkeley Department of Mathematics.
Graduate Student Instructor Conference, UC Berkeley GSI Teaching & Resource Center.

CONFERENCES ATTENDED

2010 The 30th Ohio State - Dennison Conference, Ohio State University.

AMS/MAA Joint Mathematics Meeting (AMS Special Session on Graph Algebras), San Francisco, CA.

2009 Conference of Ford Fellows, Irvine, CA.

AMS/MAA Joint Mathematics Meeting (AMS Special Session on Noncommutative Algebra and AMS Session on Associative and Non-Associative Rings) Washington, DC.

Noncommutative Algebra Day, UC Santa Barbara.

2008 Conference of Ford Fellows, Washington, DC.

Noncommutative Algebra Day, UC Santa Barbara.

2007 Conference of Ford Fellows, Irvine, CA.

MATHEMATICAL AND ACADEMIC SERVICE

2008–10 Unbounded Representation (URep) founding member, UC Berkeley Department of Mathematics, 2008–present. URep is a graduate student group focused on issues of diversity that orchestrates student mentoring activities, open dialogues about diversity in mathematics, and panels on career opportunities. Contributing member of planning meetings. Also responsible for creating and continually managing a website (<http://math.berkeley.edu/~urep>) for the group, which makes the efforts of URep broadly known and shares important information on diversity in math.

2010 Panel speaker, *Welcome for Morehouse College students*, Berkeley Edge program.

2009 Moderator, Physical Sciences and Mathematics Academic Exchange Session, 2009 Conference of Ford Fellows.

Referee for Journal of Algebra and Its Applications.

Julia Robinson Mathematics Festival, “Math staff.” Led students in grades 6–12 through in day-long problem solving activities. Coached both individuals and small groups through solutions to the problems.

Panel speaker:

- *Closing panel of graduate student leaders*, Berkeley Edge Conference.
- *How and Why Graduate Students are Improving Academic Departments and Science by Increasing Diversity*, Berkeley Edge Luncheon.

2008 Julia Robinson Mathematics Festival, “Math staff” (see above for details).

Panel speaker:

- *Workshop: How to find an advisor*, UC Berkeley Math Graduate Student Association
- *Successfully Obtaining Your Ph.D at Berkeley*, Berkeley Edge conference
- *Workshop on obtaining graduate school fellowships*, UC Berkeley Math Graduate Student Association

2003–04 Math Club Assistant Teacher, Caesar E. Chavez Elementary School (Santa Barbara, CA), 2003–2004. Helped conduct math enrichment activities for elementary school students at an English-Spanish language immersion school.