

UNIVERSITY OF CALIFORNIA  
**EDUCATION  
 PARTNERSHIPS**  
*SPOTLIGHT ON TEACHING*



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*Putting Research into Practice to Improve California Education for All*

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***“That’s So PLI”***:

***Modeling Collaboration, Accountability, and Inclusion in UC’s Principal Leadership Institutes***



Professor Lynda Tredway infuses the courses she teaches for UC Berkeley’s Principal Leadership Institute with active learning. “If we don’t model everything in the pedagogy of the University classroom that we expect from our leaders, then we are doing a disservice to our students when they become principals. Our classrooms are designed around what we want to see in the K-12 classroom: active and collaborative learning, individual and group accountability.” (Continued on page 2.)

***“Just Doing Math” and More***:

***How One Graduate Student Integrates Social Justice with Math Instruction***



Mary Candace Full’s passion for educational equity began in high school. Always interested in social justice, Full chose a high school senior project in which she studied the opportunity gap in K-12 education by comparing two middle schools—her former middle school, which had been identified as a Title 1 school in the first year of No Child Left Behind, and a well-resourced neighboring one. Her interest in education developed further through coursework at Cal. (Continued on page 3.)

***CalTeach and Early Field Placement***:

***Designing and Supporting STEM Teacher Training***

After participating in CalTeach at UC Santa Cruz, math student Gaby Iniguez decided to pursue her Master’s degree / teaching credential there. She is now employing the pedagogical skills she began developing at CalTeach in an El Centro, California high school classroom. “Some days are more challenging than others and I get home tired, but it is great,” asserts this engaged algebra teacher. Iniguez is joined by over two thousand other science, technology, engineering, and math (STEM) majors who developed a passion for teaching through their enrollment in one of UC’s nine CalTeach programs. (Continued on page 4.)

## FEATURE ARTICLE

***“That’s So PLI”:*** *Modeling Collaboration, Accountability, and Inclusion in UC’s Principal Leadership Institutes*

Professor Lynda Tredway infuses the courses she teaches for UC Berkeley’s Principal Leadership Institute (PLI) with active learning. “If we don’t model everything in the pedagogy of the University classroom that we expect from our leaders, then we are doing a disservice to our students when they become principals. Our classrooms are designed around what we want to see in the K-12 classroom: active and collaborative learning, individual and group accountability. We model how we expect our principals to conduct professional development for teachers; the principals then model how they want teachers to interact with students, and the teachers engage students actively in learning.”

Ten years ago, the California legislature challenged the University of California to increase its commitment to preparing educational leaders for the State’s urban schools. In response, UC Berkeley and UC Los Angeles each established a Principal Leadership Institute in 2000. The PLI programs on both campuses are designed to prepare instructional leaders—administrators and teacher leaders—with the knowledge and expertise necessary to improve teaching and learning in urban schools. By integrating research and practice, program graduates gain a deep understanding of the challenges facing underperforming urban schools, as well as how to identify and leverage the assets of those schools and their surrounding communities to promote rigorous, high-quality learning.

PLI candidates are practicing educators who participate as a cohort in a rigorous 14-15 month program that includes coursework, problem-based learning, field experience, and a culminating research project. According to Nancy Parachini, Director of PLI at UCLA, “Our PLI graduates leave the program fortified with the courage to engage all stakeholders in difficult conversations about public policy, equal access to resources, school reform issues, academic achievement, and college access for all.”

Since its inception, over 700 leaders have completed the PLI program; most of them going on to transformative work in urban schools.

A teacher for more than 40 years with experience at all age levels, Tredway observes, “In adult learning, it’s rare that we practice what we preach in terms of infusing classrooms with collaboration, equity, and deep thinking.” She recalled a conversation she had with a PLI graduate who became an assistant superintendent. He had hired another PLI graduate to conduct professional development and commented to Tredway on the inclusive style, “That’s so PLI.” According to Tredway, “That’s just good teaching and learning.”

If you or an educator you know might be interested in participating in the Principal Leadership Institute, information about upcoming PLI orientations, workshops and events can be found on their websites. Learn more about UC Berkeley PLI at <http://gse.berkeley.edu/program/principals/pli.html> and UCLA PLI at <http://centerx.gseis.ucla.edu/principal-leadership/>.



*Lynda Tredway (bottom left) celebrates with the UC Berkeley PLI graduating cohort and their proud relatives.*

**“If we don’t model everything in the pedagogy of the University classroom that we expect from our leaders, then we are doing a disservice to our students when they become principals.”**

**Of UCLA’s graduates:**

- 79% of the principals who responded to an alumni questionnaire serve in high-poverty schools.
- 100% of the principals leading high-poverty schools demonstrated growth on the API over the past three years, with an average growth of 50 points.

**Of UC Berkeley’s graduates:**

- Over the first eight cohorts, there is a 94.6% retention rate in administrative positions, far above the national average.
- Oakland Unified School District awarded five PLI graduates Educational Leadership Awards in 2009, including one for a “rookie” principal who had a 39 point gain in a school that had “flat-lined” for four previous years.

## PERSONAL PROFILE



## “Just Doing Math” and More:

*How One Graduate Student Integrates Social Justice with Math Instruction*

Mary Candace Full’s passion for educational equity began in high school. Always interested in social justice, Full chose a high school senior project in which she studied the opportunity gap in K-12 education by comparing two middle schools—her former middle school, which had been identified as a Title 1 school in the first year of No Child Left Behind, and a well-resourced neighboring one.

Her interest in education developed further through coursework at Cal. As an undergraduate, she took a class in African American studies on racism and schooling, during which she volunteered at Berkeley Technology Academy, a continuation high school serving 16-18 year olds at risk of not graduating. There, she created projects designed to empower students by encouraging them to research a problem, and then take action on that issue. Her 12th graders thought there was not enough of a campus community culture at the school. After conducting surveys of their fellow students, Full’s class created the school’s first awards ceremony and talent show.

“What I love about math is that it can push you to be a critical thinker, to create proofs, to construct arguments, to force you to think about how things work.”

Through various course field hours and volunteer work, Full gained extensive experience student teaching at numerous schools throughout the Bay Area, from preschool to high school.

She observed that subjects such as English and history often had strong social justice components built into

lesson plans, but thought there were not enough math and science courses that were culturally relevant. For that reason, she decided to teach math.

A sociology major and education minor, she had always enjoyed math. “What I love about math is that it can push you to be a critical thinker, to create proofs, to construct arguments, to force you to think about how things work.”

Full continued to pursue her interest in social justice pedagogy through the class, Teaching Mathematics and Science: A Focus on Equity and Urban Schools, in which she did a field placement at Emery Secondary School. There, she found inspiration with her mentor teacher, Cherisse Payne, who both “balanced care for students and challenging and pushing them” and encouraged Full to think about diversity in the math classroom when creating lessons.

A highlight of this field placement in 9th grade algebra included working closely with two English Language Learner students. “Supporting students to find joy in math is a struggle for all teachers, especially when students are still learning English. So to work with these students in new ways, to create differential instruction in math concepts, seeing what would inspire them to learn, was particularly rewarding. I remember laughing with them, going outside and measuring things, and just doing math.”

Now in her final year in UCLA’s Teacher Education Program, Full is writing her master’s thesis on youth participatory action research in the math classroom, and teaching her own 9th grade algebra class at Esteban E. Torres High School in Los Angeles. “For me, it’s not just about reaching one student, but about changing the educational system so it reaches all young people.”

To learn more about social justice math, go to <http://www.radicalmath.org/> or read a book review of Eric Gutstein’s *Reading and Writing the World with Mathematics: Toward a Pedagogy of Social Justice* (New York: Routledge, 2006) at <http://www1.chapman.edu/ITE/16gariireview.pdf>.

To learn about Critical TEP (Teacher Education Pedagogues), an organization co-founded by Mary Candace Full as a teacher-led professional development group, go to <http://criticaltep.wordpress.com/>.

## BEST PRACTICES

*CalTeach and Early Field Placement:**Designing and Supporting STEM Teacher Training*

After participating in CalTeach at UC Santa Cruz, math student Gaby Iniguez decided to pursue her Master's degree / teaching credential there. She is now actively employing the pedagogical skills she began developing at CalTeach in an El Centro, California high school. "Some days are more challenging than others and I get home tired, but it is great," asserts this engaged algebra teacher. Iniguez is joined by over two thousand other science, technology, engineering, and math (STEM) majors who developed a passion for teaching through their enrollment in one of UC's nine CalTeach programs. This passion is fueled by such CalTeach best practices as specialized classes with direct work in K-12 classrooms that complement disciplinary studies and prepare participants to pursue a teaching credential after receiving their bachelor's degree.

CalTeach is one of UC's responses to the lack of qualified science and math teachers in California—a lack that poses a threat to California's economic future. The state depends heavily on science and technology fields, and the key to ensuring economic competitiveness means providing high-quality math and science instruction to California's youth. Undergraduates in the STEM fields have career opportunities that are far more lucrative than teaching in K-12 schools, however. As a result, students in K-12 are often taught math and science by non-credentialed instructors, or instructors whose areas of expertise are in the arts and humanities. Students in this situation rank at or near the bottom nationally in math and science. Given impending teacher retirements and growth of the K-12 population, one-third of students in the next five years will find themselves in classrooms without a qualified math or science teacher.

Observes Mark Richards, Executive Dean, College of Letters and Science, UC Berkeley, "Science. Mathematics. Engineering. These are the elite core professions. A large segment of our population is being shut out of that from the day they walk into kindergarten classes. This is more than just a matter of competitiveness for our country. It's really a matter of social justice." In the last five or ten years, Richards says, arguments in education circles about pedagogy have reached a consensus about what matters most: the quality of the teachers.

To both address the critical shortage of math and science teachers and improve the quality of STEM teachers, the

University of California and Gov. Arnold Schwarzenegger launched The Science and Mathematics Initiative (SMI), also known as CalTeach, in 2005. Through CalTeach, the University of California actively recruits and prepares mathematics and science majors for future teaching careers.

As CalTeach has evolved over the past five years, UC faculty has vigorously designed campus programs integrating research and practice in teacher preparation. While the CalTeach programs have a distinct character and history deriving from the disciplinary and pedagogical strengths of each campus, one of the distinguishing features of every CalTeach Program is the extensive early field work. CalTeach students are paired with mentor teachers and spend 30 hours per term in K-12 classrooms. As part of these field placements, they observe, assist, and teach under the guidance of their mentors. UC CalTeach students gain valuable "hands-on" experience during their field placements, acquiring instructional tools and techniques from expert teachers in the field.

**"Science. Mathematics. Engineering. These are the elite core professions. A large segment of our population is being shut out of that from the day they walk into kindergarten classes. This is more than just a matter of competitiveness for our country. It's really a matter of social justice."**

In addition, many of the mentor teachers note that CalTeach participants exemplify positive role models for the students in their classrooms. Some teachers describe them as "ambassadors" who instill an excitement for science and mathematics as well as inspire aims of college attendance among the K-12 students with whom they work. In 2009-2010, 980 students were enrolled in CalTeach courses that included a field placement. To date, CalTeach students have worked with more than 1000 mentor teachers throughout 420 schools, providing California K-12 classrooms with a total of 61,378 classroom visits.

To learn more about the Science and Math Initiative, go to <http://www.universityofcalifornia.edu/academics/1000teachers/>.

## RESEARCH AND POLICY NEWS

## HONORS AND AWARDS

## The Science of Performance Improvement

*Putting the Day-to-Day Work of Educators at the Center of the Inquiry*

The stakes for improving education in the United States have never been higher and the demand for productive research and development (R&D) never more important. However, this enterprise is not leading to solutions for major educational problems. In "Support a Science of Performance Improvement," (*Phi Delta Kappan*, April 2009) Anthony S. Bryk, President of the Carnegie Foundation for the Advancement of Teaching, Stanford, California, argues that "The nation needs an entrepreneurial approach to education R&D with a focus on student success as the goal." The article discusses the need for reengineering both how we carry out educational R&D and the schools in which this work occurs if we want to achieve more productive ends.

Watch Bryk talk about the science of performance improvement at <http://www.sree.org/conferences/2010/video/bryk.php>.

## Teacher Layoffs: An Empirical Illustration of Seniority v. Measures of Effectiveness

*July 2010. Donald Boyd, Hamilton Lankford, Susanna Loeb, and James Wyckoff.*

This policy brief illustrates the differences in New York City public schools that would result when layoffs are determined by seniority in comparison to estimated teacher value-added measures, which indicate the importance of teachers as a source of variance in student outcomes. Teacher value-added measures are limited in their application due to concerns about potential mis-measurement of effectiveness, whereas ignoring effectiveness measures completely, as seniority-based systems do, is also problematic. The use of multiple measures of effectiveness for layoff decisions holds promise for softening the detrimental effect of layoffs.

Read more at <http://www.teacherpolicyresearch.org/portals/1/pdfs/TeacherLayoffs%20July2010.pdf>.

## PacTIN awarded \$1 million for Teacher Quality Grant

The Pacific Coast Teacher Innovation Network (PacTIN), co-housed at the UC Davis School of Education's CRESS Center and the Humboldt State University's Science and Mathematics Program, received more than \$1,000,000 (million) from a federal Improving Teacher Quality T-BAR Grant. Administered by the California Postsecondary Education Commission, the grant was given in recognition of the many outstanding teachers in California's schools who have creative and innovative ideas for enriching teaching and learning in their classrooms and schools. Learn more at <http://teachergrants.ucdavis.edu>.

## ANNOUNCEMENTS

### Honor a Life-Changing Teacher

*Deadline for nominations is March 15, 2011*

Your students have the opportunity to honor a teacher who has had a profound effect on their lives. The Carlston Family Foundation's award-winning teachers come to the attention of the Foundation by former students, currently attending or recently graduated from four-year institutions of higher education. These students believe their high school teachers were responsible for providing the necessary guidance, mentoring, and academic skills for them to achieve success. To date, the Foundation has honored 36 exceptional California secondary teachers who "demonstrate the value of knowledge through their commitment to their students' academic successes, and...encourage other educators to simulate these successful teaching patterns."

Each Honoree receives a \$15,000 cash award and their high school receives a cash award of \$5,000. In addition, Honorees become members of an Advisory Board dedicated to improving instruction in California classrooms.

Please share this opportunity to nominate a teacher with your students. Learn more and nominate a teacher online at <http://www.carlstonfamilyfoundation.com>. Your students can also nominate a teacher by contacting Tim Allen, Executive Director, by phone at 415-388-4763 or by email at [Tima@carlstonfamilyfoundation.com](mailto:Tima@carlstonfamilyfoundation.com).

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