

Catalyst

FALL 2015



Can **restorative justice** live up to its promises to students? **10**



"All of us—educators, teachers, students and community members—should be deeply concerned about the disproportionate ways that students of color are disciplined."

— Harold G. Levine

Our cover story on restorative justice goes to the heart of the School of Education's vision, which is to eliminate inequities in the schooling opportunities for diverse learners. All of us—educators, teachers, students and community members—should be deeply concerned about the disproportionate ways that students of color are disciplined in classrooms and campuses across the country.

We believe that a crucial way we can tackle educational inequities is through research. We cannot build change on a foundation of good

intentions. Everyone involved in education, from local teachers and administrators to state and national policymakers, needs real data on which to base their decisions.

As you'll see in these pages, our faculty and students are responding to the needs of diverse student populations with research and data through many different lenses. And each time they bring forth a new piece of game-changing research, we're impacting the lives of students far beyond our region. That's how we live our vision as a school every day. ■



▲ Clayton Stromberger participating in Shakespeare Works when Shakespeare Plays, September 2015.

Thanks from a Shakespeare conference participant

I want to thank you for an amazing weekend of “Shakespeare Works when Shakespeare Plays” and for all that your school is doing in the area of promoting active and life-changing approaches to the teaching of Shakespeare. As a 4th grade teacher in Texas in the '90s who was passionately devoted to introducing the fun of performing Shakespeare to my disadvantaged students, I frequently felt I was tilting at windmills (let's just say my administrators were not fans)—so to now discover a prestigious School of Education that is making this work a priority and linking with creative Shakespeare educators across the U.S. and in the U.K. is like something out of a dream.

*Clayton Stromberger
Outreach Coordinator, UT Shakespeare at Winedale
Austin, Texas*

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Catalyst

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Learn More

Visit education.ucdavis.edu/fall15catalyst for links to additional material and event information.



Welcome Professor Deb Niemeier

Deb Niemeier, PhD, PE has joined our faculty in a joint appointment with the Department of Civil and Environmental Engineering. “Being able to find the intellectual frontiers in both education pedagogy and engineering education requires that both fields learn from each other,” said Niemeier, “and I’m really looking forward to doing just that.”

Dean Harold Levine Chairs WestEd

Dean Levine, who has served on the WestEd Board of Directors for seven years, was elected Chair this summer. “WestEd is at the nexus of many challenging issues facing public education,” said Levine, “and continues to make a difference for families, teachers, administrators and underrepresented groups.”



Alexis Patterson, PhD Joins Faculty

Alexis Patterson, PhD, joined the School of Education this fall as an Assistant Professor of Elementary Science Education. Patterson earned her undergraduate degree from UC Berkeley, her Multiple Subjects Teaching Credential from CSU East Bay, and her master’s degree from Stanford University. She returned to Stanford to earn her doctorate in Curriculum Studies and Teacher Education in Science from Stanford’s Graduate School of Education. Patterson worked in Oakland Unified School District as an assistant director of an after-school program, as a middle school science teacher, and as an intervention instructor at an elementary school. Her interests are in science education, urban education, small group work, and social-emotional intelligence. “The School of Education’s emphasis on diverse learners is so important to me,” said Patterson. “That’s the heart and crux of my research—better understanding diverse learners and increasing the pathways for them to science fields.”

In Memoriam: Larry Vanderhoef

The UC Davis community mourns the loss of Chancellor Emeritus Larry Vanderhoef, who died on October 15. Chancellor Vanderhoef’s vision and support were crucial to the development of the School of Education. “Chancellor Vanderhoef provided the inspiration, the charge and the resources to make the School of Education a reality,” said Dean Levine. “Without Chancellor Vanderhoef, there would be no School of Education. He was an extraordinary leader and an even more extraordinary human being. He will be missed.”



Partnering for STEM Scholarships

Lydia Baskin had been considering establishing a scholarship for some time when the School of Education approached her with a new opportunity: donors Nancy and Tom Patten would provide a one-to-one match to help her establish an endowed fund. Now the Lydia and Ronald Baskin Family Scholarship Award to support teaching credential and master's students who are interested in teaching STEM subjects in public elementary schools has been endowed and will support students beginning fall quarter 2016.

Baskin was inspired by her fifth-grade teacher to become a teacher herself. She taught for 30 years in three school districts, and finished her career in Davis public schools after her husband Ron became a professor of zoology at UC Davis. "I served on the Davis Schools Science Committee and some of my classes won trophies in the Yolo County and Sacramento Science Fairs," said Lydia. "I used science weekly to teach reading, math and writing, both factual and creative."

Lydia's husband Ron would also visit her classroom and do science projects with the students. "When he became the department chair, Ron had a science and math conference on campus where students could do activities," she said. "He wanted students to think about science being part of their future lives."

To learn more about the Pattens' match for endowed scholarships or the Next Generation STEM Teaching Award, please contact Angela Reynolds at areynolds@ucdavis.edu.



▲ Lydia Baskin, left with Nancy and Tom Patten.

CAP-Ed and Capacity-Building

The Center for Applied Policy in Education (CAP-Ed) System Transformation Collaborative, a joint project with CAP-Ed and the Michael Fullan Group, is entering its third and final year of applied research on how to best develop and sustain inter-district and district-wide focus on learning and teaching for improved student achievement. "We're looking forward to seeing whether organized cycles of local inquiry and capacity-building can be an effective way to create large-scale school improvement," said CAP-Ed Executive Director Thomas Timar. "This approach really turns the process of school improvement on its head. Rather than being a top-down effort, we're developing leadership, skills and capacity at the school level."

This fall, CAP-Ed welcomed its eighth cohort of 20 superintendents to the Superintendents' Executive Leadership Forum, which supports superintendents in moving away from a focus on management toward instructional leadership and capacity-building in school districts with systems thinking. CAP-Ed's California Institute for School Improvement (CISI) hosted its 33rd annual Fall Workshops, which included an update on state policy considerations for California school districts. CISI also recently published its annual resource guide, which provides school and district professionals with education news, tools, research and workshops.

New MA in Assessment

The new focus for our one-year master's degree in Education is Educational Assessment and Measurement. Students will develop skills in quantitative research methods and the interpretation, design and evaluation of educational and psychological assessments. Apply by January 15, 2016.

Author in Residence Sheila Hamanaka

This year's Author in Residence, Sheila Hamanaka, has been illustrating children's books since 1987. She is best known for her books on peace and multiculturalism. Her popular "All the Colors of the Earth" celebrates the diversity of children and parents. Hamanaka presented to student teachers this fall.





REEd is taking full advantage of a **\$5.8 million Improving Teacher Quality State Grant** award. Now in its second year of implementation, the grant funds are being used to find better ways to develop, resource and sustain integrated systems for professional growth.

Educator effectiveness efforts are complex in that any action needs to factor in issues such as the limitations of growth measures, contract negotiations, and in California, locally controlled funding. REEd tells pilot districts not to ignore the complexity, but to place a stronger emphasis on something every school district can control—its own approach to building and sustaining a professional growth system.

“It’s a long-term investment,” said Project Co-Director Joanne Bookmyer, “and we ask our pilots to operate under the assumption that they will face setbacks and pitfalls. That’s when the learning, and the opportunity to change, happens.”

In response to pilot districts’ requests, REEd is partnering with Teachscape to build a calibration platform. It’s challenging work, but the potential payoff is a context-driven model that values teacher choice and voice; strong leadership within a growth-driven environment and mindset; on-going collaborative opportunities; and on-going, formative reflective processes that maximize the potential for instructional improvement.



▲ Participants in the 2015 Shakespeare Works when Shakespeare Plays conference.

Teachers Learn to Bring the Bard’s Work to Life

The School of Education offers a host of professional development programs focused on providing teachers with strategic, practical approaches to understanding Shakespeare’s work and the connections and applications that his work inspires. Through the **Globe Education Academy**, an annual cohort of Sacramento region teachers attends workshops locally, has a two-week summer residency at Shakespeare’s Globe in London, and brings together their students for a fall festival play. The three-day **Shakespeare Works when Shakespeare Plays conference** provides teachers with a host of techniques for enlivening their practice. Each year, the School hosts **pre-service workshops** for credential students and **in-service workshops** for teachers led by a master teacher from Globe Education. “We know that Shakespeare’s plays were meant to be acted, not read aloud in a classroom,” said Pauline Holmes, Lecturer and Supervisor of the English Credential Program. “We’re offering many different ways for teachers to learn dynamic teaching techniques that they can use to bring not only Shakespeare, but other material, to life.”

Toyota Education Day

This fall, the School of Education’s Agricultural Education program brought 60 students from Galt, Rio Linda and Florin high schools to the UC Davis campus through a Toyota Diversity Grant secured by the National FFA Organization. Attendees were all potential first-generation college students. The visitors’ full day included tours of the horse, swine, goat and dairy facilities, a UC Davis soccer game, and lots of time to talk about going to college. “Aggie Ambassadors presented on going to college, applying for grants, and how to be a transfer student,” said AgEd Program Coordinator Lynn Martindale. “Many had never been to a college campus before. We wanted them to see all the opportunities here.”

"It's the perfect coming together of kids learning things they're interested in and teachers teaching things that they love."

— Andee Press-Dawson

Adventures in Enrichment

Each summer, hundreds of children participate in Adventures in Enrichment, the School of Education's science summer camps. It's an experience that transcends the average classroom—for both students and teachers.

"For the kids, it's often the first time they're exposed to these science topics," said Andee Press-Dawson, Director of Community Programs

and Events. "Best of all, there are no tests, so they can learn for the sheer joy of learning."

Each class is led by experienced teachers, many hired from among School of Education graduates, who develop their own curricula and return year after year. Their class assistants often are UC Davis undergraduate students considering teaching careers.

See back page for a special preview event date.



Cassandra Hart

Assistant Professor Cassandra Hart is part of a team that has received a **\$1.6 million U.S. Department of Education grant** for a three-year study of K-12 virtual schooling in Florida. “School systems in many states are increasingly using online coursework to supplement traditional schooling options,” she said, “but we have very little evidence on how students use online courses, and how well students fare in those courses.” Hart has also been selected to be a Hellman Fellow for 2015-16.



Gloria Rodriguez

Associate Professor and Director of the CANDEL (EdD) Program Gloria Rodriguez has contributed a chapter on “Critical Mentoring Practices to Support Diverse Students in Education: Chicano/Latina Faculty Perspectives” to the Fall 2015 issue of *New Directions for Higher Education*.

“It’s ironic that the communities and age groups that stand to benefit the most from health improvement technologies are often those with the least access to them.”



— Associate Professor Cynthia Carter Ching, on what she learned when researching middle-school students in an urban after-school program who wore commercial activity monitors. “Wearing, Thinking, and Moving: Testing the Feasibility of Fitness Tracking with Urban Youth,” will appear in the *American Journal of Health Education*.

Kevin Gee

Assistant Professor Kevin Gee has received a 2015-2016 National Academy of Education/Spencer Postdoctoral Fellowship, a Young Scholars Program (YSP) award from the Foundation for Child Development (FCD), and a 2015-16 UC Davis Hellman Fellowship. His research on whether monitoring of student weights by schools is an effective tool in reducing obesity was published in *Journal of Adolescent Health* this summer, and reported on by the *New York Times*, *Scientific American*, *Reuters* and *Education Week*.

Tobin White

Associate Professor Tobin White has been selected to be a 2015-16 Chancellor’s Fellow. The program is supported in part by funds from the Davis Chancellor’s Club and the Annual Fund of UC Davis. The program honors the achievements of outstanding faculty members early in their careers; the committee that reviewed White’s record noted the high quality and significance of his research and teaching. He joins Professors Michal Kurlaender and Heidi Ballard, who were past recipients of this campus-wide honor.

Michal Kurlaender

Associate Professor Michal Kurlaender has secured three major grants recently. She received a **\$5 million U.S. Department of Education grant** to find out how well the State of California prepares K-12 students for college and careers and to understand how efforts to improve both high school rigor and information about college and career readiness can impact schools and students. She will explore degree/certificate completion and economic returns to Career Technical Education (CTE) programs at California community colleges through a **\$400,000 U.S. Department of Education funded researcher-practitioner partnership grant** with the California Community College Chancellor’s Office. And through a **\$400,000 College Futures Foundation grant**, Kurlaender and her team will test interventions designed to increase faculty-student interactions with the intended goal of increasing persistence and degree completion at large broad-access universities.

Yuuko Uchikoshi

In partnership with University of California, San Francisco researchers, Associate Professor Yuuko Uchikoshi has received a **\$2.5 million National Institutes of Health grant** to conduct a three-year longitudinal study on how students in grades K-2 acquire literacy through immersion in a foreign language. All students enrolled in the study are attending either Spanish or Cantonese dual immersion public school programs in San Francisco, and most have not yet acquired literacy. “We’ll be using annual fMRI scans to look at the changes in brain development as the children learn to read in two languages,” Uchikoshi said, “so we can see if acquiring literacy in a new language has the same impact as literacy in a child’s first language.” Uchikoshi will also compare brain changes in students in the Spanish/English programs with those in Cantonese/English programs, where there is a greater disparity between the writing systems.



Emily Solari

Associate Professor of Education Emily Solari has been awarded a **\$3.5 million U.S. Department of Education grant** to bring reading instruction to 100 first-grade classrooms in Sacramento, Yolo and other counties in the region as well as in Houston, Texas, over the next four years. The grant focuses on students who are struggling with early reading.

Solari recently opened the UC Davis Reading and Academic Development Center, where she and her research team will provide intensive interventions for children with reading difficulties. Solari is also conducting a pilot study on reading interventions for children with Autism Spectrum Disorder ages 7-11.

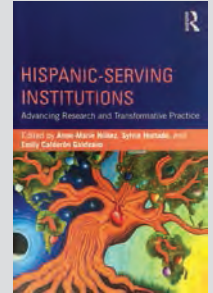
“The punch line is that for-profit colleges don’t yield any labor market advantages despite being much more costly than community colleges.”

— Assistant Professor Francisco (Paco) Martorell, on his paper “Do Employers Prefer Workers Who Attend For-Profit Colleges? Evidence from a Field Experiment.” He found no evidence that employers prefer applicants with resumes listing a for-profit college versus a community college...or no college at all.



Marcella Cuellar

Marcella Cuellar contributed a chapter to *Hispanic-Serving Institutions: Advancing Research and Transformative Practice*, which fills a critical gap in the scholarship on how institutions can better serve their Latina/o students.



Steven Athanases

Through the Teacher Inquiry Project at UC Davis and in collaboration with CSU Fresno faculty Lisa Bennett and Juliet Wahleithner (both UC Davis PhDs), Professor Steven Athanases published papers in the *Journal of Literacy Research* and *Action in Teacher Education* that examine the promise and challenges of learning from teacher inquiry in and beyond a teacher credential program. Athanases also received a 2015 UC Davis Diversity and Principles of Community Faculty Citation Award for career achievement in leadership in furthering equal opportunity and diversity objectives within the UC Davis community. He was honored with fellow committee members of the UC Davis STEAD Committee, which develops workshops on implicit and institutional bias and best practices to recruit excellent and diverse faculty.



Quit Teaching to the Test

Megan Welsh says focusing on good teaching is more effective

In districts where teachers and schools are being evaluated based on the test score gains of their students, everything is riding on making those test scores as high as possible. For educators under that kind of pressure, “teaching to the test” may seem like the only option. They hand out practice books and drill their students for days or weeks before each standardized test to ensure success.

That kind of test preparation is dismal and unsatisfying for teachers and students alike. **Assistant Professor Megan Welsh** is here to tell you that it also usually doesn’t work—and if it does, it indicates that there’s a problem with the quality of high-stakes assessments.

How Do Teachers Prepare Students for Standardized Test-Taking?

Welsh’s research focus is psychometrics—the study of how to develop high-quality measurements. “As a society, we measure things all the time,” she said, “and the bottom line is, if policymakers are going to keep using measurements to evaluate student performance, it’s important that those measurements are good ones.”

- ◀ Assistant Professor Megan Welsh focuses on test validity and analysis, the use of assessment as an educational reform lever, grading, and the evaluation of educational programs.

*"Instructional time is precious,
so we can't waste any of it."*

— Megan Welsh, PhD

Welsh started her teaching career as an elementary school bilingual Cantonese/English teacher in Oakland. A few years later, while she was working as a test director for an Arizona school district, she became interested in the effects of test preparation on test scores and on policymakers' ability to draw conclusions based on test scores.

"We were providing test materials for practice," she said, "and I observed teachers using these with their students. They were more focused on the students getting the correct answer than working on the skill that the question was trying to get at."

To evaluate the effect of test preparation practices on test scores, Welsh interviewed teachers about their math instruction and about how much time they spent teaching test-taking skills. Some teachers taught to the state standards without considering the content or format of the state test. As one of these teachers said, "My instruction isn't the critical point, their learning is the critical point... my job is to show them how to solve a problem."

At the other end of the test prep spectrum were teachers who focused on decontextualized

practice: requiring students to answer practice test items that mimicked the content and format of test items. Teachers with this strategy would often spend a substantial proportion of the school year on test prep.

"One teacher said that she stops using the district-mandated curriculum in March to focus on test preparation," said Welsh. "She told us, 'After Christmas break you have a couple months and it's like test prep from then on.'"

Testing the Test Results

Whose students did the best on standardized tests—teachers who taught to the test, or teachers who taught to the state standards?

"We observed no difference between students whose teachers focused on practice with test items and those that taught the standards more broadly," said Welsh. "Since the practice is ineffective, there's little reason to continue using it."

Her research is timely and sought-after: "Conceptualizing Teaching to the Test Under Standards-Based Reform" is the fourteenth most-downloaded paper from the Taylor & Francis Applied Measurement in Education website.

Good News or Bad News?

From Welsh's perspective, her results are good news for teachers who want to focus on best teaching practices, not test-taking.

"I don't think many teachers believe that intensive test prep is good instruction," she said, "but there's a tension there because they feel they have to do it." This is documented to be an especially big problem in urban areas.

Excessive test prep also takes away opportunities for students to practice higher order skills, solve problems and think critically—all the things that Common Core standards mandate. "Instructional time is precious," said Welsh, "so we can't waste any of it."

Ultimately, psychometricians are concerned with whether tests are designed and used properly—something which may be overlooked in the national discussion on standardized testing, and how tests can be used to evaluate teachers. "High-stakes testing can provide useful global information about whether students are performing at grade level," Welsh said, "but they're not designed to provide the kind of detailed information that's useful in guiding instruction." ■

Restorative Justice

Can it live up to its promise?

"If restorative justice work is done well, you build community and hopefully interrupt the potential for conflict down the road."

– Maisha T. Winn, PhD

Discipline in educational settings has traditionally been retributive—focused on punishments such as suspensions or expulsions, not rehabilitation. But there's a shift on the horizon, prompted by a growing awareness that punitive systems aren't netting stronger schools, improved student participation, or positive changes in behavior.

In addition, a preponderance of evidence demonstrates that punitive consequences are meted out in staggeringly disproportionate numbers to students of color, even though these students are no more likely to deserve punishment. A white child may be scolded for taking a candy bar from another student's backpack, but an African-American or Latino child may be arrested, creating potential conditions for a school-to-prison pipeline that has devastated minority communities.

School districts across the country are turning to restorative justice as a remedy. *Catalyst* asked three educators about the promise that restorative justice holds for changing the educational disciplinary environment.

Making the Victim Whole Again Rather than Just Punishing

"Restorative justice is a victim-centered response to harm which requires a paradigm shift from the ways in which Americans are typically accustomed to thinking about crime and punishment," said **Professor Maisha T. Winn, PhD**, who recently spent a day discussing restorative justice as the featured speaker in the School of Education's Distinguished Educational Thinkers speaker series. "There's a lot of punitive-centered ideology in the way we deal with each other. Restorative justice seeks to disrupt that by asking three questions: *Who has been hurt? What do they need?* and *Who is responsible for fulfilling those needs?* So restorative justice is making wrong things right."

There are different techniques for using restorative justice practices, but many schools regularly use dialogue circles to facilitate structured communication. "If restorative justice work is done well, you build community and hopefully interrupt the potential for conflict down the road," said Winn. "You're giving teachers, students and staff the tools to

- ◀ Professor Maisha T. Winn is the Susan J. Cellmer Distinguished Chair in English Education and Professor of Language and Literacy in the Department of Curriculum and Instruction at the University of Wisconsin, Madison. Winn researches the ways in which teachers and adult allies for youth in schools and in out-of-school contexts practice "justice" in the teaching of literacy.



"I suspended kid after kid as a vice principal and gosh, did it help them? No. Did it help the school? I don't think so. That's why I'm studying these issues now."

– Mariama Smith Gray

be in relationship with each other." However, she cautioned that if schools use circle processes only for conflict resolution, students will see restorative justice as "just another notch on the discipline belt."

Mariama Smith Gray, a doctoral candidate at the School of Education, has been a high school teacher and school administrator, and she believes that restorative justice serves victims far better than a punitive system. "Victims want to feel heard and understood," she said. "They want the person who hurt them to know how that wrong affected them, and they want that person to authentically acknowledge that hurt." Punishments such as suspensions may help administrators point to an easily recognizable consequence for unacceptable behavior, but fail to include the voice and need of the person who was wronged.

Creating Constructive Accountability

Advocates for traditional punishment models argue that suspensions and expulsions are important ways to hold students accountable for their actions.

Gray's experience doesn't support that. During the five years she was a high school vice principal, she oversaw many suspensions and expulsions. "I read an impact statement at a child's juvenile justice hearing," she said. "It was a very unsatisfying experience. I didn't get to say 'This is what he needs,' or 'This is what I want to work on with him.' Instead, my statement became just another nail in his coffin. I suspended kid after kid as a vice principal and gosh, did it help them? No. Did it help the school? I don't think so. That's why I'm studying these issues now."

Paradoxically, suspending students may be needlessly punitive while still allowing them to escape from the direct consequences of their actions. "I don't understand how suspending a student—having them miss school work, being on the street or at home, on their cell phone, watching TV—is holding them accountable at all," said Winn. "I will tell you what accountability is: When you have to sit in close proximity to the people whom you have disappointed or hurt, and try to explain why you're making the choices you're making. *That*



▲ Mariama Smith Gray, a PhD candidate at the UC Davis School of Education, is exploring the disproportionate discipline of students of color in a California high school.

is accountability, and it is *hard*, especially if you're not used to it."

But Are Schools Doing Restorative Justice Right?

When implemented thoughtfully by well-trained teachers and administrators, restorative justice practices seem to be effective. But are schools effectively using restorative justice tools?

Arash Daneshzadeh, who is earning his EdD through the School of Education's CANDEL program, has established successful restorative justice programs in Oakland and San Francisco. He taught at one high school with a high percentage of students who had already been suspended at



"We need to be mindful of the ways that students are a mirror for the blindspots we fail to recognize."

— Arash Daneshzadeh

▲ Arash Daneshzadeh, a CANDEL EdD student and teacher, is completing his dissertation on restorative leadership practices and the persistence rates of African-American males in urban high schools.

least twice from other campuses. African-American students made up approximately 8% of the population, but close to 80% of suspensions. When Daneshzadeh implemented a restorative justice program, the percentage of African-American suspended students dropped to 50%.

The key to success was that Daneshzadeh and his peers invited African-American and Latino students with multiple suspensions to join the restorative justice taskforce. These students then took the lead on training teachers and students about mediation. "That type of involvement provides the investment that a student needs to feel like a stakeholder," Daneshzadeh said.

Winn's research agrees. "I just completed a case study of a high school that is advanced in implementing restorative justice," she said. "They've trained their students to be restorative justice

circle keepers, and taught them about racial disparities and school discipline policies. They chose students who weren't necessarily A-students, those who may have had struggles with teachers in the past, and put them in leadership positions. That was important."

Disproportionate Discipline Persists

Daneshzadeh's school saw marked improvement, but still had a disproportionate number of black students being suspended. One reason: White teachers were writing up referrals for black and non-black students differently. "For a non-black student, teachers would say 'the student took the other student's headphones,'" said Daneshzadeh, "but for a black student they might use language such as 'theft' or 'burglary.'"

Gray witnessed the same issues as an administrator and as a researcher—school resource officers dispersed groups of Latino boys but not the white boys standing near them, or sent students of color to the principal for minor infractions that were being excused for white children.

As a result, non-white students are referred more frequently for interventions. "Then restorative justice methods just become a

proxy for race," said Daneshzadeh, "and are associated with brown and black students. Students see that 'restorative justice' is tantamount to an in-school suspension, and that not everyone is beholden to the model."

Structural Change

Winn, Gray and Daneshzadeh all agree that for restorative justice to be a useful tool, teachers and administrators need thoughtful training that discusses the inequities of the current educational system.

"We need to be mindful of the ways that students are a mirror for the blindspots we fail to recognize," Daneshzadeh said. "And we need to have some candid and painstaking conversations about how we implement restorative justice."

"Teachers need to hear about how mass incarceration impacts children and has trickled down into our schools," said Winn. "It impacts *everybody*, not only those being disproportionately disciplined or imprisoned. Students form negative perceptions of those children from groups who are constantly being targeted. Restorative justice can disrupt some of those undeserved negative perceptions." ■



▲ Lee Martin, PhD in his mobile engineering lab. Martin is investigating how students develop adaptive expertise.

The Man with the Van

Can hands-on engineering projects craft lasting change in students?

Associate Professor Lee Martin makes sure the 3-D printer, laser cutter and other design and engineering equipment in his Maker Van are tied down tight before he drives away from the UC Davis campus and heads for a nearby high school.

As part of a five-year research study on learning that he is conducting under a core National Science Foundation grant, Martin is leading a hands-on engineering program for students who have no previous experience with engineering. He'll work with the same students for the entire school year, giving them the tools, materials and mentorship they need to imagine, design, build and test their own creations.

The Maker Movement—which emphasizes making one's own products—may be well-known in places like the Bay Area, but for these students it's a revelation. They've never had access to engineering tools or classes; many are from demographic groups that are underrepresented in STEM fields.

Now Martin's students are using diodes, 3-D printing, woodwork, textiles and circuit boards to make projects such as a nightlight, an LED-illuminated class portrait etched onto acrylic, and clothing.

Can Students Become Creative Problem-Solvers?

Martin and his research team are

"We need to have a more diverse group of people engaged in helping design the world—that's an engine for a more equitable society."

— Lee Martin, PhD

looking for two types of changes in their students. "The first is the development of adaptive expertise," said Martin, "meaning flexibility in problem-solving. We're particularly interested in seeing how kids deal with getting stuck and how they learn to be resourceful."

▶ continued on page 14



A Prescription

Patients need more physicians who look like them

The underrepresentation of minority students in medical school results not only in fewer physicians from these groups, but in documented disparities in health care and life expectancy for patients from those ethnic backgrounds.

Lorena Ruedas, a School of Education CANDEL EdD student, is tackling this issue from two perspectives: researcher and mentor. Now in the last year of her degree program, she's finishing her dissertation on the minority pre-med preparation experience. And as the Postbaccalaureate Program Coordinator for the UC Davis School of Medicine, Ruedas works closely with a cohort of 20 post-baccalaureate pre-med students who are members of groups underrepresented in medicine.

"I have a dream job," Ruedas said. "I began my position just a few months after I entered the CANDEL program in the

◀ CANDEL student Lorena Ruedas is tackling minority underrepresentation in medicine through her dissertation research and her position as the Postbaccalaureate Program Coordinator for the UC Davis School of Medicine.

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The project's other big focus is on shifts in identity related to engineering and design. "We want to know how students will think about themselves, especially their sense of agency or self-efficacy, after this program," said Martin. "Do they see themselves in design or engineering work in the future? Will these experiences leave them feeling more empowered and capable? Will they see the world as being designed

and malleable, and themselves as having agency in that space?"

Building Adaptive Thinkers

As a learning scientist, Martin's goal is to advance knowledge of how to prepare students to be adaptive, flexible thinkers and the architects of their own learning.

"It's characteristic of adaptive experts that when they run into the boundaries of their knowledge, they know how to take the next step," said Martin. "School doesn't always present a

lot of opportunities for students to gain that skill set. But with maker projects, they're working on something they're interested in, they're being challenged, they're learning new habits of mind, and they're working at the boundaries of their knowledge. The projects never go exactly according to the plan they've started out with, so there are lots of opportunities as a researcher to see how kids deal with these sticking points, and how they learn to move through them. We see in prior research in this

for Med School

fall of 2012. I was learning about community leadership and diversity in education and policy in my classes, and at the same time living it in my career as an advocate for pre-med students.”

Ruedas’ students have met all the requirements for medical school, but their grade point averages aren’t competitive. The disparities in the quality of their high schools made them less prepared for rigorous college science classes; lower incomes meant that they worked to support themselves financially while carrying heavy course loads. The program helps them become better medical school candidates while educating them about health care disparities.

“They begin to realize that they’re just as strong as more privileged candidates for medical school,” Ruedas said. “When they enter our program and can focus solely on academics, they thrive. It’s a testament to the fact that students with low GPAs have the ability to succeed in the right environment.”

Ruedas leads a weekly seminar on health care disparities, which she models after the CANDEL approach to teaching. Guest speakers have included a legal aid activist for marginalized agricultural communities and a cancer patient whose physical disabilities have made her a lifelong patient. Students discuss concepts such as imposter syndrome

“It’s a testament to the fact that students with low GPAs have the ability to succeed in the right environment.”

– Lorena Ruedas

and stereotype threat, as well as working on professional development and interview skills.

The granddaughter of Mexican immigrants, Ruedas identifies with her students’ struggles—and with their need for a mentor. “I went to similar schools,” she said. “I know how they feel. I’m fortunate that Mikael Villalobos, a CANDEL alumnus, has been my mentor since I was a middle school student and he was an outreach director for EAOP. He guided me in preparation for college, and throughout college, and he now mentors me in my career. Our relationship has been instrumental in my career growth, and I’m glad to play that role for my students as well.” ■

area that kids who do this work tend to be more resourceful and are better able to leverage the resources they have in hand.”

A Lab Where You Need It

Martin’s lab on wheels typifies the creative maker approach. He and his research team built the fittings themselves and continue tinkering with them; by putting his lab on wheels he solved problems such as where to store the equipment, how to transport

it to schools, and how to be as flexible as possible as his research evolves. Recently an additional \$30,000 in funding from Intel to purchase laptops and a more powerful 3-D printer has expanded the van’s technological capacity significantly.

Long-Term Empowerment

Martin hopes that his students’ exposure to engineering can empower them far beyond this school year. “So much of our time is spent in the designed world

using objects and systems that other people have created,” he said. “When we stop taking those objects for granted as inevitable, and start thinking about how they were created by someone and can be changed and improved, that can be really empowering. Many of these students are from groups that have historically been shut out of STEM fields. We need to have a more diverse group of people engaged in helping design the world—that’s an engine for a more equitable society.” ■



**Sarah Knutson
(Cred '10)**

is an 8th grade Accelerated ELA and ELA teacher at American Canyon Middle School, as well as a site trainer, BTSA support provider, ELA Department Chair, and a New Tech Network Certified Teacher. Knutson recently presented at AASL with PBS Learning Media on curriculum she helped develop and implement as part of a PBS Learning Media pilot study on their digital resources. “My district employs a lot of UC Davis Credential program grads,” Knutson said, “and there’s a reason! We are set up for success.”

**Cirilo Cortez
(MA '08, PhD '12)**

was appointed the Director of Strategic Chicana/o and Latina/o Retention Initiatives for Student Affairs at UC Davis.

Letter from the Alumni Chair

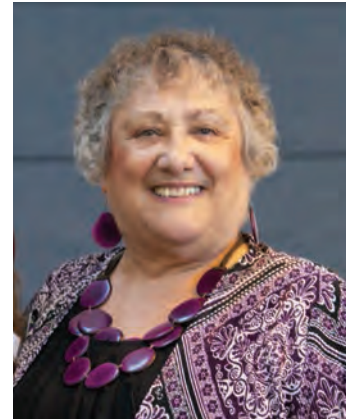
The Alumni Council is committed to providing support for the students in the School’s various academic programs in multiple ways. One great example I’m delighted to share with you is our support of teaching credential students Omar Ceja and Katherine Anderson through the 2015-16 Alumni Council Scholarship.

Additionally, we’re thrilled to be partnering with the CANDEL program and CAAA to co-host a networking event for EdD alumni and current CANDEL students on Saturday, January 30, 2016. EdD alumni should keep an eye on their email for an invitation for this gathering.

We believe that this first CANDEL networking event is a great beginning for our plans to further connect alumni and students. Networking and mentoring are so important for our current students—our alumni are poised to offer them guidance on their education and future careers.

Please mark your calendars for our Honoring Educators celebration on May 17, 2016. You’ll be receiving an invitation by email in February to nominate fellow alumni for the Rising Star and Distinguished Alumni awards. I hope each and every one of our alumni submits a nomination. It’s so important to recognize the work that our alumni have done since graduating from the School of Education. It not only tells our alumni how much we value them, but it shows our current students the incredible achievements that we know they’re capable of as well. Thank you in advance for your nominations!

—Sandi Redenbach (BA '72, Cred. '73)
Alumni Council Chair



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Socratic Scholar

An alumnus reflects on a lifetime of teaching

I attended UC Davis from 1974 to 1976, leaving with both elementary and secondary (mathematics) teaching credentials and having completed all coursework toward the Master in Teaching (MAT) degree. I had one outstanding degree requirement, which was not met until several years later, so I did not actually receive the MAT until 1988.

I taught in the San Francisco Bay Area for 30 years, and then I moved to Ashland, Oregon in 2005, taking a position as mathematics instructional coach for middle school teachers in the Medford School District. Later, I joined the professorial faculty in the Mathematics Department at Southern Oregon University, specializing in mathematics education. I retired in 2014 during my 40th year in the classroom and was granted Professor Emeritus status.

In October 2014, I delivered the keynote closing presentation at the Northwest Mathematics Conference (an annual conference for teachers in Oregon, Washington, and British Columbia). This was, in a sense, an “encore” presentation, since I was also the featured closing speaker in 2011. During my career, I delivered over 350 presentations at conferences and teacher training events (in 39 of the 50 states), which included keynote

addresses for California Math Council (Northern, Far-North, and Southern regional conferences), Oregon Math Leaders Conference, San Diego Mathematics Council, Santa Clara Valley Mathematics Association, San Diego State University’s Master of Arts in Teaching commencement, and the UCLA Mathematics Project.

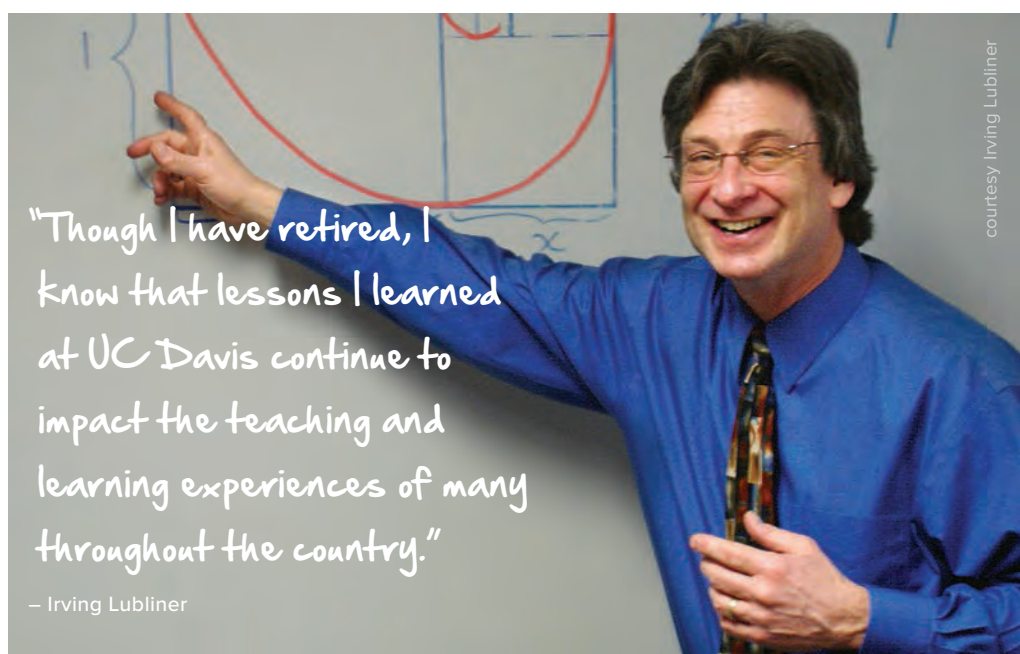
In addition to consulting and speaking for school districts, I served teacher education projects at UCLA, Cal State University (Northridge and San Diego), San Jose State, University of Santa Clara, University of San Francisco, and Missouri State University.

As I have conducted workshops throughout the country, attendees have commented

that I received a different kind of training than most teachers get. The Socratic questioning strategies, the ways of responding to students’ answers (whether right or wrong), the use of varied modes of response, and so many more techniques that my UC Davis faculty mentors, most notably Evelyn Silvia, demonstrated and encouraged have served me well throughout my career.

Whenever teachers have attended my presentations or students attended my classes, they have shared in my personal UC Davis legacy, and I hope that they, in turn, pass it on in their own classrooms. ■

—Irving Lubliner
(Cred. '76, MA in Teaching '88)





Grace Tobias

Agricultural Education Student

Born on a Hollister cattle ranch, Grace Tobias joined the 4H Club at age 9, has spent countless weekends at livestock shows, was a rodeo queen, and lived for a year in the campus Sheep Barn. She entered UC Davis as an undergraduate intending to become a veterinarian like her father Charles (DVM '86), but while earning her BS in animal science she took an agricultural education class and was hooked on the idea of becoming a teacher. "I realized teaching would be a skill I could have forever," she said, "no matter what else I decide to do in my career."

Tobias is a student teacher at Liberty Ranch in Galt, where she teaches agricultural and soil chemistry. "I think our program is one of the best," she said. "I like that we're in the classroom with our students the entire year, from the first day of school to the last. I've met AgEd teachers from other programs and they don't get to experience that."

Her first day in the classroom flew by. "I was overwhelmed by the responsibility," Tobias said, "but then I loved working with the kids and I truly enjoyed it. Every day is fun and a challenge."

Student Scholarships Report

Student support is vital to the continued success of the UC Davis School of Education and its ability to provide high quality teachers, researchers and education leaders. This academic year, the School offered the greatest number of scholarships in its history: a total of 41 students received more than \$187,267 in scholarship funds.

Thank you to our many donors whose philanthropic support helped provide scholarship funds, and who joined the School's commitment to our students' promise and education.

Thank you to our many donors whose philanthropic support helped provide scholarship funds.

PhD Student Scholarship Recipients

BerNadette Best-Green
Mohini Jain Family Foundation Award

Orlando Carreón
School of Education Annual Fund Scholarship

Jason (WenYen) Huang
Anthony Barcellos Education Award

Mary Stewart
PhD Scholarship Award funded by the Meg Stallard Catalyst Fund

Lu Yang
PhD Scholarship Award

Michele Zugnoni
Mark Cary Reflective Learner Award

EdD Student Scholarship Recipients

Beth Ervin
EdD Student Scholarship Fund

Denise Tambasco
EdD Student Scholarship Fund

Jason Huang

PhD Student

While teaching high school math, Jason Huang designed a project in which students used math functions to create computer-generated drawings. “By the time they were done, they understood how changing a coefficient or variable changes the graph,” he said. “Instead of being fearful of making mistakes and getting a poor grade, the students responded as if the project was a game, and that each mistake they made was a necessary part of learning. Most went far beyond the project requirements.”

That experience launched Jason’s PhD career. “I saw that my peers feared technology,” he said. “I wanted to help people appreciate how it can be used to enhance learning.”

The financial support of a scholarship is important to Jason. “But what’s even more valuable is that when you’re deep in your own research, you can feel disconnected from the real world,” he said. “Earning a scholarship like this makes me feel like my hard work is being validated and appreciated.”



Teaching Credential/ MA Student Scholarship Recipients

Clairise Anderson

Orville & Erna Thompson Family Award

Katherine Anderson

Laura E. Settle Scholarship; Alumni Council Scholarship Award; Frank E. Isola Award

Juan Avelar

Susan Schnitzer Fellowship in Teacher Education; Sandi Redenbach “Students at Promise” Award; Education Faculty Scholarship Award

Krishna Borja-Cruz

Farrer-Patten Award

Jessica Cano-Sanchez

Mabel Outler Scholarship; School of Education Annual Fund Award

Omar Ceja

The Davis Family Scholarship; Mabel Outler Scholarship; Alumni Council Scholarship Award

Lilia Cisneros

Mabel Outler Scholarship; Sandi Redenbach “Students at Promise” Award; KLC Adler Award; Teaching Credential/Master’s Student Scholarship

Ashley De Medio

Bob and Kinzie Murphy Guardian Teacher Scholars Award; Heather Marie Award for Guardian Teaching Scholars; Guardian Teacher Scholarship funded by Ticket to Dream Foundation; Guardian Teacher Scholarship

Kiah Featherstone

Agricultural Student Enhancement Award

Hayley Hill

Boyd Family Teaching Scholarship; Power of 10 Scholarship

Ariel Kapur

Agricultural Student Enhancement Award

Maria Montoya

Orville & Erna Thompson Family Award

Corinne Rushing

Next Generation STEM Teaching Award; Teaching Credential/Master’s Student Scholarship

April Sherfy

KMTG Guardian Teacher Scholarship; Guardian Teacher Scholarship

Savannah Stender

Rogers Scholarship Program

Grace Tobias

Brad Davis – Alpha Gamma Rho Award

Tierney Werner

Marten & Nell Bakker Award



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"I can relate to a lot of the students in my dual immersion classroom. I want to have the same impact that some great teachers had on me."

— Jessica Cano-Sanchez,
Multiple-Subject Credential Student

Becoming a Teacher

I began learning English in my sixth-grade classroom in the border town where I grew up. Now I'm a student teacher in a fourth-grade dual-immersion classroom in Vacaville. I can relate to a lot of the students, and I want to have the same impact that some great teachers had on me. There's no better way to change the world than through educating our kids.

It's all kind of surreal, because teaching is something I came around to—I did my undergrad degree in business. My first day I thought, "Wow, am I really doing this?" But the environment was so positive and the kids were so welcoming that I'm enjoying every day of being in my own classroom.

I have a lot of support in my elementary school. My resident teacher is so good at advising me, I have three peers who are placed at the same school, and the other teachers are very helpful too because a lot of them are UC Davis graduates. My professors are always there for me when I have questions.

What I really like is that the process of becoming a teacher has been gradual. We started with a lot of observation, so by the time I was in front of my first class, I felt comfortable. It's been a lot of work, but I've never felt like I wouldn't be able to do it.

—Jessica Cano-Sanchez

Honoring Educators Awards Ceremony

May 17, 2016
Walter A. Buehler
Alumni Center

The School of Education is proud to celebrate and honor the achievements and contributions of educators at our annual awards ceremony and reception.

Adventures in Enrichment STEM-Tastic Sunday Sign-Up

January 31, 2016
Walter A. Buehler Alumni Center

A fun preview event—bring the kids, watch cool demos, and sign up for summer camps at discounted rates.



Distinguished Speaker Series

Professor Edward Haertel
March 9, 2016
UC Davis Memorial Union
Room MUII

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*Words
take Wing*

Words Take Wing

February 23, 2016
Tsakopoulos Library Galleria
Sacramento Main Library

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