Fall **2020**

advancing

UCI School of Education

advancing

IMPROVING LIVES THROUGH ADVANCING THE SCIENCE OF EDUCATION

Aldrich Park in the center of campus at the University of California, Irvine

» FEATURES

On the Cover: *Peter the Anteater leads an online, virtual classroom.*
Illustration by Emily Mai Therese Young (B.A. '20, Paul Merage School of Business).

» DEPARTMENTS

Richard Arum | Dean, Professor of Sociology and Education

Welcome to the fourth annual issue of the UCI School of Education magazine, *Advancing*.

It would be an understatement to say that the past year posed serious threats to the fabric of our society, with our educational system being no exception. In March, schools across the nation – from kindergarten to higher education – underwent a seismic shift to remote instruction. The logistics of this unprecedented maneuver were difficult, concerns over safety were paramount, and the potential effects on student outcomes remain harrowing. In late spring, the Black Lives Matter social protest movement challenged all our institutions to recommit themselves to addressing social inequality in general and anti-Blackness in particular.

With so much at stake, the UCI School of Education has been working diligently to help our education system move past current challenges – *advancing* forward to create a better, new reality for future generations of students. Our faculty, students, and staff have all responded to the formidable circumstances in a multitude of inspiring ways.

In March, after years of planning, Professors Mark Warschauer and Di Xu launched the School of Education's Online Learning Research Center (OLRC). Warschauer and Xu are both leading experts in the area of online learning, and the center – which provides resources to instructors and students alike – is borne out of years of research from the pair. More information about the OLRC can be found on page 4.

Our Orange County Educational Advancement Network (OCEAN) entered its second year of research-practice partnerships with 10 different K-12 schools across Orange County. In March, our students and faculty, along with K-12 school leadership, began developing innovative ways to support K-12 schools, students, and families. The partnerships continue to implement new resources and practices to ensure student learning is not compromised. Learn more about the measures taken, and the annual results from this network, on page 15.

Our Master of Arts in Teaching program is a paragon in teacher preparation, granting a master's degree and teaching credential to more than 100 individuals annually. Additionally, our CalTeach program offers undergraduate students the opportunity to earn a bachelor's degree in a STEM field and a teaching credential in four years. Administrators in both programs worked valiantly this spring to continue and secure student teaching assignments. As a result, all our teaching candidates completed their required classroom hours, and graduated fully equipped to begin their teaching career. More information about the CalTeach program is available on page 11.

The UCI School of Education is serving as a pilot demonstration site to develop and implement a state-of-the-art measurement project that provides insight into the value of college and creates tools that other universities can utilize to better understand their own students. As it turns out, the *Next Generation Undergraduate Success Measurement Project* also serves as a perfect vehicle to gain further insights about UCI undergraduates' experiences and attitudes related to the pandemic and changes in undergraduate education. Learn more about our findings, and how they are informing university response, on page 19.

In the face of a crisis, education must be a force driving positive change for our society. The mission of the UCI School of Education remains unwavering: to advance educational science, learning outcomes, and equity for all students. This magazine shares a small sample of the ways we are carrying out this mission.

Sincerely,

[signature]

Richard Arum
Dean and Professor
UCI School of Education

Tackling the **Pandemic**

Our faculty's preexisting research and scholarship proved to be a tremendous resource to communities struggling with the pandemic and shift to remote instruction. Since March, our faculty have also been awarded new research grants that focus on the current crisis in education and society.

Associate Professor June Ahn, Professor Rossella Santagata, and Assistant Professor Adriana Villavicencio
UCI Office of Inclusive Excellence - Reimagining Educational Equity and Opportunity (REEO) during the COVID-19 Pandemic

Ahn, Santagata, and Villavicencio will document and synthesize the nuanced approaches that different communities are taking to best support students in Orange County schools during this unique time, and provide targeted support in areas of need through the creation of a Networked Improvement Community composed of UCI School of Education researchers, along with school leaders, district leaders, and community members. "We are expanding on the relationships we have built between researchers and school partners through the OCEAN network to document the unique challenges and ways that our partners have dealt with the ongoing COVID-19 pandemic," Ahn said. "The grant funds will allow us to convene focused working groups of educators and researchers to figure out how to best serve students in the coming months of the pandemic, with a key focus on equity and serving those most in need."

For more information on the School of Education's OCEAN Network, see page 15.

Constance Iloh
UCI Office of Inclusive Excellence - Exploring the COVID-19 College Realities of Low-Income Black and Latinx Students Using the Iloh Model of College-Going Decisions and Trajectories

Iloh's study situates the premise that inequities and byproducts of classism and racism are likely to be heightened during a global pandemic. Specifically, Iloh will explore the contemporary college-going narratives of low-income Black and Latinx students at institutions during COVID-19. In doing so, she will utilize the *Iloh Model of College-going Decisions and Trajectories* to examine how the three bi-directional contexts of her framework inform extant college pathways. By intentionally focusing on COVID-19 narratives hidden in plain sight, Iloh seeks to identify class and race-minded understandings and approaches for this moment, especially as it pertains to college access and persistence. "My research is an acknowledgement that minoritized students are important experts of experiences that must be consistently amplified and woven into policies and practices," Iloh said. "I'm humbled to use my model for a study that explores the troubling moment we are in for the very communities that drew me to the study of education. This is the work that keeps my mind racing and makes me so honored to be a social scientist."

Associate Professor Lindsey Richland
National Science Foundation RAPID - Impacts of COVID-19 Out-of-School Stressors on Executive Function and E-Learning

Richland will research UCI undergraduates' current stressors during the COVID-19 pandemic, the impact of stressors on students' learning, and test strategies for supporting effective e-learning in this period. Richland will study students' stress in relation to their performance in social science, biology, and education classes that require higher-order thinking, such as making generalizations and encouraging deep thinking about conceptual issues. Along with their academic instruction, students will be taught to think about cognitive resources and how to harness, reappraise, and channel stress into motivation and focus. "One way people respond to stress is to engage cognitive resources in thinking about what is worrying them," Richland said. "These are the very cognitive resources that are needed to engage in online learning since they help us keep focus, think hard about information, and use higher-order thinking."

Associate Professor Di Xu
National Science Foundation RAPID – Social Network Consequences for Underrepresented STEM Students as a University Transitions to Remote Activities

In 2014, UCI launched the Enhanced Academic Success Experience (EASE) initiative, which features first-year biological science majors grouped into 30-student cohorts. Students in the cohort take the same courses and meet regularly with peer mentors and academic counselors. Now, Xu is studying how the pandemic is affecting the campus connections and academic progress of students in EASE. "Learning communities have been promoted as a promising way to engage students both academically and social-psychologically, and a well-implemented program such as EASE can provide a model to support students, especially those from disadvantaged backgrounds," Xu said. "The analysis of social networks would further enable us to unpack specific mechanisms through which EASE may influence students."

Xu is also co-director of the UCI School of Education Online Learning Research Center. Read more on page 4.

David Schaefer, associate professor, Department of Sociology is serving as principal investigator. Brian Sato, molecular biology and biochemistry professor of teaching in the UCI School of Biological Sciences is co-PI.

Supporting
Online Learning

Already years in the making, the UCI School of Education's Online Learning Research Center launched in March, providing resources to millions across the country when they were needed most.

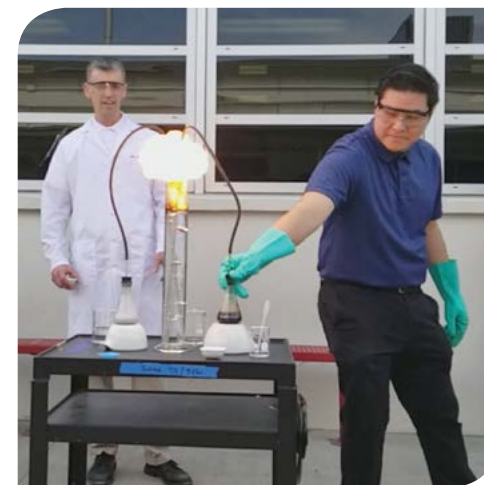In 2015, the National Science Foundation awarded School of Education professors Mark Warschauer, Di Xu, and three colleagues a $2.5 million grant – *Investigating Virtual Learning Environments* – to study 50 online courses at UCI. The abstract cites a "dearth of rigorous research" on the topic of online learning, and a pledge to assist higher education administrators, instructors, and course designers to make effective decisions in planning the kinds of virtual learning environments that can meet the needs of undergraduate students.

Fast-forward five years. In March, the COVID-19 pandemic caused the unprecedented decision of all schools – from kindergartens to the UC system – to shift to online learning. At the same time, Warschauer and Xu were ready to support their colleagues, and launched the Online Learning Research Center (OLRC). The center provides evidence-based resources for K-12 and college educators, students,

and researchers to improve achievement and equality in online learning, and features research and resources borne out of several grants led by Warschauer and Xu that investigated the pitfalls, challenges, and opportunities of remote instruction.

"It's not just a place where we publish and share research, but where instructors and students can evaluate their online teaching and learning," Warschauer said. "Educators can examine their online courses to see if they're touching all the bases in terms of what we know about online learning and learn how to improve online courses to make them most effective."

"We really hope to use this website as a bridge between research and practice," Xu said. "We want to understand the typical challenges faced by instructors and students, and then examine those issues in the research."

THE TROUBLE WITH ONLINE LEARNING

As many experienced firsthand in the spring, online instruction can be fraught with difficulties – from annoying technical issues, to the more severe threat of hampering an individual's learning experience and educational outcomes. Xu cites previous research that shows performance gaps between online learning and traditional face-to-face learning, with the performance gap being substantially larger for underrepresented groups.

"Online learning is likely to exacerbate inequity gaps if the classes and instruction are not intentionally designed to facilitate interaction and student scaffolding," Xu said. Xu is currently principal investigator on a National Science Foundation CAREER grant that is researching effective strategies to enhance supports and services to improve online learning among community college students.

Why is online learning in higher education susceptible to such issues? A lack of schedule is the main reason, Warschauer said, which creates problems in two different ways. First, it demands a greater need for autonomous learning skills, self-regulation, organization, and motivation. Students who are ultimately successful in online classrooms already have those skills. Those who do not are more likely to struggle.

Second, students in online classrooms feel the effects of isolation – both from their teachers and peers. Students suffer from a lack of engagement and their sense of community can be compromised when classes are online. Additionally, their communication is strained – it is more difficult to ask questions, immediately receive feedback, and share ideas with peers and instructors.

Though there is less research on student outcomes for online learning among K-12 students, Warschauer posits that the threats and difficulties are even more pronounced than in higher education. For starters, students in a two- or four-year college have already demonstrated the aptitude to be admitted and enroll in college, and they are more familiar with and have

better access to technology. Furthermore, K-12 students rely more heavily on the counselors, nurses, and food services that schools offer.

"The prototypical successful online student is very motivated, mature, disciplined, and knows how to teach him or herself," Warschauer said. "There is such a large population of students in K-12 that have special needs, or are English learners, or whose home lives simply aren't conducive to online learning – through no fault of their own, they face many more challenges in learning online."

THE POTENTIAL AND REALIZED BENEFITS

Make no mistake, there are advantages to online learning. Warschauer and Xu list 24/7 access to materials, automated scoring, better tracking of student engagement, and the potential to share resources and develop personalized learning chief among them.

In the past, there was a "black box" element to learning sciences – students leave the classroom, go home for the evening, and it is then unknown what is occurring at home or in the dorms. With online learning, the curtain is lifted so educators can see how often students are online, at what times, when they begin their homework, how long they spend on an assignment, and several other statistics.

Warschauer, who directs UCI's Digital Learning Lab and has studied online learning since the time of 28k modems, hopes this past spring awakened many to the potential benefits of online learning.

"I don't want to see in-person education replaced by online learning, but it can play a valuable role in the education ecosystem, and this experience could be a boost toward greater awareness of the challenges and opportunities," Warschauer said.

Warschauer and Xu agree that online learning will improve as more research is conducted and more are exposed to proper classroom setups. The research and tools that improve online learning can be translated to improve face-to-face instruction as well.

"The ways in which we improve online instruction could be used to improve teaching and learning in general, and I can see a time in the future where we don't have a clear-cut definition of an online or face-to-face classroom," Xu said.

WHAT CAN EDUCATORS DO?

The advantages of online instruction are only realized when classes are intentionally structured. Through their research, Warschauer and Xu created and compiled a swath of resources, now available through the OLRC, to assist educators in achieving this aim.

One example is a rubric, researched and designed by Xu and collaborators Qiujie Li, former UCI doctoral student and current postdoctoral scholar at NYU, and fourth-year doctoral student Xuehan Zhou. The rubric provides a theoretical foundation of best practices, the unique challenges of online learning, and specific ways to address each challenge (see page 7).

Warschauer said the mass migration to online learning in the spring is not completely reflective of the potential that online learning affords, as most of it was done under pressing, extenuating circumstances. Entering the fall, educators should have had more time to structure their classes and realize opportunities.

Nevertheless, Xu sees the need for university support.

"Many faculty have never taught online courses, nor do they know how to design a high-quality online

School of Education Associate Professor Di Xu

course from scratch, so professional development opportunities would be helpful," Xu said. "Faculty are experts in their fields, and if we can provide expert support to faculty to help them design online courses, then we are likely to have a series of high-quality resources and courses available."

This spring and summer, UCI's Division of Teaching Excellence and Innovation (DTEI) hosted the first annual Digital Learning Institute (DLI) – a seven-week program designed to facilitate faculty to explore, learn, experiment, and create a digital learning environment for 21st-century learners.

Given the demand from faculty, the DLI hosted three separate cohorts, all focused on the theme of "Embracing Pedagogical Excellence in Remote Teaching." The DLI used Xu's Online Course Quality Rubric to help teach faculty how to structure their online classes.

After completing the DLI, faculty better understood the training and support necessary to overcome remote teaching challenges, and faculty inquired about additional strategies to improve online course delivery and ways to engage remote students more effectively.

The DTEI is also providing an online course development service for faculty who are scheduled to teach a large undergraduate course with high international student enrollment.

In addition, the OLRC developed curated resources to help students learn the study skills and strategies to succeed in online courses. The DTEI and the UCI Office of Information Technology have incorporated a number of those resources in their "UCI Learn Anywhere" and "Remote Student Success Guide" websites.

School of Education Professor Mark Warschauer

At the K-12 level, Warschauer urges schools to find a way to host face-to-face classes, especially for younger students if it can be done safely. It is not necessary to host students for 180 days, six hours a day, he said, but even a schedule of reduced days, alternating day/night, or attending every other week will have significant positive impacts on students' learning.

Additionally, he hopes schools and districts will create quality online resources and that schools are able to provide technology and other physical resources despite tightened budgets.

"I hope our country is investing in public education, because this is critical to the future of our education system," Warschauer said. "We already have a large summer learning loss in our country, particularly for students from low-income backgrounds, and the traditional three-month gap has already turned into a six-month gap for many students.

"We cannot let this turn into a 12- or 18-month gap without addressing the need for serious remediation, or else we will have left an entire generation of students behind."

ONLINE COURSE QUALITY RUBRIC MATRIX						
	Website Organization and Presentation	Learning Objectives	Instructional Materials	Learning Activities (including activities, assignments, & assessments)	Logistics and Course Management	Targeted Support for Online Learning
Scaffolding Self-Directed Learning Skills and Guiding the Learning Process	1.1 Course material organization and presentation 1.2 Guidance on course navigation	2.1 Articulation of learning objectives	3.1 Guidance on how to work with instructional materials	4.1 Regular and various learning activities 4.2 Clear instruction on learning activities and articulation of expectations	5.1 Articulation of course policies, expectations, and course details 5.2 Clear communication of course schedule, predictable routine	6.1 Learner support and opportunities for scaffolding learning skills
Student Agency			3.2 Diversified content delivery media 3.3 Flexible content and student choice	4.3 Flexible performance tasks and student choices		6.2 Facilitation and incorporation of ongoing feedback from students 6.3 Opportunities for self-reflection on learning goals, process, and performance
Presence & Interactivity	1.3 Instructor presence in the structure of the website			4.4 Instructor presence in learning activities and quality feedback 4.5 Collaborative learning and interaction opportunities	5.3 Regular announcements and reminders	6.4 Approachable and responsive instructor 6.5 Progress monitoring and proactive outreach 6.6 Non-content-related social interaction opportunities

This rubric, researched and compiled by Xu and her collaborators, provides a systematic and descriptive benchmark for researchers and practitioners who are striving to develop a culture of high-quality college-level online courses. In the first column are three major theoretical concepts important in addressing the unique challenges of online learning. The top row is six different course components typically included in an online course. The intersection is how instructors can design each course component to support online learning in regards to each theoretical concept. For each item, a definition of importance is included, along with specific examples that instructors can use in designing their course. The rubric is available at www.olrc.us.

Addressing a **Need**

Professor Elizabeth Peña is leading efforts to create an online testing procedure for identifying developmental language disorders while simultaneously establishing a Special Education emphasis at the UCI School of Education.

In spring, when COVID-19 forced educators to deliver coursework online, Professor Elizabeth Peña realized a unique opportunity was available to influence the future direction of support for the field of language development testing.

The current system of determining developmental language disorders (DLDs) is flawed. For starters, tests must be administered in person by a bilingual speech-language pathologist. Additionally, while the American Speech-Language-Hearing Association has a membership of more than 200,000, Peña estimates that only four percent – approximately 8,000 – speak another language. Meanwhile, 20 percent of children in the U.S. entering school speak at least two languages. In California, 40 percent of children entering school speak another language in addition to English.

"There are considerably more children who are English learners than can be served by the current 8,000 certified bilingual pathologists," Peña said.

The inability to serve children under the current system is a major concern. Children could be under-identified for language impairment when testing is needed, but not administered, or they can be over-identified as having a language impairment when no language impairment exists.

Two recently awarded five-year grants are supporting Peña's efforts to address this need.

DEVELOPING A NEW TEST

In January, the National Institute on Deafness and Other Communication Disorders of the National Institute of Health awarded Peña a $3.18 million grant, *Test of English Language Learners (TELL)*.

As part of the grant, Peña and her team will create and validate a table-based test that speech-language pathologists can administer, in English, to children who are in the process of learning English as a second language. The test will be sensitive to language impairment but will not over-identify children because of a lack of English proficiency. Speech-language pathologists and special educators who need to assess bilingual children's language ability will be able to use computers or tablets to administer TELL.

"I saw a need for validated online testing, both to respond to the current recommendations for social distancing and to address critical needs in the field of language acquisition testing," Peña said.

The TELL test will target Spanish- and Vietnamese-speaking English Language Learners (ELLs), ages four to nine, in both their first language and in English, with the goal of differentiating language impairment from language difference.

"This is a completely new approach. The two groups of children that will be tested – 525 Spanish ELLs and 525 Vietnamese ELLs – use very different languages," Peña said. "We will be tracking normal developmental errors, acquisition errors, and DLD and comparing our findings between the two languages."

Because of the pandemic, investigators on the TELL project have had to rethink their data collection approach. A core team of four doctoral students – Cecilia Perez, Michelle Ramos, Jiali Wang, Taffeta Wood, as well as postdoctoral scholar Amy Pratt and undergraduate Miriam Muñoz – worked over the summer to develop and pilot test procedures and questions that will be used in TELL testing.

In the summer, students on the Integrated Research Training: Language and Literacy Disabilities project also worked alongside the School of Education's Orange County Educational Advancement Network (OCEAN) to strengthen relationships with Orange County partner institutions in preparation for the community-based component of their training.

"The TELL project was one of the things that motivated me to come to UCI and work with Dr. Peña," Ramos said. "In my previous clinical experience, I trained monolingual speech-language pathologists on assessment practices for English Language Learners and saw firsthand the great need to equip these clinicians with better tools."

Peña and her teams are optimistic that results from the grant will expand to serve most children who may be experiencing development language disorders.

"Our intent is that our findings, and the TELL test, will prove useful in the future with similar Romance and Asian languages and thus apply to 90 percent of the languages spoken in the U.S."

EMPHASIZING SPECIAL EDUCATION

Peña also received a training grant from the U.S. Department of Education (Office of Special Education and Rehabilitation Services) to develop a Special Education emphasis in the School of Education's Ph.D. in Education program.

Peña works with second-year doctoral student Cecilia Perez. Perez is part of a group of doctoral students that is assisting in the development of test procedures and questions that will be used in TELL testing.

The training grant will prepare graduates for leadership positions as researchers and faculty who will train special education, early intervention, and related services personnel. As a bonus, implementation of the training grant is creating a cluster of graduate researchers who are working on existing projects, including the TELL project.

"I see the training grant as being complementary to the TELL grant and to projects that several faculty are pursuing, including Assistant Professor Jade Jenkins's Head Start project and Associate Professor Stephanie Reich's Development in Social Context Lab," Peña said.

It is the first pre-doctoral training grant in the School of Education's history.

Peña and Associate Professor Penelope Collins are completing the recruitment of 10 doctoral students for the training grant. Student experiences during their five years of support will include four specialized classes, a year of faculty-mentored research in Special Education, and a community-based Special Education rotation in a school or district, where students will participate in training or data analysis.

The School of Education and UCI Graduate Division contributed an additional $1.25 million – matching the $1.25 million from the U.S. Department of Education – to support the development of the critically important emphasis.

"The School of Education is committed to improving educational opportunities and outcomes for everyone, regardless of background, and to training our students to carry out the same charge when they themselves become educators," said Richard Arum, dean and professor, UCI School of Education. "This grant allows us to make sure that we are imbuing our highly talented doctoral students with the skills necessary to support an underserved population."

IMPROVING COMMUNICATION
Growing up in an immigrant, Spanish-speaking household piqued Peña's interest in bilingualism and semantics, and how children learn to juggle and access each of their two languages. She credits a series of caring mentors for encouraging her career choices – her undergraduate research advisor Susan Sordon at the University of Redlands, her clinical mentor at San Jose State University, Gloria Weddington, Ph.D. advisor Aquiles Iglesias at Temple University, and long-time collaborator Tom Marquardt at the University of Texas.

Peña is a certified speech-language pathologist and a fellow of the American Speech-Language-Hearing Association.

"While working as a bilingual speech-language pathologist, I saw that children who were bilingual were often misidentified as language delayed because they didn't know enough English – or mislabeled as having language differences when it was apparent that they needed special education supports," Peña said.

Peña considers Southern California, with its richness of languages, and UCI, with its high-level scholarship and interdisciplinary focus, an exciting research environment.

"DLD is one of the most common childhood disabilities that people don't know much about," Peña said. "These kids are in every classroom that teachers will teach, they are in our universities, and we find young people with DLD in all walks of life. DLD affects other aspects of learning as well – reading and math in particular."

As director of the School of Education's Human Abilities in Bilingual Language Acquisition (HABLA) Lab, Peña collaborates with colleagues on research and mentors student researchers on studies of bilingualism, language impairment, and test development and treatment. Lab projects focus on understanding how bilingual individuals organize and access their two language systems.

Peña also serves as the School of Education's associate dean of faculty development and diversity.

"I see my role as supporting initiatives that will help us to build trust and community, where we can truly listen to each other and to different perspectives and where we make changes through our actions."

Changing the **Formula**

Students in the UCI CalTeach program earn a bachelor's degree in a STEM major and a teaching credential in four years. The students graduate as in-demand, equity-focused change agents, and in June, a record number completed the program.

In response to a growing and persistent need for well-prepared math and science teachers at the K-12 level, the University of California in 2005 established CalTeach. The system-wide program is designed to prepare STEM majors for future teaching careers while they complete their undergraduate degrees.

This past year, the UCI CalTeach Program, unique among its peers, is celebrating its most successful year, graduating 45 students and serving an additional 250 undergraduates, including community college students.

WHAT IS CALTEACH?
Aspiring teachers in California will typically enroll in a post-baccalaureate institution to obtain their teaching credential, a requirement to teach any grade level in the state. UCI CalTeach, on the other hand, allows undergraduates majoring in a STEM field to earn both their bachelor's degree and a teaching credential in four years.

While CalTeach exists in some form at every UC campus, UCI's is the only one that allows students to earn their teaching credential and bachelor's degree in four years.

"Our graduates are in very high demand," said Doron Zinger, director of the UCI CalTeach program and alumnus of the School of Education's Ph.D. in Education program. "These are individuals who have graduated with degrees in fields such as chemistry and biology, and also have teaching experience."

UCI CalTeach graduates also stay in the teaching profession. Zinger estimates that 90 percent of UCI CalTeach alumni are still teaching. Additionally, 70 percent of UCI CalTeach alumni are teaching in low-income communities. Historically, UCI CalTeach students worked at 89 different schools in 54 different districts.

"We persist at a much higher rate than typical teachers, and most of our graduates teach in low-income, underserved communities across Orange, Riverside and Los Angeles counties," Zinger said.

Over the course of four years, UCI CalTeach students are exposed to more classroom experience than many traditional post-baccalaureate programs. As freshmen, they sit in on and teach a lesson in an elementary school classroom. Then, they sit in on a middle school classroom as sophomores and a high school class as juniors. Their senior year, they student teach at a middle school or high school, with the majority of placements being in low-income, underserved communities.

To obtain a teaching credential in California, students are required to complete 600 hours of classroom experience. Zinger said UCI CalTeach students will do at least 700 hours of classroom experience, with many doing more than 1,000.

"Our students will actually get four years of classroom experience, as opposed to one in a post-baccalaureate program," Zinger said.

This proved particularly beneficial the past year. While the COVID-19 pandemic provided an incredibly challenging environment for students, all met their required field hours, thanks in large part to the significant amount of hours they completed prior to the outbreak.

Doron Zinger (Ph.D. '18), director of UCI CalTeach

SUPPORTING DIVERSE COMMUNITIES

The program does not stop at simply training STEM students to teach. Instead, it inspires historically underrepresented students to develop innovative, relatable curriculum for students at marginalized schools.

"Our mission statement is clear – recruit, support and prepare diverse math and science majors to become equity-focused teachers that are change agents in high-needs schools," Zinger said.

Zinger estimates that over the last two years, half of all UCI CalTeach students have been Latinx, and most have been first generation college students and/or from low-income households.

The UCI CalTeach curriculum challenges students to think of lesson plans that include content that is relatable and applicable to the lives of K-12 students across Orange County. Topics include everything from wildfires and the erosion of the state's coastline, to an influx of parrots in Santa Ana and why a notorious pond near a particular school is green and odorous.

"We need more engineers, but we also need people who are thinking about and honoring communities, and who can communicate lessons in a way that is applicable to students' lives," Zinger said. "Demographics in this country are changing, and unless you create access for all students, you're going to have an uneducated, unprepared populace."

Los Angeles native Nathalie Mejia arrived at UCI with a plan to attend medical school. Once she arrived on campus, she fell in love with the biology education major. She decided to join the UCI CalTeach program and, as a student teacher, led a 40-student eighth-grade class at McFadden Intermediate School in Santa Ana.

Mejia engaged her students by introducing a topic and then having them ask questions and share observations for two minutes. "Before this program, I thought teaching was just giving lessons," she said. "It's so much more than that. It's an equity and equality between myself and my students."

Nathalie Mejia, a 2020 graduate of the UCI School of Biological Sciences and UCI CalTeach program.

Zinger credits UCI CalTeach's four-year model, with the required observation of multiple schools, for helping build interest and resilience among UCI undergraduates.

"They build skills and disposition to be successful in classrooms, and then they land jobs in schools that are supportive and high-functioning," Zinger said. "Even though a majority go to work in underserved communities, they are going to schools where they can have an impact. Additionally, students are going back to their home communities, and they want to make the difference that they did not see in the classroom."

MODELING THE FUTURE

As the program grows by leaps and bounds, Zinger and the School of Education continue to build partnerships and implement programs to attract and support additional students, including community college students.

In spring 2020, UCI CalTeach began offering the program's introductory class to Orange Coast College students. UCI CalTeach will slowly expand offerings to OCC students, with the goal being to help the community college develop their own version of the early courses, which are transferable to UCI.

Additionally, UCI CalTeach is working with Santiago Canyon College to write a Hispanic-Serving Institution (HSI) grant to recruit and prepare STEM majors at SCC. This includes establishing a summer STEM institute, in which SCC students teach students in an underserved school in the Orange Unified School District.

In May, the National Science Foundation awarded UCI CalTeach a Robert Noyce Grant to support community college transfer students. The centerpiece of the grant, *Transfer to Teaching (T2T)*, is a scholarship program that will provide at least 24 transfer students with a full, two-year paid tuition scholarship – $30,000.

Additionally, community college students who enroll in UCI CalTeach courses while at the community college will be reimbursed for the course registration, and students will participate in a summer institute when they transfer to UCI, where they will work with faculty in the UCI School of Biological Sciences and UCI School of Physical Sciences.

"We want to focus on improving access to underrepresented students and creating pipelines to recruit community college students is vital in achieving that," Zinger said.

The summer institute is intended to "demystify" the research endeavors of research institutions for transfer students. The grant's principal investigator, Professor Jessica Pratt, UCI School of Biological Sciences, will mentor students on scientific research methods, and in small groups, students will join a research lab and work alongside doctoral students.

School of Education Professor Rossella Santagata is serving as co-PI on the grant.

"I am honored to be part of this work and to contribute to broadening access to the teaching profession," Santagata said. "I strongly believe that given the opportunity, young people from underrepresented groups will transform schools to be more inclusive and welcoming for students of color."

Zinger also envisions adding computer science curriculum to the UCI CalTeach program and, in the coming years, establishing a master's degree in STEM Leadership and Teaching.

It is all about seizing upon the critical mass that the program has achieved, Zinger said. He acknowledges the UCI CalTeach instructors, many of whom are local K-12 teachers who sacrifice their weeknights to teach. They do so because they are "invested in the mission," Zinger explains.

"We can grow our tent by adding majors and subjects, but we remain focused on strengthening our teachers; at the end of the day, they are brand new teachers who need assistance when they get out there," Zinger said. "When this entire community supports them, they can become school administrators, heads of departments, curriculum developers, and more. That is our long-term goal."

OCSEF-UCI CALTEACH MENTOR MATCH

In 2018, UCI CalTeach partnered with the Orange County Science and Engineering Fair (OCSEF) to establish the OCSEF-UCI CalTeach Mentor Match. With a mission to increase participation in the fair among underserved communities, Mentor Match has grown from four schools and 39 K-12 students in its first year to six schools and more than 170 K-12 students. UCI CalTeach students have served as mentors and supporters of the fair, helping create teams at K-12 schools in Santa Ana, Garden Grove, Westminster, and Newport Beach, and worked with students at the Shipley Nature Center in Huntington Beach, the Discovery Cube OC, and the Santa Ana Zoo.


The Santa Ana High School team and their self-watering planter. From left: Santa Ana high school students Elissa Montero, Patricia Limon, and Lizbeth Romero, along with Taychyi Mao (UCI CalTeach '19).

In 2019, a team from Santa Ana High School, supported by UCI CalTeach students and teacher mentors, advanced to the state finals. There, they presented the project they designed and created: Set It & Forget It, a low-cost, self-watering planter. The team engineered their device to monitor and digitally display all conditions pertinent to plant growth, including temperature, humidity, light, and water level. The planter waters plants based on the soil moisture level entered by the user. Their final product was 3-D modeled, printed, tested, wired, and coded by the group of three students: Patricia Limon, Lizbeth Romero, and Elissa Monterroso.

"It is an honor for the UCI CalTeach Program to partner with the OCSEF Mentor Match Program to support their goals of increasing diversity at the engineering fair and science competition not only in Orange County, but at the state level," said Kris Houston, UCI CalTeach Academic Coordinator. "It is a pleasure to hear from both mentor teachers and UCI CalTeach students alike about the challenges and ultimately the successes of assisting their students in designing projects that are focused on finding solutions to scientific problems. It is our hope that the Mentor Match Program continues to grow and flourish at a steady rate amongst Orange County middle and high schools and that these students, who may have not originally seen themselves as scientists or engineers, are inspired to pursue a STEM degree and spark change in these fields."
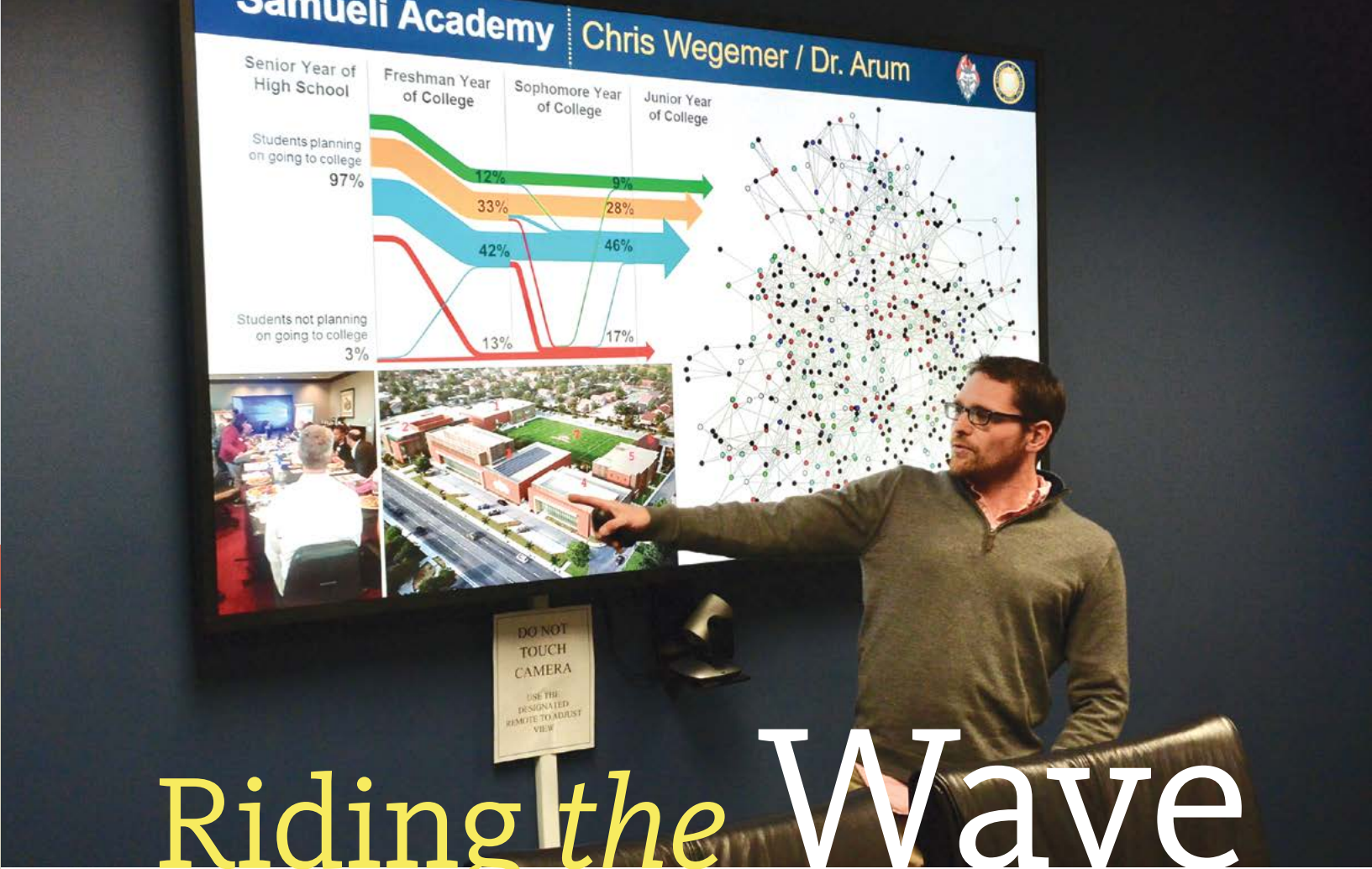
Riding *the* Wave

The UCI School of Education's Orange County Educational Advancement Network (OCEAN) began in fall 2018, establishing partnerships between the School of Education and K-12 schools. Now, the network is generating tangible improvements in schools across Orange County.

If the inaugural 2018-19 year was a splash for the OCEAN network, then 2019-20 was a tidal wave of research, findings, and interventions at K-12 schools across Orange County.

OCEAN is a network of research-practice partnerships between the School of Education and K-12 schools in Orange County. At each site, a School of Education faculty member and doctoral student work with school leadership to identify the greatest needs and goals of the school, and in turn conduct research that will positively impact the school.

Ten school sites participated in OCEAN during the 2019-20 academic year, many for the second consecutive year. For first-year sites, the focus was on building relationships and identifying potential

research topics. For second-year sites, however, research took off in new and creative directions leading to grant awards that will help increase the reach and impact of the network.

"The rhythm of these partnerships is starting to become clear, and it's incredibly encouraging," said June Ahn, director of OCEAN and associate professor at the School of Education. "It was very rewarding to see how investing in a relationship can pay off in providing service to the community, and we now have clear examples of how spending a year of dedicated time with a school site can accelerate research in year two."

Above: Doctoral candidate Christopher Wegemer presents his research to the UCI School of Education.
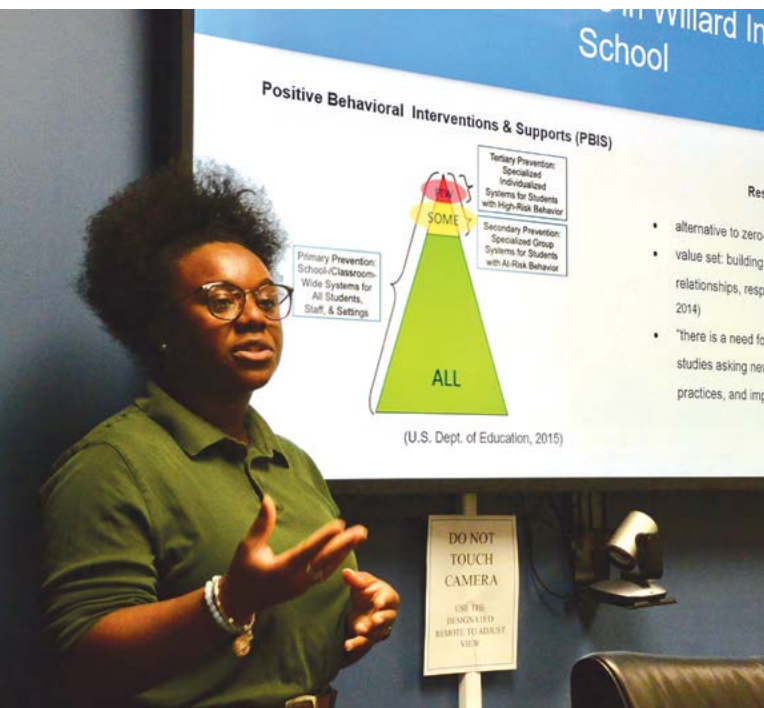
Doctoral student Ashlee Belgrave, who works with Willard Intermediate School in Santa Ana, presents her research to the UCI School of Education. Belgrave also coordinated a series of summer work groups featuring OCEAN K-12 sites.

UNCHARTED WATERS

Novel research is being conducted across Orange County – from Santa Ana to San Juan Capistrano, Costa Mesa to Orange – to improve a variety of needs.

For example, at High School Inc. Academies Foundation and Valley High School, doctoral students Phebe Chew and Grace Kim, along with Ahn, are conducting research to better understand the variation in career-technical education experiences – i.e., how do career-technical experiences improve students' college and career readiness, and what specific mechanisms lead to positive outcomes.

The group is also working to set up a data infrastructure that analyzes and tracks school alumni through college and beyond. Based on the data, the partnership will conduct in-depth analysis of the school's internship program – interviewing mentors, internship coordinators, and alumni – to improve the school's internship program to best support college and career readiness.

"It has been a pleasure to work with the UCI School of Education and the OCEAN program to implement our first-ever longitudinal study," said Mary Tran, executive director of High School Inc. Academies Foundation.

Tran said that one of the many findings from the study was that students who had a business mentor and/or participated in the school's core workforce development initiatives found the High School Inc. Academies program to be more helpful in assisting them in achieving their career and college goals than students who did not have those same experiences.

"With these findings, we are in the process of developing a plan to expand these core college and career experiences so that more students can participate and benefit," Tran said. "I'm confident the data will bring more meaning to the High School Inc. college and career academies model and will be crucial in the creation of the HSI Foundation's strategic plan."

At TLC Charter School in Orange – a full-inclusion school founded in 2018 in which students of diverse abilities, cultures, languages, and lived experiences learn together in the same classroom – doctoral candidate Yenda Prado and Professor Mark Warschauer are researching how the full inclusion model functions at the intersection of language, literacy, and technology.

"Inclusive models of education are under-researched areas of study," Prado said. "There isn't much literature on best practices for implementing a full-inclusion model or what that means for student learning, family support, or staff professional development."

The team is also researching how to integrate technology into classrooms serving students with diverse abilities and learning support needs, and is working with TLC's Founding Principal and Executive Director Dr. Jessica Tunney (Ph.D. '16) to publish a series of blog posts that outline best practices and resources for elementary school distance learning in response to COVID-19.

> ## The rhythm of these partnerships is starting to become clear, and it's incredibly encouraging.

"The OCEAN partnership keeps TLC connected to research on teaching and learning as we explore essential questions about schooling, education, and equity in practice," Tunney said. "We have been able to collaborate with university researchers and scholars as we design school-based learning opportunities that respectfully engage all learners at our school, develop innovations in inclusive education, and cultivate a collaborative, caring, and supportive environment for our diverse community of students, staff, and families."

At Katella High School in Anaheim, doctoral student Lora Cawelti and Associate Professor Penelope Collins are studying how instituting intentional practices encourages growth in the 5 C's (Creativity, Critical Thinking, Collaboration, Communication, Compassion and Character) and promotes student voice to build a positive school climate in a California Democracy High School. Through a mixed-methods approach that engaged students, teachers, and staff, the research team explored best practices and areas for growth in student-centered curriculum, civic engagement, student safety and well-being, and peer leadership.

Doctoral candidate Jiwon Lee and Professor Rossella Santagata are partnering with Rea Elementary, part of the Newport-Mesa Unified School District, and the Orange County Department of Education on a project known as School-Wide Improvement in Mathematics (SWIM). Lee and Santagata serve on the project's leadership team, and assist in the planning and support of mathematics professional development activities for teachers. The duo conducted teacher surveys and interviews and analyzed more than 150 K-2 students' work samples. Findings were used to inform future professional development.

"Our observations, surveys, and interviews showed that teachers changed their mathematics teaching practices by placing the child's thinking and reasoning at the center of instruction," Santagata said. "Teachers also appreciate the school's new focus on collaboration and refer to opportunities to co-plan and analyze student work together as fundamental to the improvement of their teaching."

Dr. Duane Cox, principal of Rea Elementary School, appreciates the time investment from Lee and Santagata.

"For them to attend our meetings and sit down with groups of teachers and learn along with them is incredibly powerful," Cox said. "We talk about professional development, systems, processes, data, and books. Their presence has helped build my capacity, and it's made me realize that I want my teachers to have this opportunity – to have these professional dialogues about articles and research."

June Ahn, associate professor and OCEAN director, addresses local K-12 schools at an OCEAN launch event in April 2019.

RESPONSE TO COVID-19

One of the main goals of OCEAN is to not only conduct research vis-à-vis the individual partnerships, but to then bring together the participating K-12 school sites to address common issues and goals, and serve the Orange County community. The seismic shift to remote instruction provided an opportunity for such collaboration.

This summer, graduate students in OCEAN conducted more than 30 interviews with administrators, teachers, staff, and parents to hear the unspoken stories of the COVID-19 pandemic, and how schools are dealing with the adversity. Common themes included proper ways to train staff to ensure quality remote learning, concerns over physical and mental well-being, ways to safely re-open schools, and worries for students and families facing financial difficulties and shifting roles and responsibilities.

"The pandemic forced us to be closer in our partnerships, and I think the value of having a network such as OCEAN becomes clearer," Ahn said. "It was not and is not business as usual – schools need partners to think and work with."

In June, UCI's Office of Inclusive Excellence awarded Ahn – along with Professor Rossella Santagata and Assistant Professor Adriana Villavicencio – a grant to document and synthesize the ways in which communities are supporting students, and provide support in areas of need through a Networked Improvement Community composed of School of Education researchers, school leaders, district leaders, and community members.

In kind, OCEAN established four working groups, focused on promoting mental health and well-being for students, working with teachers to improve pedagogy and learning, supporting Orange County principals and K-12 leadership, and supporting family learning pods.

With the support, Ahn and the family learning pods group are matching UCI undergraduates with families in need of tutoring services for K-12 students. K-12 schools in the OCEAN network are helping identify families in need, while the School of Education – and

UCI CalTeach program (see page 11) – are training volunteer students to serve as tutors.

"We found, through our interviews, that many parents and schools are searching for ways to provide personal attention to K-12 students as they attend virtual or hybrid schooling," Ahn said. "We believe that equitable and community-driven approaches are vital to help each other in this critical moment – we are going to use OCEAN to model how a university can help facilitate this type of help for communities and families in need."

YEAR 3 – HIGH TIDE

OCEAN enters its third year with tremendous momentum. Over the summer, OCEAN faculty received grants from the Gates Foundation, National Science Foundation, NewSchools Venture Fund, and Spencer Foundation to support various aspects of OCEAN work. This includes a partnership, led by Assistant Professor Andres Bustamante and Ahn, with the city of Santa Ana, to design learning opportunities into everyday city spaces such as bus stops, grocery stores, and playgrounds.

In total, OCEAN will receive more than $3 million in grant funding in the coming year, which Ahn attributes to the two years of groundwork laid by OCEAN partnership work and philanthropic support from early private donors.

Not stopping there, Ahn hopes to ride the wave of momentum off this past summer's working groups and grant awards.

"In the third year, my instinct is that we can accelerate cross-school collaboration and bigger research projects," he said. "The working groups we conducted this past summer could serve as a model of how to do this research, and I expect that by summer 2021, we will have pockets of schools doing cross-research in a similar fashion."

Understanding & Supporting Students in the Era of
COVID-19

Already in the process of tracking student experiences, attitudes, and behaviors, the *Next Generation Undergraduate Success Measurement Project* quickly adapted to study the impact of COVID-19 on UCI undergraduates.

In September 2019, the *Next Generation Undergraduate Success Measurement Project* – a bold project that sets out to improve our understanding of the value of undergraduate educational experiences – officially began tracking UCI undergraduates inside and outside the classroom.

In March 2020, UCI, like all universities across the nation, underwent a seismic shift to online instruction. As it turned out, the project served as a perfect vehicle to gain further insights about UCI undergraduates' experiences and attitudes related to the COVID-19 pandemic and changes in undergraduate education. The findings are now being used to inform how UCI is serving its undergraduates academically, as well as their physical and mental well-being.

"One of the great strengths of the *Next Generation Undergraduate Success Measurement Project* is that the research team is able to quickly pivot and study UCI undergraduates' ever-changing, real-world circumstances," said Richard Arum, dean and professor, UCI School of Education and principal investigator of the project. "While we never anticipated a pandemic of this scale affecting undergraduate education, we are nevertheless equipped and ready to track its effects and help the university address these challenges."

THE VALUE OF COLLEGE

The *Next Generation Undergraduate Success Measurement Project* is a state-of-the-art measurement project that is providing insight into the value of college and creating tools that other universities can utilize to better understand their own students. Supported by the Andrew W. Mellon Foundation, the project is tracking for two years a sample of 1,273 UCI undergraduates, comprised of freshmen, junior transfers, and continuing juniors. Everything from transcripts to online classroom behavior, living situations to student moods is being considered.

The study measures six key dimensions of postsecondary growth and development thought to be related to later life course outcomes by integrating student surveys, performance assessments, administrative data, and learning management system data. The six dimensions are: Cognitive Ability & Intellectual Dispositions; Life-Course Agency; Self-Regulation Skills; Social Capital; Civic Engagement; Psychological Flourishing & Mental Health.

There are multiple ways to examine life course outcomes. The project groups them into three categories: Postgraduate Education, Employment & Health Outcomes (occupation, income, health); Social & Psychological Outcomes (resilience, stress management, social connectedness); and Civic

Above: Richard Arum, dean of the UCI School of Education and principal investigator of the Next Generation Undergraduate Success Measurement Project welcomes more than 700 UCI undergraduates to the study, September 2019.

Outcomes (social responsibility, involvement in community organizations).

"We believe that the competencies and dispositions that we are tracking are essential for both labor-market success, and for creating a democratic citizenry," Arum said. "Through this project, we will be able to determine how college has an effect on supporting student growth and development associated with lifelong success."

A main goal of the study is to not only understand the student experience at UCI, but to also create tools that other universities can replicate to assess the undergraduate experience on their own campus. The findings from the UCI study will inform the development of a large-scale, longitudinal study of college and universities coordinated by the Inter-university Consortium for Political and Social Research (ICPSR) at the University of Michigan.

"We think every university in the nation should be doing this type of work," Arum said. "Our measurement aims not just to provide clearer demonstration of the value of educational investments, but also to inspire and inform efforts to improve institutional performance and advance educational equity."

PROJECT LAUNCH
After a full year of preparation, the student tracking portion of the project began in September 2019 at the Anteater Learning Pavilion. There, UCI Chancellor Howard Gillman greeted the students via video, stressing the importance of the work they were about to embark on.

"This is your chance to help us not only improve the quality of the educational experience here at UCI, but also transform the quality of the educational experience everywhere in the United States," Chancellor Gillman told the students.

Over the course of two days, students took four innovative assessment tasks designed in partnership with ETS to measure collaborative problem solving, perspective taking, confirmation bias, and critical thinking. In addition, the group took a survey developed by the UCI research team, which asked questions about expectations, goals, and more. Students also took an additional assessment designed by Sam Wineburg, professor, Stanford Graduate School of Education, that measures online civic reasoning.

Throughout the year, students were given additional surveys. Their course enrollment and performance were recorded, along with data on their usage of Canvas Learning Management System, the most widely used platform for UCI courses.

Some of the surveys were sent as notifications to students' phones, asking them where they were, what they were doing, and their feelings toward the activity. By collecting this information, the research team has the ability to assess student experiences outside of the classroom.

"As developmental psychologists, we know very little about people aged 18-25 – what you experience in college and how that shapes the rest of your lives," Jacquelynne Eccles, distinguished professor and member of the research team, told students during the project launch. "Through this project, we will get a really good insight into what your experiences are while you're a student – what does your day, week, semester look like?"

SUPPORT IN THE ERA OF COVID-19
In March, after the shift to online instruction was announced, the project team administered the first of two surveys, asking students to measure their stress levels across different categories, assess their overall mental health, and identify new responsibilities related to COVID-19.

In April, two weeks into the spring quarter, a second, similar survey was administered. More than 750 students participated in the two surveys.

The surveys found that UCI undergraduates were responding to the pandemic in altruistic and community-focused ways, but were nonetheless concerned about how the pandemic would affect their education.

In particular, it was found that students were more concerned for their larger community than themselves (see Figure 1); students' biggest source of stress was the impact the COVID-19 pandemic will have on their education – though they believe that UCI's actions have been at the appropriate level of stringency; and students' mental health has not been adversely affected since the onset of the pandemic.
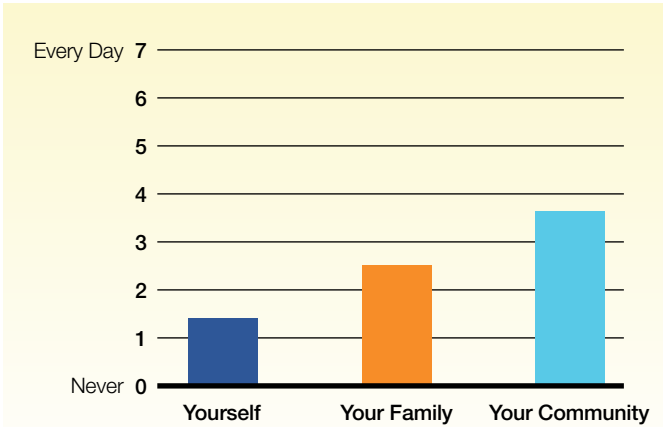

Figure 1: Results from surveys administered to students in response to COVID-19. Students were asked how many times in the previous seven days they felt stress related to themselves, their family, and their community.

Students reported more stress related to academic demands compared to stress in other domains, and the stress related to academic demands increased after UCI moved to online classes. Eighty percent of students were concerned that the shift to online classes would cause disruptions to their academic progress (see Figure 2).

The results of these surveys provided the framework for UCI to launch a robust online support system that includes distance learning aids, mental health counseling, physical fitness classes, and assistance with basic needs.

The UCI Division of Teaching Excellence and Innovation also created a web-based Remote Student Success Guide, which contains best practices for developing the organizational and study skills necessary to succeed in a distance learning environment. For those who lack access to a computer or internet connection, UCI's Office of

Information Technology offers laptop and Wi-Fi loan programs.

To support undergraduates' mental and physical health, UCI is providing access to a variety of resources. Remote therapy and social worker sessions were made available through the UCI Counseling Center, the Anteater Recreation Center offered a variety of online fitness options, and the FRESH Basic Needs Hub provided emergency aid to students who were unable to return home and were experiencing food insecurity.

"These surveys are unique in that we were able to capture the attitudes and concerns of undergraduate students in real-time, before and after the pandemic, as their college experiences were radically altered," Arum said. "What we learned is informing how the university serves undergraduates, as we work to maintain high-quality learning experiences and support mental health and physical well-being."

Additional surveys will be administered over the course of the coming academic year as students and the university continue to grapple with challenges related to the pandemic.
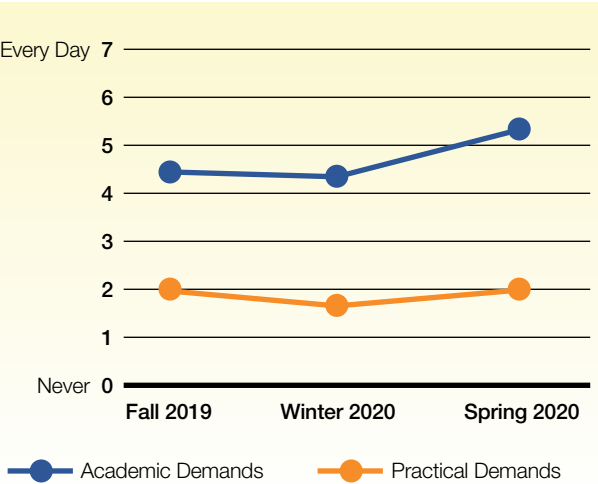
Figure 2: A subsample of the survey participants completed surveys before the outbreak of COVID-19. For these students, the project team investigated if their perceived stress due to academic and practical demands changed over time. Students were asked: "In the past seven days, how often did you perceive stress related to academic demands and practical demands?" Students' stress related to academic demands increased after UCI moved to online classes, and 80 percent of students were concerned that the shift to online classes would cause disruptions to their academic progress.

The Equation for Science Learning

Through an NSF CAREER grant, Associate Professor Hosun Kang is supporting students from historically marginalized communities in learning about science in a meaningful way.

D espite decades of reform efforts and the use of experiential activities in science instruction, research indicates that science classroom learning for students remains largely procedural, undemanding, and disconnected from the development of substantive scientific ideas.

A lifelong advocate of civic responsibility, equality, and science learning, Associate Professor Hosun Kang is working with the Tustin Unified School District, its teachers, teacher leaders, and students to change science instruction from rote memorization to an engaging and empowering learning experience that supports historically marginalized student populations.

"This project focuses on supporting Latinx and multilingual students in learning about science in a meaningful way," Kang said. "The discourse over

who can and cannot succeed in the science classroom has been racialized. Even Latinx students who routinely receive A's in their classwork don't self-identify as someone capable of succeeding."

Kang is hoping to empower both students and teachers through the partnership. Working together, she explains, the team can transform science teaching and learning at the classroom level by developing new curricula and assessments for learning, as well as generate systematic research that contributes to understanding how science teachers and students learn.

This past year, the first of the five-year project, Kang and her research team worked with chemistry and physics teachers to reframe curriculum to both relate to students and imbue them with a sense of civic purpose. Instead of simply plugging numbers to do stoichiometry, for example, students are asked, "How can we design a chemically powered heating or cooling device for people who don't have access to electricity?"

Early results are encouraging. Kang mentions a Latinx high school female student who historically received C's in her science classes. When a newly designed chemistry project posed the question, "How can we use chemistry to make a difference in our community?" The student responded by designing and creating a "heating blanket" for homeless individuals and developing a website to share the product and her story. She received an A+ for the project.

"Everyone deserves a high-quality science learning experience," Kang said. "Not everyone is going to

become a scientist, but we encounter science-related problems every day – climate change, wildfires, COVID-19 and immunization. Science impacts us individually and as a society, and it's important that people use science and enjoy learning about it."

Participating teachers also laud the program's structure and its ability to produce tangible, practical solutions to implement immediately.

"Working with colleagues has helped me become a better teacher because I get to plan with them and see how they teach the lesson," said Paul Tschida, a physics teacher at Tustin High School. "Even though we teach something in different ways, I still take ideas from their classrooms to bring back to my class right away to see what works best for students."

"You're not just given a tool to use, like many professional development programs provide, but instead you are given an opportunity to improve your own work and focus your energy to improve what you are already doing," said Lindsay Fay, chemistry teacher at Tustin High School. "It is really tailored to exactly what you want – I'm not wasting time on something theoretical or another class that isn't what I teach."

The work with Tustin Unified School District is part of Kang's research for an NSF CAREER grant, *Expanding Latinxs' Opportunities to Develop Complex Thinking in Secondary Science Classrooms through a Research-Practice Partnership*. CAREER grants are given "in support of early-career faculty who have the potential to serve as academic role models in research and education and to lead advances in the mission of their department or organization."

Kang is also faculty advisor for the UCI Science Project, a new initiative within the UCI Teacher Academy. The UCI Science Project is committed to providing professional development opportunities for local K-12 science teachers focused on Next Generation Science Standards, and, Kang explains, to make the world a better place through the teaching and learning of science.

"We have to address the new standards, but we cannot do that without thinking about the injustice and inequity that our students experience," Kang said. "We are creating a space for teachers to engage in this conversation."

Associate Professor Hosun Kang, middle, works with a group of students at Tustin High School.
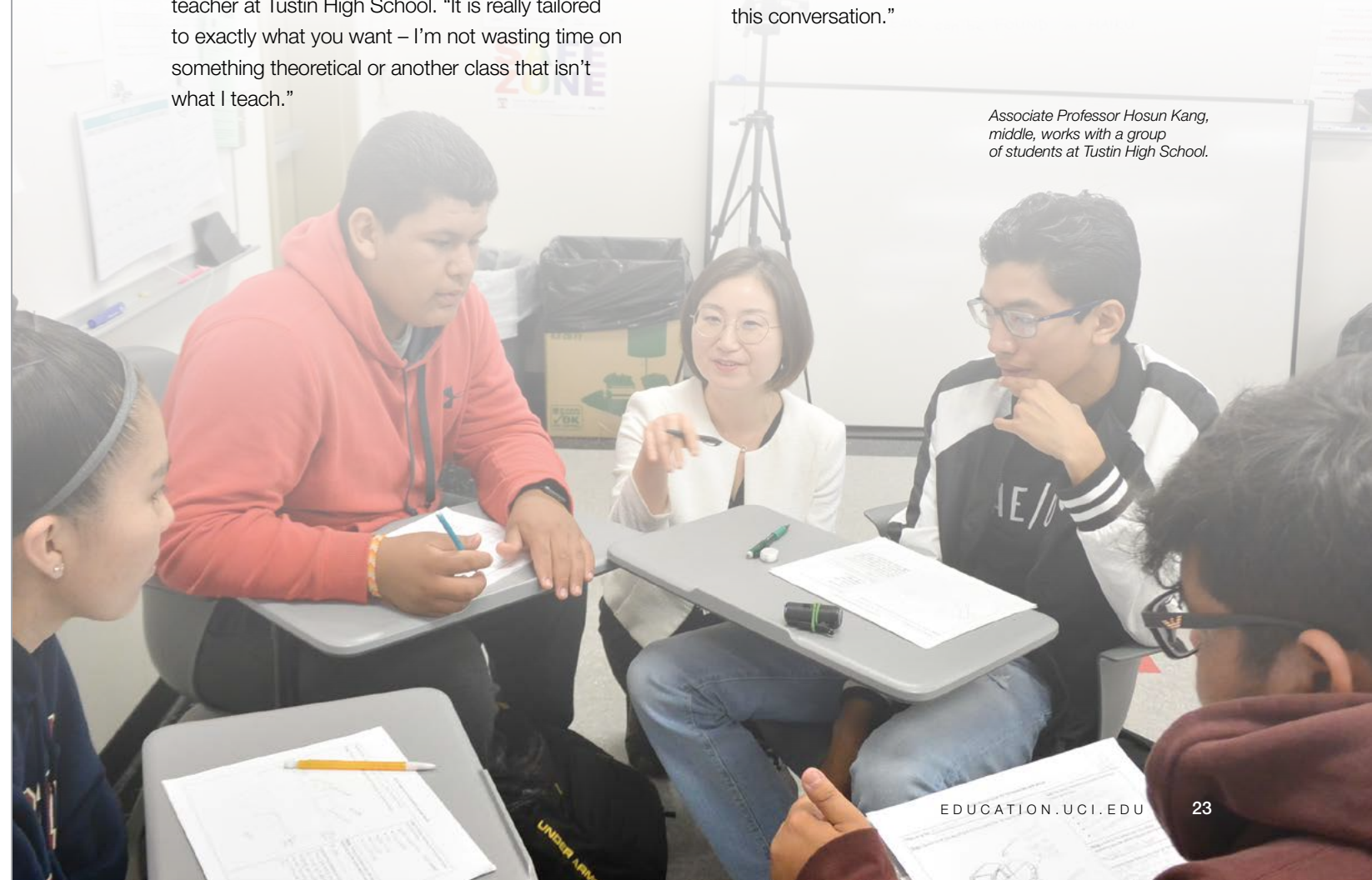
Kang earned her Ph.D. in Curriculum, Instruction and Teacher Education from Michigan State University. While a doctoral student, Kang drove three hours round-trip, weekly, to an urban middle school for an entire year to follow a group of seventh- and eighth-grade girls. She began shadowing the students before the day began until its completion, through every class, including lunch and physical education.

She found that the Black students' discourse and attitude toward science dramatically changed over the course of just one year. Their brilliant ideas and rich experiences outside the classrooms were not leveraged, their peers did not recognize them as capable of doing the work, and support was not provided. In essence, Kang saw how a Black girl cumulatively changed her relationships with science, school, and peers through social interactions before her very eyes.

"That still resonates with me today," Kang said. "Before that, I was looking at science teaching and learning from the teacher's perspective, but after that I learned how difficult it is for some students, in particular students of color, to navigate spaces, and I began looking at problems from both a teacher and student perspective."
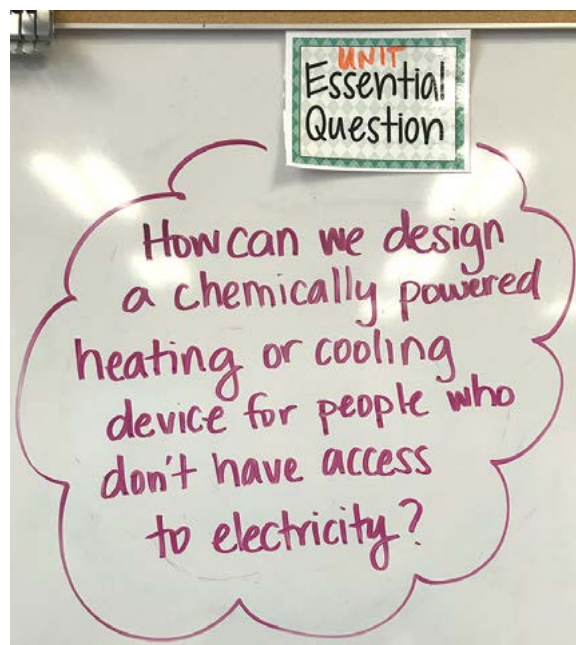
An example prompt assigned to the high school students working with Kang and others.

> **"Everyone deserves a high-quality science learning experience … This project focuses on supporting Latinx and multilingual students in learning about science in a meaningful way."**

Kang used data from this project in a 2019 *Science Education* publication – *How do middle school girls of color develop STEM identities?* The paper was one of the most downloaded in the *Science Education Journal* in 2019.

Originally from South Korea, Kang taught science to middle and high school students in the country for 7 ½ years. Over that time, she desired to learn more about education so that she could better support the students that were struggling at school.

Kang cites a former mentor, Geun-Choon Lee, whom she met when she began her career as a novice teacher, as an ongoing inspiration for her work.

"She showed me what it means to be a true educator, and how an educator can care for the students, listen and be respectful, and have integrity as an educator. She became a model in my mind of how I want to conduct myself professionally."

As an immigrant scholar herself, Kang said she empathizes and connects with non-white multilingual students in the classroom. Dating back to her time as a graduate student, this connection has informed her research.

"I want to continue working on the ground floor with students every day," Kang said. "The work is inspiring to me, and I feel like I can give back to the community through my research – I view it as my civic responsibility."

Keeping it Simple

Calling the degree requirements and transfer procedures at California community colleges "complex to navigate," Assistant Professor Rachel Baker is working to simplify things.

In 1994, the California state senate passed SB 1914, establishing a program that allows students enrolled in any campus of the California Community Colleges to enroll, without formal admission, in a maximum of one class per term at any CSU or UC campus.

The program, known as "Cross-Enrollment," has noble aims – to expose students, particularly underserved students, to the community and academics of a four-year university. By doing so, students become familiar with faculty, classmates, and the campus. Such experiences could make it easier for students to eventually transfer to one of the state's public universities.

Assistant Professor Rachel Baker recently discovered the program is not as popular as one might expect. Approximately 150 students have cross-enrolled from the California Community Colleges System to UCI over the past five years, a paltry number when considering the immensity of the California Community Colleges System.

"There are more than 250,000 community college students within a 20-minute drive of UCI, and a majority of them enroll with the intention of transferring to a four-year institution," Baker said. "It's important we figure out why this program hasn't been utilized to the extent it could be and how we might make it more popular among students. Increasing participation in Cross-Enrollment might lead to better educational and career outcomes for thousands of students."

With a five-year, $2.5 million grant from the National Science Foundation, Baker is doing just that. This past year, the first of the grant, Baker and Loris Fagioli, director of research at Irvine Valley College, along with a team of undergraduate students, doctoral students, and postdoctoral scholars, conducted 12 focus groups with students and counselors at Orange Coast College, Irvine Valley College, and Saddleback College.

Their preliminary findings revealed that roughly 90 percent of students were unfamiliar with the Cross-Enrollment program. Once learning about it, their interest piqued, but concerns about assimilating, transportation costs, and access to tutoring and library services pervaded.

As did the question of what classes to take, for a few reasons. First, degree requirements are complex and it is difficult to determine which classes can be used to fulfill specific requirements. Second, many students noted that the smaller class sizes and accessible instructors at their community college were what initially attracted them to the school; students were worried that taking a difficult class in an unfamiliar

setting might harm their GPA and, ironically, lower their chance of successfully transferring.

Now that Baker has discovered these concerns, she and her project team are establishing an intervention that will provide a range of services to groups of community college students at the partner campuses. For example, one group of students will simply receive information about the program. Another group might receive information and a parking stipend. Yet another might receive information, parking, assistance in filling out the required paperwork, and guidance on selecting which class to enroll in.

Baker and her team will then follow the students for five years to see what helps increase the rate of participation in the Cross-Enrollment program at UCI, and if students ultimately transfer to UCI upon earning their associate degree.

Despite the low participation rate to date, Baker stresses that community college counselors are not to blame.

"Community college counselors need to know how to advise students with incredibly diverse backgrounds and incredibly diverse goals," Baker said. "They need to identify who would be a good fit for this program and who is eligible, and then advise them on how to pursue it at each of the different campuses; the process is different at UCI, UCLA, and CSUF. The lack of participation is not a reflection of their efforts."

Baker's research focuses on higher educational policy and the effects it has on student persistence and success. In 2019, Baker received a prestigious National Academy of Education Spencer Fellowship to support the third and final part of a study that is examining the complexity of degree requirements in colleges. That is, not the difficulty of the classes in a given major, but how clearly the requirements are presented or explained.

"Figuring out degree requirements can be a confusing process," Baker said. "There's a large body of literature that has found that many students mistakenly take classes that didn't count for their degree requirements, or that they need to enroll in an extra semester because they didn't know they needed to take a certain class until it was too late."

Baker began researching the topic in 2016 by looking at the listed degree requirement for four degrees – Economics, Psychology, Biology, and English – at all the UC and CSU campuses. She then assigned values of complexity based on three factors.

First – how many distinct course categories (groups of classes that are completely interchangeable) there are. Second – how many operators there are in the requirements: "Take Class A *and* Class B" or "Class B can fulfill Requirement 1 *or* Requirement 2, but *not both*," for example. Finally – how many unique ways there are to graduate.

Baker called this a "fun exercise," but not one that would prove itself very useful if it did not match what students considered to be complex. Therefore, Baker began surveying students to learn their preferences among the ways major requirements are presented. Through this process, Baker established guidelines for departments that reflected students' opinions of complexity.

As part of the Spencer Fellowship, Baker is now coding the complexity of major requirements for eight different majors on six community college campuses. She will then combine this with data on student course taking from those community colleges. Using major- and campus-fixed effects, she will determine if the complexity of major requirements is correlated with a student's probability of graduating, and their efficiency in graduating.

"Our goal is to see if our measures of complexity are actually correlated with student outcomes," Baker said. "There is important complexity – requiring a set of classes that will stretch a student and force them to think in different ways is good. Taking classes that you did not need to because you thought you had to is not good. We hope this study provides usable information for departments on how they can organize their classes in a way that is much easier for students to understand without sacrificing any rigor or breadth."

Reducing the complexity of degree requirements might take on added importance this fall and in the near future – Baker anticipates the COVID-19 pandemic to lead to increased enrollment at community colleges.

"At least for a while, more students will be enrolling in community colleges and they will be facing capacity constraints, so hopefully my research leads institutions to think about how to design themselves in ways that are helping student decision making," Baker said. "I think there are things that schools can address relatively easily, and they can have a positive effect."

Baker sees the California Community Colleges System as an underappreciated, fascinating system. "They are rich, effective places, and they are under-resourced and being asked to do so much," Baker said. "I marvel at how much is happening there and I learn so much from the students, faculty, and counselors at the schools. The thought that my work could be of service to them is exciting."

Baker enjoys working at UCI and the School of Education because of the school's well-deserved pride at being an effective engine of social mobility. Additionally, Baker appreciates that the mission of the university and the School of Education are aligned with her research.

"Being at a school that is willing to examine itself is great, as is the fact that our faculty and administrators want to learn how to best serve students," Baker said. "There's this attitude and mission on campus that we're going to study ourselves and learn about students and do this better.

"For someone who studies higher education, it's such an inspiring place to work."
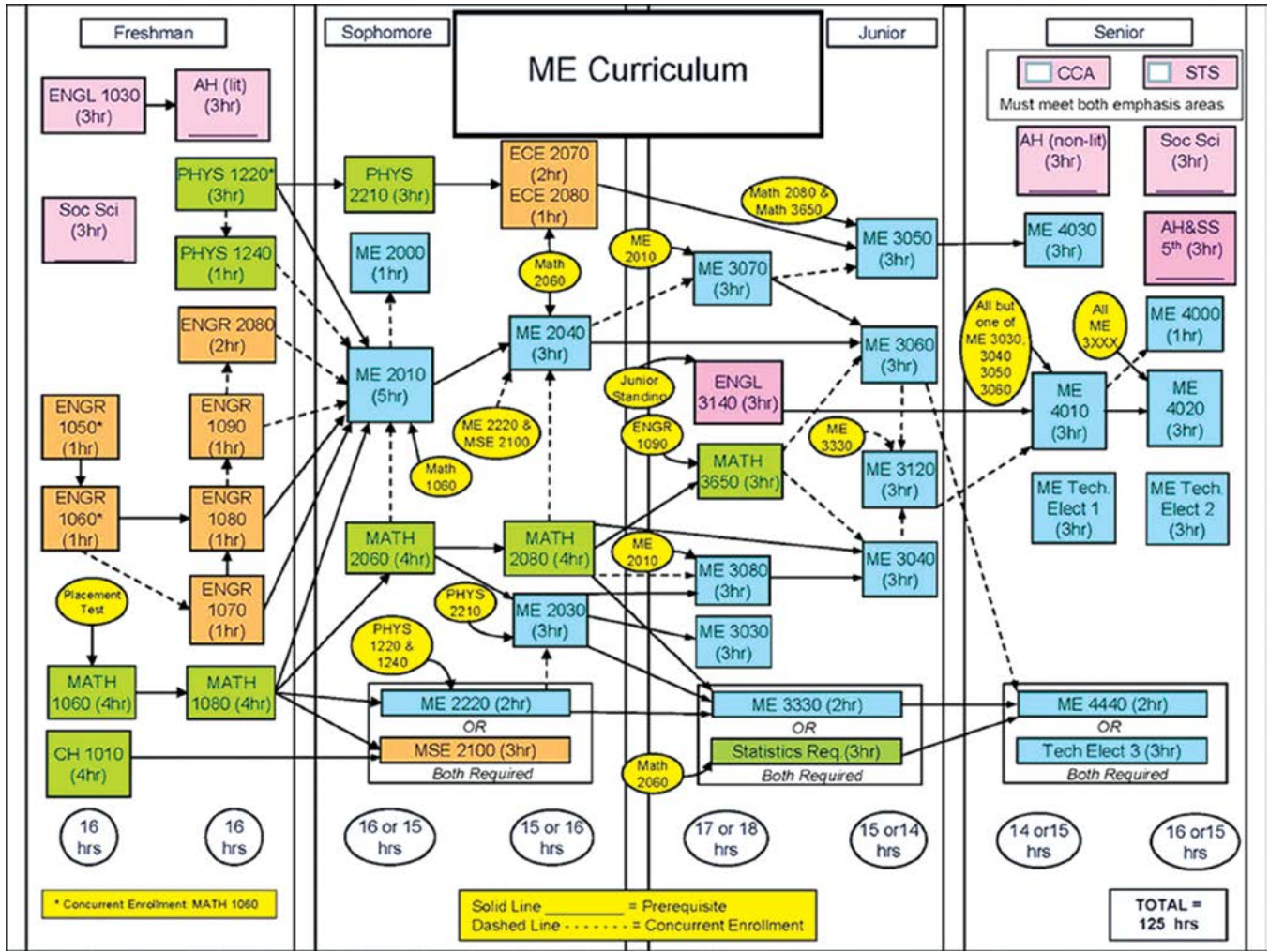
A sample course map detailing the degree requirements for a Mechanical Engineering degree at a four-year university.

Role Model

Assistant Professor Nia Dowell created a software that analyzes conversations and identifies the different emergent roles individuals are playing in a group. By doing so, users can improve group and individual performance, address inequities, and more.

Different people assume different roles when working in a group. There are leaders and followers; both loquacious and soft-spoken individuals; and those whose words spark inspiration and those whose words are quickly forgotten.

What if there was a way to quickly and automatically identify the roles of different group members, so that individual and group performance could be improved? Better yet – what if it could also be applied to online settings, where body language is non-existent, and interactions are typically more strained?

School of Education Assistant Professor Nia Dowell developed a software that does just that.

"Roles are one of the most important concepts in understanding human socio-cognitive behavior," Dowell said. "The software allows us to understand the underlying human socio-cognitive process. We can also understand and differentiate why certain

groups and teams perform better than others and facilitate ways to improve performance."

HOW IT WORKS

The software, Group Communication Analysis (GCA), reads transcripts of conversations – be it a Zoom call, an in-person meeting, an online chat room or Twitter feed. It then begins to code not only user contributions, but also how the rest of the group replies to a user's contributions.

The GCA analyzes conversations on six metrics, or dimensions – general participation; consistency or novelty in contributions; responsivity (or not) to their peers contributions; ability to evoke replies from peers; originality in their statements; and the level of conciseness in their contributions (see Figure 1).

From these, the GCA identifies individuals as performing one of six roles: *Chatterers, Drivers, Followers, Lurkers, Socially Detached* and *Influential Actors* (see Figure 2).

For example, the socially detached individual contributes frequently to a group dynamic, but the social impact of their comments are low. These individuals are usually dominating the conversation, but not in a productive way, nor are they attending to their partners or teammates. Meanwhile, a driver is responding to individuals while moving the discussion forward and having his or her words well-received by others.

"You identify the role a person is playing not only by their engagement, but by how others are responding to their engagement," Dowell said. "Through all this, we start to capture the basic fundamentals of human interaction and can create profiles and analyses to understand what role a person is playing, and what impact they will ultimately have on the group."

USING THE DATA

There are myriad ways that the software, which is patent pending, can be used, and how the data can be interpreted.

Dowell currently uses GCA on collaborative problem solving and collaborative learning environments in academia, and recently began using GCA on chat forums for both Massive Open Online Courses and learning management systems, such as Canvas.

The findings from a given analysis can lead teams to implement minor tweaks. For example, creative solutions and ideas come from groups of individuals who share novel information, not simply what is already known to the group. If a group struggles with "newness," then they can work to implement procedures so that its members share novel thoughts more frequently.

The GCA can also identify larger societal issues in group dynamics, such as threats to inclusivity and equity. Dowell has used GCA to gain a deeper understanding of the communication dynamics in online team interactions across gender and ethnic lines.

For instance, Dowell uncovered differences in learners' interpersonal interaction patterns across ethnic populations, between male and female students, and the influence of gender group composition on equitable interpersonal discourse during STEM interactions. Across these studies, Dowell discovered substantial intra- and interpersonal differences in women and underrepresented minorities' engagement, which could influence their sense of belonging in online STEM environments.

As depicted in Figure 3, Dowell and others discovered large differences in the sociocognitive

Figure 1: *The six metrics of the GCA.*

Alignment of GCA Dimensions with Theoretical and Empirical Support			
GCA Dimensions	**Psychological & Discursive Processes**	**Description/Example Behavioral Makers**	**Relevant Theoretical Frameworks & Constructs**
Participation	Engagement	General level of an individual's participation, irrespective of the semantic content of this participation	Activity theory; Social presence; Socio-constructivist
Internal Cohesion	Monitoring and reflecting	The tendency of an individual to consistency or novelty in their own contributions	Self-regulation and metacognitive processes
Responsivity	Uptake and transactivity	The tendency of an individual to respond, or not, to the contributions of their collaborative peers	Meaning-making; Co-regulation; Interactive alignment; Social coordination; Knowledge building; Common ground; Knowledge convergence
Social Impact	Productive or popular communication	The tendency of a participant to evoke responses, or not, from their collaborative peers	Social coordination; Knowledge building; Common ground; Co-construction
Newness	Novelty of information shared	The tendency to provide new information or to echo previously stated information, irrespective of the originator of the information	Monitoring; Information sharing
Communication Density	Concise communication	The extent to which participants convey information in a concise manner	Common ground; Effective communication

interaction dynamics between male and female learners in STEM online team interactions.

Interestingly, the observed differences between males and females is not in their degree of participation, but in three other areas – the extent to which they: engage in productive discourse that is responsive to other learners (i.e., overall responsivity), provide meaningful contributions that warrant follow-up by peers (i.e., social impact), and monitor and build on their own previous contributions over the course of interaction.

Interactions such as this can have a detrimental impact on a female learners' sense of belonging within STEM fields, and consequently contribute to the existing retention issues.

"The GCA allowed us to examine a group setting broadly, from which we found a threat to female students in STEM," Dowell said. "Now, we can proceed to devise an inclusion-focused intervention."

GCA has drawn interest from several companies: everything from a call center who would like to improve customer interactions to the U.S. Military, who are looking to analyze operational conversations in the field.

"This can be used in many ways beyond what we're already doing," Dowell said. "The GCA can be applied to any formal or informal situation or conversation where individuals are coming together to solve a problem."

While it is necessary to have a text transcript of an interaction for GCA to work, technological advances are making this an impending reality. Today, transcripts of Zoom calls are readily available. Dowell also sees speech-to-text technology as a way to instantly deliver a written transcript of a meeting – physical or virtual – to the GCA.

Over the past few months, conversations have moved to a virtual space due to the widespread adoption of remote instruction and telecommuting. As a result, Dowell said the software has taken on heightened importance.

"The pandemic is highlighting what was already an important movement in our society," Dowell said. "Every day, even before COVID-19, we engaged in online interactions. Optimizing those dynamics was already important, but COVID-19 underscores that."

LEARNING THE LANGUAGE

Dowell attended the University of Memphis, where she earned a B.A. in Psychology and a Ph.D. in

Figure 3: *Gender differences across GCA dimensions. Compared to females, male learners were less responsive to their teammate's contributions (i.e., overall responsivity), provided less meaningful contributions that warrant follow-up by peers (i.e., social impact), and engaged in less monitoring and building on their own previous contributions over the course of the interaction (i.e., internal cohesion).*
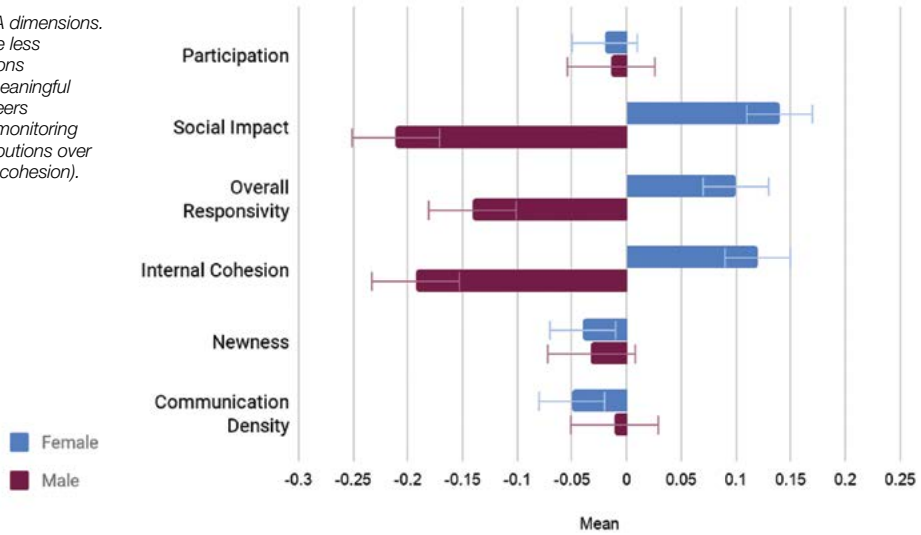
Cognitive Psychology with a Cognitive Science Certificate. In lab work at Memphis, she worked on affect detection and its implications on learning – how to tell through pupil dilation and physiological factors if a student is upset, uncomfortable, bored, or honed in.

Dowell soon became interested in natural language processing tools. At the time, these tools were limited to individual measures – there was nothing available that captured the temporal dynamics or back-and-forth nature of conversation, which Dowell wanted to quantify.

"I started thinking about what is important in conversation, and I reviewed all the literature out there, from cognitive and organizational psychology to social computing," Dowell said. "I came away with a very interdisciplinary understanding of conversation and socio-cognitive roles individuals take on during human interactions."

In addition to her research and scholarship, Dowell provided text analysis consulting to several organizations, including FedEx and the U.S. Department of Defense. Dowell found this work very exciting and these diverse experiences helped to broaden her interdisciplinary perspective on language and discourse. For instance, at the latter, Dowell used natural language processing tools to help predict and prepare for events during social movements, such as the Arab Spring and authoritarian regimes more broadly.

Dowell joined the UCI School of Education in summer 2019. She currently directs the Language and Learning Analytics Lab, an interdisciplinary group of students and faculty who explore the intersections of technology with teaching, learning, and education, with a particular focus on learning analytics, educational data mining, and collaborative engagement. The lab has several research projects underway: Implementing Agile Methodology to academic research; analyzing how group dynamics differ between cultures; and examining the sense of student belonging during team interactions within UCI STEM courses.

In spring, Dowell was elected to the executive committee for the Society of Learning Analytics Research (SoLAR). She is also serving as program chair for the Society's annual Learning Analytics and Knowledge (LAK) conference, LAK21, scheduled to take place in Newport Beach, April 11-15, 2021.

Dowell teaches graduate and undergraduate courses at the School of Education. She hopes to follow the examples set by her Ph.D. Advisor, Dr. Arthur C. Graesser – whom Dowell calls "the best human being I ever met."

"He never gave me the answers, and instead gave me the freedom to explore on my own. At the same time, he gave me all the resources I needed to succeed," Dowell said. "I really hope that I can do that for my students in my career."
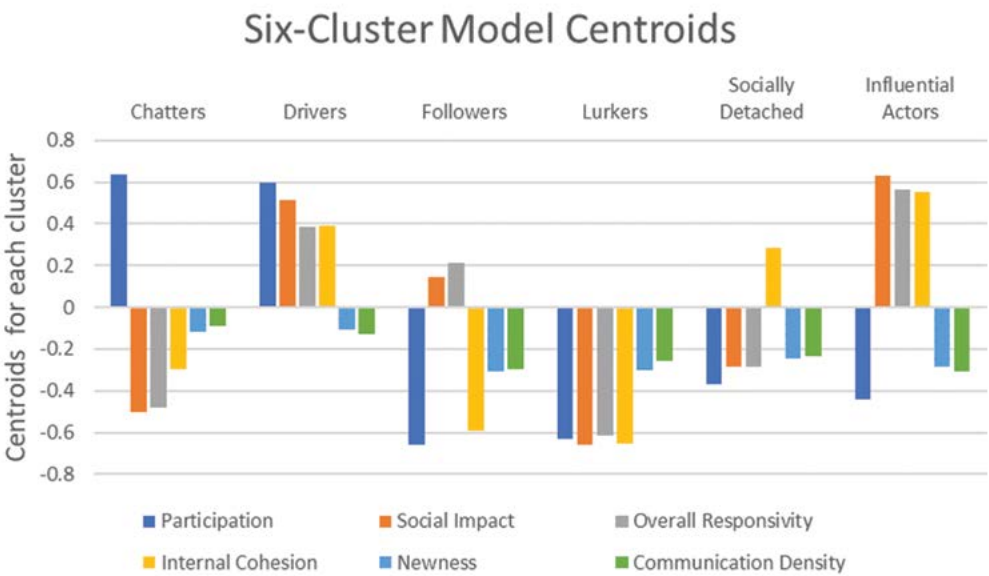

Figure 2: *Centroids for the six-cluster solution across the GCA variables.*

This year, the UCI School of Education welcomes two new faculty: Dr. Gustavo Carlo and Dr. Julie Washington.

"Professor Carlo and Professor Washington are not only leading experts in their respective fields, but are also equity-focused academics who will carry forth our school's mission of improving educational opportunities and outcomes for students of all backgrounds," said Richard Arum, dean and professor of the UCI School of Education.

Recruitment of the new faculty began in fall 2019, and both professors received Chancellor Inclusive Excellence Awards from the Office of Inclusive Excellence and **Douglas M. Haynes**, Vice Chancellor for Equity, Diversity & Inclusion.

New in July 2020, the Chancellor's Inclusive Excellence Awards Program is a pilot program at UCI, funded through an Advancing Faculty Diversity grant from the UC Office of the President. The program aims to attract diverse ladder-rank faculty to recognize their deep scholarship on inclusive excellence and potential contributions at UCI.

Gustavo Carlo
Professor

Professor Carlo joins the UCI School of Education from the University of Missouri's Department of Human Development and Family Science. There, he was the Millsap Endowed Professor of Diversity and Multicultural Studies, and co-director and founder of the university's Center for Children and Families Across Cultures.

His primary research interest focuses on understanding positive social development and health in culturally diverse children and adolescents. Many of his projects focus on U.S. ethnic/racial groups, including Latino/a youth and families. He has published more than 200 books, chapters, and research papers; received research grants from several agencies, including the NSF, NIH and Spencer Foundation; and serves on multiple journal editorial boards, including *Child Development* and *Journal of Early Adolescence*. In 2018, he received the Outstanding Mentor Award from the Society for Research on Adolescence. He currently serves as a member of the Society for Research in Child Development Governing Council, as associate editor of the *International Journal of Behavioral Development*, and as co-editor of the upcoming APA *Handbook of Adolescent Development*.

"I am pleased and honored to join the distinguished group of faculty at the UCI School of Education. The school has a storied reputation for excellence in scholarship, teaching, and work that improves the lives of families and children. I look forward to continuing this tradition. My work focuses on furthering our understanding of the multiple factors that influence culturally diverse children's positive developmental trajectories. This focus is timely and critical given the challenges that many children are facing, especially those from minority groups."

Julie Washington
Professor

Professor Washington will join the UCI School of Education in January 2021 from Georgia State University's College of Education and Human Development. There, she is chair and professor of the college's Department of Communication Sciences and Disorders. She is also co-director of the Center for Research on the Challenges of Acquiring Language and Literacy – a unique center focused on language and literacy research in high-risk, urban, and impaired populations.

Her research is focused on the intersection of literacy, language variation, and poverty. In particular, her work focuses on understanding the role of cultural dialect in the identification of reading disabilities in African American children and on disentangling the relationship between language production and comprehension on development of reading and early language skills for children growing up in poverty. Washington also directs, and will bring to UCI, a Learning Disabilities Research Innovation Hub, funded by the National Institutes of Health, Eunice Kennedy Shriver National Institute on Child Health and Human Development (NICHD). The research hub is focused on improving early identification of reading disabilities in elementary school-aged African American children, and includes a focus on children, their families, teachers, and communities.

Washington is also an investigator on an NICHD-funded project focused on cultural language used by low-income African American fathers with their young children. This project is a collaborative effort between researchers at multiple institutions, including UCI.

"The UCI School of Education has a diverse and very distinguished mix of scholars who are contributing significantly to research in education. I look forward to joining this group and bringing into the mix research focused on the unique needs of African American children growing up in poverty. In the current social and political climate, the exceptional strengths and challenges facing these children and their families has heightened significance across the U.S."

UCI School of Education
By the Numbers

$96.1M
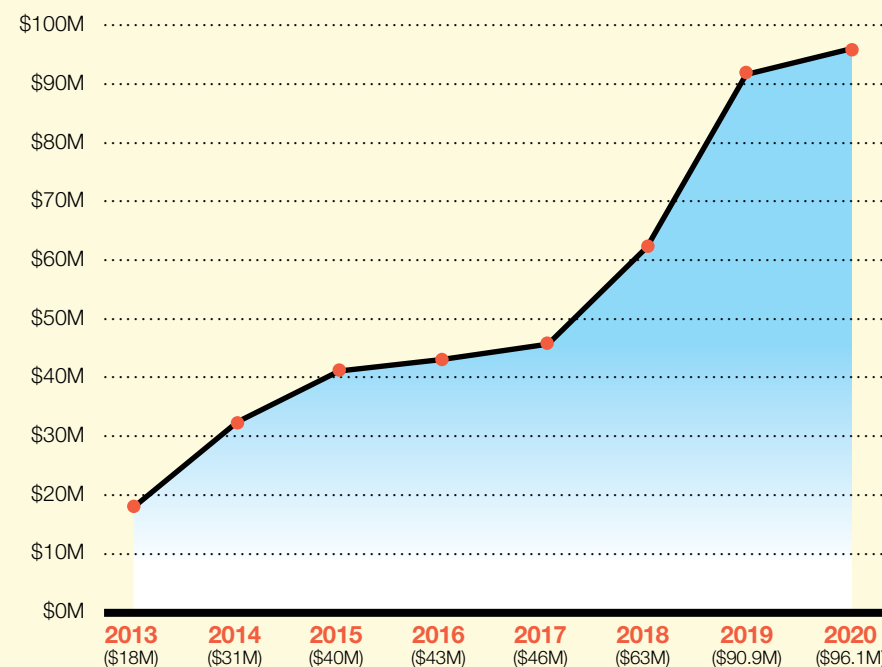Active grant funding, among 39 full-time faculty

95
Active grants, among 39 full-time faculty

20
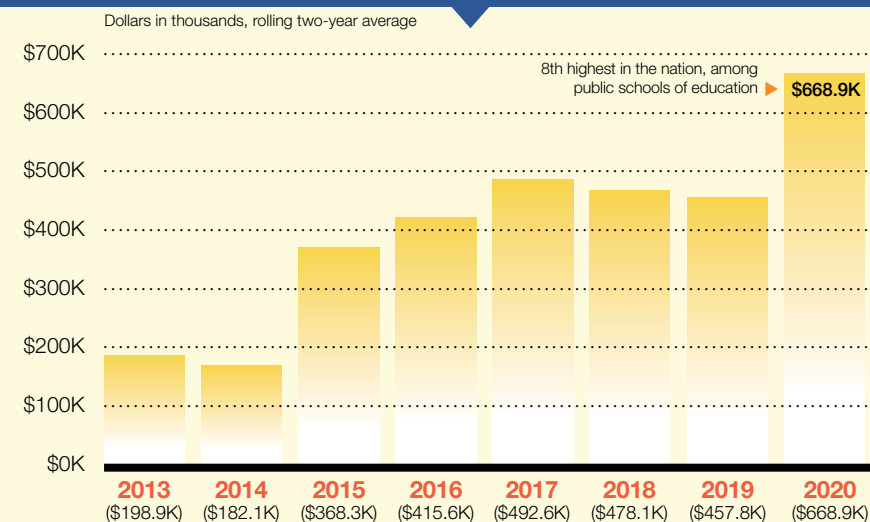Active grants from the **National Science Foundation**

RISE IN FUNDED RESEARCH BY YEAR

Year	Funding
2013	($18M)
2014	($31M)
2015	($40M)
2016	($43M)
2017	($46M)
2018	($63M)
2019	($90.9M)
2020	($96.1M)

$100M
$90M
$80M
$70M
$60M
$50M
$40M
$30M
$20M
$10M
$0M

RESEARCH EXPENDITURES PER FACULTY

Dollars in thousands, rolling two-year average

8th highest in the nation, among public schools of education ► **$668.9K**

Year	Amount
2013	($198.9K)
2014	($182.1K)
2015	($368.3K)
2016	($415.6K)
2017	($492.6K)
2018	($478.1K)
2019	($457.8K)
2020	($668.9K)

$700K
$600K
$500K
$400K
$300K
$200K
$100K
$0K

*All data as of June 2020

16
Active grants from the **National Institutes of Health**

12
Active grants from the **Institute of Education Sciences**

6
Active grants from the **U.S. Department of Education**

2
Active NSF Early Career Grants

RECENT GRANTS

Below is a small sample of grants recently awarded to our faculty:

► **Carol Booth Olson** – Institute of Education Sciences
WRITE Center for Secondary Students: Writing Research to Improve Teaching and Evaluation

$5M

► **Mark Warschauer** – U.S. Department of Education, Office of Elementary and Secondary Education
Improving Pedagogy to Accelerate Computational Thinking (IMPACT)

$4M

► **Elizabeth Peña** – National Institutes of Health, National Institute on Deafness and Other Communication Disorders
Test of English Language Learning (TELL)

$3.18M

► **Andres Bustamante** – National Science Foundation
Playful Learning Landscapes: Promoting Informal STEM Learning in Public Spaces

$2.57M

► **Rachel Baker** – National Science Foundation
Improving the Transition of Community College Students into University STEM Programs Through Cross-Enrollment

$2.5M

► **Hosun Kang** – National Science Foundation
CAREER: Expanding Latinx's Opportunities to Learn in Secondary Science Classrooms Through a Research-Practice Partnership

$1.51M

► **Young-Suk Kim** – Institute of Education Sciences
Developing Theory- and Evidence-based Children's Oral Language Intervention – Integrated Multi-component Oral Development for Language and Literacy (iMODEL)

$1.4M

FAST FACTS

No.1
Best Colleges in America – *Money* Magazine

No. 1
University doing the most for the **American Dream** – *The New York Times*

No. 1
Best Value College, among public universities – *Forbes*

No. 10
Graduate School of Education, among public universities – *U.S. News & World Report*

10,000+
Alumni worldwide

5
Members of the **National Academy of Education**

4
NAEd/Spencer Postdoctoral Fellowships awarded to our faculty, last three years – most awarded to any school of education in the nation

450+
Class of 2020 graduates, across all three degree programs

UCI Lauds & Laurels honors Dr. Carol Hansen

Dr. Carol Hansen

UCI's Lauds & Laurels program honored Dr. Carol Hansen (Ed.D. '05), superintendent of the Ocean View School District, as the 2020 Distinguished Alumna for the School of Education.

A lifelong resident of Long Beach, Calif., Hansen's contributions to Southern California education demonstrate her commitment to excellence and her compassion for the people she serves.

Upon receiving her B.A. and single subject credential in Physical Education from CSU Long Beach in 1984, Hansen began her career teaching physical education, first at Alvarado Intermediate School and then at her alma mater, Long Beach Wilson High School, where she also coached the high school's swim team.

Hansen credits two people for piquing her interest in physical education: Her junior high physical education teacher, who "made Physical Education fun, not competitive," and her older sister Joan – who won a silver medal in rowing at the 1976 Summer Olympics in Montreal and "inspired me to be great at whatever I did."

After earning her M.A. in Educational Administration and an Administrative Credential from CSU Long Beach in 1989, Hansen served as activities director at Lakewood High School in Long Beach, a site she has particularly fond memories of.

"I met my husband of 25 years, Keith, when we were both working at Lakewood High School – he was an assistant principal and I the activities director," Hansen explained. "He had previously been an activities director. When you put two activities directors together, you are bound to have a good time – we know how to plan a party!"

Lakewood High students would ultimately sing at the couple's wedding, preparing a specialized version of "Be True to Your School."

"I still stay in contact with some of the 'kids' and I am proud to say that many of them went on to public service – a fire captain, band director, athletic director, teachers, principals, and attorneys!"

In 1994, Hansen transitioned to Westminster School District, where over the course of 12 years she served as assistant principal, principal, director of personnel, and assistant superintendent of human resources. From 2006-15, Hansen served as the assistant superintendent of human resources in the ABC Unified School District. In 2015, she began her tenure as the superintendent of the Ocean View School District.

Hansen said she was fortunate to have the influence of highly effective, passionate, and strong women leaders during her administrative career. She especially credits former superintendent Sheri Loewenstein, her supervisor when working in the Westminster School District.

"Sheri demonstrated the power of relationships and communication, modeling how these tenets have the potential to influence one's leadership capacity to leverage positive change for public school systems, especially when it comes to students," Hansen said.

As superintendent, Hansen is committed to supporting innovative school programs that address the diverse needs and interests of the nearly 8,000 students that come through the district's 15 PreK-8 schools. Current district program offerings include Lake View Elementary School's Science, Technology, Engineering, Arts, and Math (STEAM) Academy; Westmont Elementary School's Visual and Performing Arts (VAPA) Academy; Golden View Elementary School's Environmental Science School (featuring a 2.5 acre farm); Circle View Elementary School's National Blue Ribbon GATE School; and Harbour View Elementary School's newly implemented Dual Language Immersion Program.

"When I visit a school and witness students engaged in learning that captures their interest and makes them love coming to school, I am reminded why I do this work," Hansen said.

Hansen earned her Ed.D. in Educational Administration from UCI at a time when high-stakes testing was dominating the conversation in education.

"When I reflect on my experience in the Ed.D. program at UCI, I am most grateful for the work around equity and social justice for all students," Hansen said. "I was guided in my dissertation work to examine closely how students of color and low socioeconomic status can easily be left behind. This led me to care even more deeply about the importance of ensuring that educators understand the significance of teaching for social justice and for understanding how to address equity for our marginalized populations."

Today, Hansen, true to her training, remains physically active. She and her husband enjoy beach and mountain vacations, Green Bay Packers football, and unwinding on the Alamitos Bay in their electric boat. She has also recently taken to swimming in the Bay.

"I often run into some of my former swimmers in the Bay. It is nice to know that swimming continues to be a lifelong sport for me and for them too!"

Since 1971, the UCI Alumni Association and its board of directors has presented Lauds & Laurels, the association's highest honor, at a formal ceremony each spring. Lauds & Laurels is the university's oldest awards ceremony, a tradition that has recognized more than 800 members of the UCI community for their service to the university, the community, or their profession. The 2020 ceremony was postponed indefinitely due to the COVID-19 pandemic.

In 2019, Circle View Elementary School, part of the Ocean View School District, was one of 362 schools nationwide to earn a National Blue Ribbon Schools award. From left: Dr. Carol Hansen; Circle View Principal Jessica Haag; Circle View Eagle Mascot; Ocean View School District Board Member John Briscoe; and California State Assemblyman Tyler Diep.

Shelby Anderson (MAT + Single Subject Credential '19)
Teacher, Laguna Beach High School

Immediately upon graduating from the School of Education's MAT program, Anderson accepted a teaching position at Laguna Beach High School, where she instructs ninth- and eleventh-graders in Global Studies and U.S. History, respectively. As a first-year teacher during the COVID-19 pandemic, Anderson was faced with the daunting challenge of moving her classes to a remote teaching model – a challenge she felt she was uniquely prepared to not only overcome, but to excel at, due to the support and training she received in the MAT program. Anderson viewed the spring as a time for deep reflection on what she valued most as a teacher, what represents true learning, and how she could provide equitable access to success for all her students. Anderson was also nominated for the position of tech lead at Laguna Beach High School and will support school staff through their transition to the Canvas Learning Management System.

Kimberly Ochoa Alvarez (B.A. '17)
Former Head Start Teacher

After graduating from UCI, Alvarez set a goal to give back to her community of south Los Angeles, where she experienced, first-hand, socioeconomic disparity. She began working as a Head Start preschool teacher in a high-risk, high-need area, which she found very challenging, but fulfilling. After two years as a Head Start teacher, Alvarez decided to further her education – last year she enrolled in the single subject credential program at California State University, Long Beach. While she finds the program challenging, Alvarez acknowledges that she is "learning how to be a better teacher and how to provide students with an education they deserve." Upon completion of the credential program, she plans to return to south Los Angeles as a high school biology teacher.

Laura Gomez (Multiple Subject Teaching Credential '95)
Teacher, Martin Elementary School

In May, Dr. Al Mijares, Orange County Superintendent of Schools, and others surprised Gomez via Zoom to name her one of six 2021 Orange County Teachers of the Year. Since graduating from UCI, Gomez has forged a career with the Santa Ana Unified School District, filling the roles of bilingual resource teacher and teacher on special assignment. As an immigrant and first-generation college graduate, Gomez seeks to build community connections by planning family nights that focus on literacy, math, and science. Currently a third-grade teacher at Martin Elementary School, Gomez utilizes her collaborative and bilingual skills to support students, parents, and staff members by developing academic faculty nights. Gomez's students also take pride in honoring their parents, caretakers, and guardians through her annual "Mother's Day Tea" and "Donuts with Dad" events. Gomez is also a voting member of the Assistance League of Newport Mesa, which provides support to families in need.

Bradley Kerr (MAT + Single Subject Credential '15)
Teacher, San Clemente High School

Along with serving as the girls' swimming coach, Kerr teaches AP Physics C, AP Environmental Science, Conceptual Physics, IB Physics, and IB Environmental Systems and Societies. Outside of the classroom, Kerr has taken his students on international field studies; notably receiving a grant from the Picerne Family Foundation to lead students on a field expedition to Peru. While there, Kerr and his students spent two weeks in the rainforest studying the impacts of climate change on biodiversity and the lifestyle of the indigenous tribes. Kerr recently received the 2019-20 Exemplary Educator Award from the California Association of IB World Schools.

Daniel Lieu (B.S. Biology/Education, CalTeach '18)
Teacher, Math and Science College Preparatory

Lieu teaches engineering and biomedical science at Math and Science College Preparatory, a Los Angeles charter school. Lieu has spent the past two years encouraging his classrooms of future scientists, engineers, doctors, and STEM professionals to pursue their chosen occupations regardless of socioeconomic status, race, or ethnicity. During his nascent teaching career, Lieu learned that one of the most important things he can teach his students is that they have value and talents that will enhance the STEM community. Lieu continues to learn and pursue his higher education goals – he earned an M.S. in Educational Technology from California State University, Fullerton in 2019, and is pursuing a Ph.D. in Instructional Design & Technology from Liberty University.
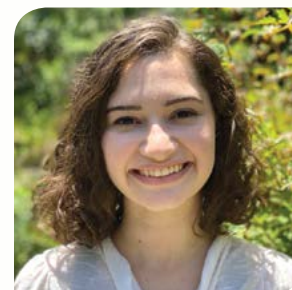
Leanne Lupone (B.S., Chemistry, CalTeach '18)
Teacher, Mater Dei High School

After graduating from UCI's CalTeach program in 2018, Lupone began her career as an educator in Santa Ana and Tustin schools before embarking on a Fulbright Fellowship to Uruguay. There, she designed and taught university classes at the *Universidad Tecnologíca del Uruguay* and traveled to rural schools with the program *Inglés sin Límites*. Upon returning to the United States, Lupone taught in Irvine schools and was challenged with equitably adapting the curriculum online during the COVID-19 pandemic. This fall, Lupone will begin teaching at Mater Dei High School and plans to further her professional growth through the Project-Based Learning certificate program at the University of Pennsylvania's Graduate School of Education.

Tutrang Nguyen (Ph.D. '18)
Researcher, Mathematica Policy Research

After two years as an Institute of Education Sciences Postdoctoral Fellow at the University of Virginia, Nguyen began a new role in August as a researcher at Mathematica Policy Research in Oakland. She continues to work with the University of Virginia and will transition into a research assistant professor with the university's Center for Advanced Study of Teaching and Learning (CASTL), which is affiliated with the U.S. Department of Human Services. Nguyen's research focuses on identifying and accurately measuring essential features of quality in early care and education classrooms, and explores how they can be brought to scale successfully. She integrates developmental theory with the tools of policy analysis to conduct causally motivated and descriptive studies with the goal of informing policy and practice to better serve children and their families. Nguyen's work has been published in the *Journal of Research on Educational Effectiveness, Developmental Psychology, Social Development*, and *Early Childhood Research Quarterly*.

Shannon K. Olsen (MAT + Multiple Subject Credential '06)
*Founder, Life Between Summers*

Three years ago, Olsen created Life Between Summers, which shares resources and teaching ideas for elementary educators. In the spring, Olsen published a children's picture book titled *Our Class is a Family*, which earned the distinction of being a No. 1 New Release on Amazon. Olsen wrote the book with the intention of it being read aloud in classroom settings, to send the message that a class is a special kind of family. Her hope is that the book will strengthen both the teacher-student and student-student bonds and enable more children to feel a sense of belonging at school. Olsen strongly believes that feeling accepted and loved in a school community can make a very positive difference.

Erik Ruzek (Ph.D. '12)
Senior Research Scientist, Northwest Evaluation Association (NWEA)

Upon receiving his doctorate from the School of Education, Ruzek joined the University of Virginia Curry School of Education and Human Development as an assistant research professor. After eight years of studying the impacts of classroom environments on students' motivation, engagement, and academic achievement at the middle and high school levels, Ruzek this year began as a senior research scientist at the Northwest Evaluation Association. As part of the NWEA's Collaborative for Student Growth, which Ruzek describes as a mini think-tank within the NWEA, Ruzek is working with the MAP Growth Assessment, a benchmark assessment tool across the U.S. Additionally, Ruzek will utilize NWEA's vertically aligned longitudinal data to address questions related to achievement and the COVID-19 crisis. This summer, he co-authored a NWEA study, *Projecting the potential impacts of COVID-19 school closures on academic achievement*, which focused on potential learning loss during COVID-19.
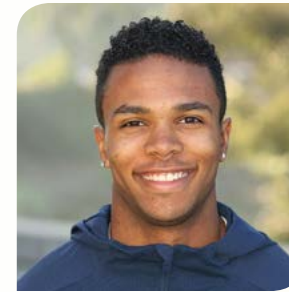
Evan Singletary (B.A. '20)

Singletary, who also starred as a sprinter on the UCI Track & Field team, plans to pursue a career in which he can combine his passion for sports and love of teaching – as well as continue his favorite hobby: refereeing basketball. In the NBA, Singletary explained, officials are routinely yelled at by players, coaches, and fans. Singletary believes that he can be an example to his peers and a mentor to others by demonstrating how to avoid criticism. Singletary previously worked for two professional football teams – the Los Angeles Rams and Los Angeles Chargers.

Megan Smith (MAT + Multiple Subject Teaching Credential '06)
Teacher, Corona-Norco Unified School District

In October 2019, Smith received the highest award given by the U.S. Government to K-12 math and science teachers – the Presidential Award for Excellence in Mathematics and Science Teaching (PAEMST). Smith was selected for the award based on her distinction in the classroom and dedication to improving math education. Smith teaches fifth grade at Lincoln Fundamental Elementary School, a magnet school in the Corona-Norco Unified School District. The district's Math Team nominated Smith for the shifts she has demonstrated in teaching mathematics, her commitment to excellent and rigorous instructional practices, and her role in supporting other teachers in the district. Smith was invited to Washington, D.C. to participate in a weeklong series of events, and was honored at the White House. Smith said she is exceptionally passionate about making math accessible and anxiety-free for all students.
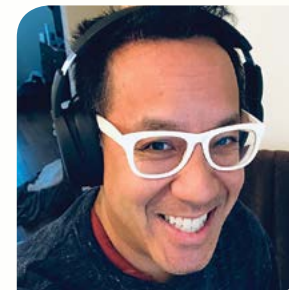
David Szeto (MAT + Multiple Subject Teaching Credential '15)
Teacher, Community Roots Academy

This academic year, second-grade teacher David Szeto was determined to use more singing and musical instruments to further his teaching methods and student engagement. When his classroom was moved to a distance learning format amid the COVID-19 pandemic, he recognized that his music integration goals were more vital than ever. Using guitar, ukulele, and vocals, Szeto began leading his students in a weekly song, which proved so popular with his class that they expanded to a daily song and music format. Szeto said his classroom's music component was a hit and made learning fun, even inspiring many of his students to produce their own videos showcasing ukulele jams and singing.

▶ To submit alumni updates for future publications, please email **education-communications@uci.edu**

A Message from Sandi Jackson

Last fall, we launched the UCI School of Education Brilliant Future campaign with a powerful mission to further research, evaluate current educational practices and help redefine 21st century education. While the unprecedented events of 2020 have brought great pain and struggle, they have also led to movements across the nation that facilitate addressing systemic issues of educational inequity and related racial injustices.

Since the early stages of the global pandemic, School of Education faculty, researchers and doctoral students have worked side-by-side with local public schools to collect data, provide guidance and counsel on effective distance learning, advise superintendents on how to reopen schools and produce educational research that affects public policy and creates a new path forward.

The power of our community, partnered with UCI's mission and resources, is one of our greatest strengths. I am grateful to our valued partners across multiple sectors – public, private, nonprofit and academic – working together to improve educational outcomes for all youth and families. Education has always been one of the most powerful levers for social change and there has never been a more important time to join in the work of the School of Education.

I invite you to join me in supporting the School of Education with its unparalleled opportunity to effect change in Orange County and beyond and move forward with well-chosen solutions.

Be well and safe,

Sandi Jackson, ex-officio Trustee, UCI Foundation
Chair, School of Education Campaign Advisors
Co-Founder, Samueli Academy

Support System

Dr. Keith Curry (Ed.D. '11), president and CEO of Compton College and School of Education donor, makes it a priority to build partnerships and support staff and students – skills he learned while at UCI.

Dr. Keith Curry speaks at the 2015 UCI Black Leadership Advancement Coalition Gala. Curry received the Distinguished Alumnus Award and served as the event's keynote speaker.

Out of the hundreds of experiences, relationships, classes, and moments that Dr. Keith Curry (Ed.D. '11) had as a doctoral student at the UCI School of Education, one memory stands above all else.

One day, after a long day of work, Curry visited the office of his dissertation committee chair, the late Dr. Michael Martinez. There, Curry sat through extensive reviews and explanations of his dissertation draft. Page after page, line after line.

"He could have just handed it back to me, but he wanted me to understand what every edit was all about," Curry said. "You cannot put a dollar amount on that. Now, in my career, I go through every single page and every single detail for my employees."

Curry now serves as president and CEO of Compton College and Compton Community College District, a position he has held since graduating from UCI. He describes the role as a "jack-of-all-trades" – Curry oversees district operations, sets the college's budget and goals, serves as the chief instructional officer, and is committed to promoting student enrollment, success and retention. Under his leadership, three facilities projects are currently under construction – two instructional buildings to be completed in fall and winter 2021, and a student services building to be completed in early 2022.

Curry took to his role of CEO immediately upon graduating from UCI thanks in part to his dissertation, "The De-accreditation of Compton Community College: An Interpretation Through the Kubler-Ross

Grief Construct." Compton Community College was de-accredited in 2005. In 2017, after years of Curry serving as CEO, the college achieved initial accreditation.

The UCI School of Education also imbued in Curry leadership, writing, and research skills.

"UCI gave me that opportunity to learn more about research and understand data and gave me tangible tools, all of which are very helpful for me to this day," Curry said.

After graduating from UCI, Curry established both the Keith Curry Undergraduate and Graduate Awards to honor School of Education students who have demonstrated significant growth in academic achievement and unusual perseverance. More than a dozen students have received a Curry scholarship over the years, including 2020 recipients Miguel Abad (Ph.D. '20), Yailin Cervantes Rios (B.A. '21), and Nestor Tulagan (Ph.D. '20).

Curry sees his contribution as "extra money" for students, which can relieve stress and in turn improve performance in the classroom and in the community.

"Money can stress students out, and I remember as a student asking how I was going to pay for certain things, or how I was going to eat," Curry said. "The amount I award is meant to keep students working and engaged in the campus, while helping relieve their stress."

For Curry, supporting students dates back to 1996, when Curry himself was an undergraduate at UC Santa Cruz. At age 19, Curry created a program called "Destination Higher Education," which invites admitted African American students to the campus so they could learn more about UC Santa Cruz and meet other students.

It was Curry's first experience working for a college and engaging in outreach, a gest that quickly evolved into his calling.

"I felt connected to the students – I was in the same position as them in high school but enrolled at UC

Santa Cruz without ever visiting the campus," Curry said. "Being able to create a program for admitted African American students to come and see the campus, get to know the Black community, and make an informed decision about their college attendance was very rewarding."

Nearly 25 years later, the program still exists. It is student-run and has expanded from a daylong event to an entire weekend of activities. Curry appreciates that the program has evolved.

"When it comes to all programs and partnerships – I have ideas about what needs to be done, but I want to create programs where people can expand it with their own twist," Curry said. "I want to give my employees the flexibility to model those ideas and change them to fit their needs."

Curry furthered his understanding and appreciation of building partnerships when working with UCI's Early Academic Outreach Program (EAOP), part of the School of Education's Center for Educational Partnerships. Curry also funds scholarships for EAOP students.

While working for the EAOP, Curry learned from the late Dr. Juan Francisco-Lara, assistant vice chancellor for enrollment services, whom Curry called a "partnership guru."

"He was sincere and genuine when he talked to people, and I try to model myself after that – not to be exactly like him per se, but in how you can connect with people," Curry said. "That's how I learned about building partnerships, and how they are all about relationships."

Curry said that UCI and the School of Education "set me up for the rest of my life," and that as a result, he is forever grateful to the university, school, and above all else, the faculty and staff.

"I am invested in the school because of the people, and it's why I'll never stop giving back," Curry said. "I don't know how else to thank someone for what they did for me – I can say thank you over and over again, but by paying it forward, that for me is more rewarding."

Forging a Path

Through a Johnson & Johnson Bridge to Employment grant, the School of Education's Center for Educational Partnerships is working to improve workforce development and career pathways for underserved youth.

Each year, Johnson & Johnson hosts the Alliance Building & Training Session (ABTS) conference, where students and BTE leaders from around the world meet to discuss best practices and new strategies for continuous program improvement. Here, in 2018, Ashley Cheri (left), program director for UCI's Early Academic Outreach Program, stands in front of the 25 de Abril Bridge outside of Lisbon, Portugal. With her are Elizabeth Cortez and Anthony Camacho, participants in the BTE program and then-students at Santa Ana High School. Cortez is currently a sophomore at UCI, and Camacho a sophomore at UCLA. It was the first time that both Camacho and Cortez traveled outside of Santa Ana, let alone the country.

In June, the School of Education's Center for Educational Partnerships (CFEP) received a Bridge to Employment (BTE) grant from Johnson & Johnson.

For the next three years, the CFEP will work with 60 ninth-grade students at Valley High School in the Santa Ana Unified School District. Students must be participants in either the Health or Engineering Academy that Valley High hosts via the High School Inc. Academies Foundation (HSI).

The CFEP, Johnson & Johnson, Valley High School, and HSI will provide a variety of program activities in the following areas: Academic Enrichment; Career

Exploration and Readiness; Higher Education Exploration and Preparation; and Community Engagement and Leadership.

"The BTE Program is a perfect example of the life-changing opportunities created for young people by bringing together K-12, the university, and our corporate partners," said Stephanie Reyes-Tuccio, assistant vice chancellor, educational partnerships at UCI. "Both Valley High School and Johnson & Johnson have been longtime valued partners of CFEP and this program promises to build a bridge for promising students from Santa Ana to transition to the university and then pursue meaningful careers in STEM and healthcare."

"This program takes the best of all approaches in supporting a student to be college and career ready," said Ashley Cheri, program director for CFEP's Early Academic Outreach Program (EAOP). "Through this collaboration, we are able to provide students early exposure to engineering- or health-related career options they may not have otherwise considered and to connect them with J & J coaches to help them throughout their high school journey."

Valley High School is home to more than 2,000 students, of which 92 percent are identified as socioeconomically disadvantaged and only 34 percent of students are college and career ready.

"The Bridge to Employment Program will provide students with academic support and real-life experiences in engineering and health occupations. The connections these students make with other students in the program and with industry personnel will last through high school and beyond," said Katherine Berger, principal of Valley High School. "I want to thank Johnson & Johnson and UCI for bringing this program to Valley High School, and I am looking forward to seeing our BTE students flourish within the structures and support of our Health and Engineering Academies."

One of the goals of the BTE program is for all its graduates to apply to at least one post-secondary institution and complete a financial aid application.

"**The BTE Program is a perfect example of the life-changing opportunities created for young people by bringing together K-12, the university, and our corporate partners.**"

Activities include, but are not limited to: transcript and interest/strengths assessment and analysis, hosting career readiness and foundational skills workshops, standardized test workshops, field trips and tours of college campuses, and community engagement events.

"Through the unique collaboration, students will be provided a three-year learning experience with wrap-around support that integrates academics, skilled training, and work experience," said Mary Tran, executive director of High School Inc. "I believe that every student is capable of greatness – and I hope that students that participate in this program not only leave with a sense of achievement but also take with them the confidence to step forward and challenge themselves to meet their fullest potential."

Valley High School Healthcare Academy students practice taking blood pressure.

This is the second BTE program partnership between the CFEP and Johnson & Johnson. From 2016-19, the CFEP and Johnson & Johnson worked with Santa Ana High School. A vast majority of the program's previous participants cited mentoring and support for the college application process as the most effective or meaningful activity. Cheri said that the previous partnership is serving as a model for the BTE program with Valley High School.

"This opportunity to collaborate across institutions and corporations for the betterment of students is a prime example of what educational institutions should be working toward," Cheri said. "To bring a major corporation, university, K-12 school, and community organization together to provide high school students college preparation support, early career exposure, and professional coaching is what makes this program model truly unique, and is what makes a student both college and career ready."

The CFEP and UCI School of Education are taking several steps to improve career readiness. In February, the School of Education, in partnership with ETS, hosted executive leadership from school districts and community colleges, nonprofits, think tanks, and

businesses to discuss modern competencies and future workforce needs. The roundtable discussion sought ways to define and measure the types of modern competencies – such as critical thinking, collaborative problem solving, and interpersonal communication – that are aligned with the goals of Orange County education providers and the needs of local employers.

"As a world-class School of Education in the heart of Orange County – the home to leading industry and a diverse citizenry of more than three million people – it is important that we are continuously exploring how to prepare students to be successful in the 21st century workplace," said Richard Arum, dean and professor, UCI School of Education. "This partnership will not only provide participating students with irreplaceable skills, relationships, and experiences, but will also help serve as a model for how to best support our county's K-12 students for their future needs."

The CFEP creates collaborations and hosts programs, including the EAOP, that support preparation for and success in higher education. Established in 1976 by the University of California to increase the number of students from underserved communities who are given the opportunity to achieve a college education, the EAOP helps students prepare for college by ensuring they meet all UC and CSU admissions requirements. Through EAOP services, students are provided the support necessary to plan for their academics, apply to college, complete financial aid applications, and successfully transition to college.

In 1992, Johnson & Johnson launched its Bridge to Employment (BTE) initiative to inspire young people from disadvantaged communities to stay in school, excel academically, and elevate their career aspirations. BTE helps young people build solid futures and strives to increase the number of students who enroll in higher education, and increase the number of students interested in pursuing careers in the Science, Technology, Engineering, Mathematics, Manufacturing, Design (STEM²D) or healthcare sectors.

Valley High School Healthcare Academy students practice learning how to lay out instruments for minor surgeries: incision and drainage tray, suture and removal tray, and laceration and repair tray.

Jean Leslie

A Legacy of Transforming Lives through Planned Giving

Longtime UCI friend, Jean Leslie, was committed to closing the education equity gap and unlocking potential for youth in our community. Since establishing her endowment in 2012, more than 90 students from Santa Ana high schools and community colleges have received scholarships to attend UCI and achieve their dream of completing a college degree.

Jean passed away in 2011 and her endowment was created through her estate with a bequest of $820,000 to the Center for Educational Partnerships. Since it was established, the Jean Leslie Endowment has grown to more than $1 million and provided more than $300,000 in scholarships and academic support programs that have inspired hundreds of underserved youth.

While Jean is no longer with us, her legacy endures through her forethought and planning exemplified in the endowment she created. To learn more about how you can create a similar enduring legacy, contact Jennifer Stameson, Executive Director of Development, School of Education, jastames@uci.edu.

UCI Planned Giving

www.plannedgiving.uci.edu

In Memory of Bruce Baron

School of Education lecturer, K-12 teacher, educational administrator, mentor to countless students and colleagues, and a friend – Bruce Baron was an inspiration to youth and adults alike.

In February, longtime School of Education lecturer and Orange County administrator Bruce Baron passed away. Colleagues and former students remembered Baron for his ability to support students, champion human and civil rights, and spread a contagious enthusiasm for both history and teaching.

"Bruce Baron was an integral fixture at both Southern California schools and the School of Education's teacher preparation program for decades," said Richard Arum, dean and professor, UCI School of Education. "He proved year after year the importance of teacher educators; the tutelage, mentorship, and guidance he gave aspiring teachers at UCI is an inspiration to us all."

Baron's commitment to education was deep and far-reaching. After attending UCLA and the University of Nairobi in Kenya, Baron completed his B.A. in Comparative Culture at UCI in 1974, and earned both Single Subject and Multiple Subject Teaching Credentials in 1975. Baron began his educational career working in low socioeconomic status schools at both the elementary and secondary level as a member of the National Teacher Corps program. He went on to teach at the elementary, middle, and high school levels before serving as a school principal at both the elementary and middle school level.

"As a methods instructor, Bruce inspired a generation of social science teachers to promote historical thinking in classrooms in middle and high schools throughout California," said Virginia Panish, director of teacher education at UCI. "In fact, the only thing that surpassed Bruce's passion for teaching the importance of historical thinking was the care and support he extended to social science candidates and alumni."

As a principal, Baron led South Lake Middle School in the Irvine Unified School District to No. 1 in the *OC Register's* ranking of all middle schools in Orange County. South Lake was the only school to be ranked in the top three for the first four years the paper compiled such rankings, based on a review of state-mandated educational data.

"I first met Bruce in the late 1970s when he was an elementary school principal in Irvine, and I was supervising student teachers in the Office of Teacher Education at UCI," said Mary Roosevelt, former coordinator of UCI's multiple subject teacher credential program. "I spent many hours in his office

discussing the best ways to give the UCI student teachers a realistic and enthusiastic teacher training experience in the classroom. He was so supportive and spent valuable time with every student teacher that I placed with him."

"I was fortunate to work with Bruce at Irvine High School where he took the lead integrating metacognitive strategies into the curriculum in both the Social Science Department and English Departments," said Jerome Judd, UCI Single Subject Supervisor for English. "I am also fortunate to work with his wife Christine at the UCI Writing Project. Working with both of them made me a better instructor, and our learning community is richer and fuller because of their contributions, compassion, and knowledge they shared with others."

In the 1980s and 90s, Baron was actively engaged in multicultural education and acted as a consultant to address and ameliorate inter-ethnic tensions that existed at secondary schools throughout Southern California. His work was recognized by the Orange County Human Relations Commission with a Certificate of Commendation acknowledging his "contributions and efforts to cultivate genuine understanding and appreciation for the ideals of equality, human rights and justice."

School of Education Professor Emerita Carol Booth Olson describes meeting Baron more than 30 years ago: Baron had recently founded the Ethnic Advisory Forum at Irvine High School to help students confront racism. Working with students, he produced a series of short videos about the discrimination that students of diverse backgrounds might encounter on campus, which were then shown to all the history classes.

"Bruce brought that same commitment to equity and inclusion into his Methods classes at UCI," Olson said. "He encouraged his students to interrogate the history textbooks that schools were adopting to determine what was presented and what was omitted, whose voices were privileged and whose were silenced. He was a role model for all of us and he will be sorely missed."

"My credential training was 15 years ago, but memories of class time with Bruce are still fresh in my mind," said Melissa Dahlin, a fourth-year doctoral student at the School of Education. "His enthusiasm, guidance, and support made me excited and prepared to be an educator. He taught me how to use history as a tool to empower students through critical thinking and questioning of dominant narratives. What I learned from him committed me to a life in which I continually seek to be a more informed and more vocal citizen for human rights and equity."

In 1983, Baron co-authored the book, *What Did You Learn In School Today: A Comprehensive Guide to Getting the Best Possible Education*, which was published by Warner Books and subsequently endorsed by groups including the College Board, National PTA, and the National Institute for Education. The book was later adopted by the Consumers' Union and published by *Consumer Reports* magazine as their parent guide to Education in the United States.

In 2019, the California Council for the Social Studies named Baron its recipient of the 2020 Hilda Taba Award, given for "exemplary skills, dedication, and commitment to high-quality social studies education." The award is the Council's highest honor.

In the spring, a group of colleagues and family members established a scholarship in Baron's name: The Bruce Baron Memorial Scholarship Fund. The scholarship will be awarded to a promising social science single subject candidate in the UCI Master of Arts in Teaching program. Donations to fund the scholarship can be made at the web page listed below.

To support the Bruce Baron Memorial Scholarship Fund, please visit: http://give.uci.edu/BruceBaronMemorialFund and select the "Undergraduate Scholarships and Graduate Fellowships" option.

In Memory of Carol McDonald Connor

Chancellor's professor remembered for her brilliance and selfless devotion to students, colleagues, and children.

Dr. Carol McDonald Connor was a leading academic, a guiding light for disadvantaged children, and a friend and mentor to innumerable students, postdoctoral scholars, and faculty. She passed away peacefully in May after a valiant battle with ovarian cancer.

A chancellor's professor at UCI since 2016, Connor devoted her life to studying language and literacy development. At the UCI School of Education, Connor led the Center for Creating Opportunities through Education (CCOE), a university-wide center focused on creating economic mobility for disadvantaged children. Over decades of work, she fought for supporting the needs of others – teaching, mentoring, conducting research, creating interventions, and securing a U.S. patent that generated individualized plans for children learning to read.

"To say Carol made an indelible impact would be an understatement – she passionately mentored students and early career professors and helped millions of children with her unique educational programs," said Richard Arum, dean and professor, UCI School of Education.

Connor's research examined the links between children's language, cognitive, social-emotional, and literacy and mathematics development from preschool through the elementary grades. Most recently, her research interests focused on children's learning in the classroom, with a focus on reading comprehension and mathematics, children living in poverty, and how technology might improve the instruction they receive.

Over the course of her career, Connor developed online assessment tools, which she coupled with specific instructional modules. Utilizing these, teachers were able to assess each of their students' current learning needs, plan instruction using a dynamic lesson planner, deliver the appropriate instructional modules, and monitor the student's progress.

"Carol was one of the most brilliant and innovative scholars I have ever known," said Professor Mark Warschauer. "She was able to combine her deep knowledge of language, literacy, and educational psychology with creative new approaches to digital learning and data science to develop highly effective and personalized approaches to reading instruction."

"Carol was a phenomenal researcher like no other," said Young-Suk Kim, professor and senior associate dean. "Carol turned a long-held wishful idea in the field of reading into a reality – a systematic approach to differentiated instruction."

Prior to her career in academia, Connor worked as a speech and language pathologist. In 1992 she began

work at the Cochlear Implant Center at the University of Michigan. She earned a Ph.D. in Language, Literacy & Culture, Special Education from the University of Michigan, and began her professorial career at Florida State University. Immediately prior to joining UCI, Connor was a professor of Psychology and a Senior Learning Scientist at the Learning Sciences Institute at Arizona State University.

"Despite the fact that she was a real star as a scholar, she was always ready to roll up her sleeves and do her share to contribute to the school and was always willing to take a colleague under her wing," said Professor Emerita Carol Booth Olson. "I've enjoyed my collegial relationship with Carol but I will miss her as a personal friend even more."

Connor served as principal investigator for the Individualizing Student Instruction (iSi) Lab. Funded by the U.S. Department of Education, Institute of Education Sciences and the National Institutes of Health, the iSi Lab applies rigorous research to design, develop, and evaluate literacy interventions that are individualized based on students' learning needs using both classroom instruction and technology.

"Carol had such an appetite for research," said Deborah Lowe Vandell, chancellor's professor emerita and founding dean of the UCI School of Education. "All of her projects had qualities in common – they were audaciously bold, methodologically rigorous, and highly innovative."

"Carol was doing some of the most innovative research on classroom instruction in the world," said Distinguished Professor Jacquelynne Eccles. "Her approach to using informatics to help teachers identify exactly which skills each child needed to perfect in order to master what they were learning was exactly what the field of instruction needed."

Over the course of her career, Connor readily collaborated with colleagues and served as a mentor to many early-career professors and doctoral students, including several at the UCI School of Education.

"Carol was generous with her time and had great insights about work and life," said Elizabeth Peña,

professor and associate dean of faculty development and diversity. "She was a fabulous mentor, leader, and innovator in the field of reading research, but what is striking about her is how committed she was to the people around her."

"I used to jokingly refer to Carol and her husband as 'Auntie Carol' and 'Uncle Jay,'" said Assistant Professor Brandy Gatlin-Nash. "They welcomed me and my family into their home with open arms. I loved the way Carol's eyes would light up when she talked about her own family, especially her grandchildren."

"I am forever grateful to have had the opportunity to know Carol as a friend and mentor – she is one of the most brilliant, compassionate, and dedicated people I have ever known," said Assistant Professor Katherine Rhodes.

"Carol was a mentor unlike any other – she was unbelievably kind, generous, and supportive of her students and anybody that wished to learn from her," said Stephanie Day, who worked with Connor for 15 years, first as a research assistant, then doctoral student, postdoctoral scholar, and served as her project director for the past eight years.

In 2016, Connor was named a fellow of the American Psychological Association. A year prior, she was named a fellow of the American Educational Research Association. In 2007, she received the Richard C. Snow Early Career Award from the American Psychological Association.

Connor also received the 2006 President's Early Career Awards for Scientists and Engineers (PRECASE), given by the U.S. Department of Education to "the most promising researchers in the nation within their fields."

Connor is survived by her mother, Ann-Eve McDonald, her husband, Joseph (Jay) Connor, along with their children, Jessica and Bill Hudak, Kerianne and Nick Lentz, and Patrick and Sarika Connor, and their grandchildren, Josephine, Lillian, Jacob, and Wyatt.

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