Demonstrating that persistence, collaboration, and unwavering vision do pay off, a consortium of faculty from CU-Boulder’s School of Education and science and mathematics departments recently earned a $2.4 million grant designed to address a critical need in Colorado—to increase the number and quality of mathematics and science teachers.

Directed by Drs. Valerie Otero in the School of Education and Michael Klymkowsky in the Department of Molecular, Cellular, and Developmental Biology, the new CUTeach program will draw on the innovative work they and others have done in the Science, Technology, Engineering, and Mathematics (STEM) Colorado Learning Assistant program. For five years the STEM project has combined efforts to reform undergraduate mathematics and science courses and improve K-12 teacher recruitment and quality. And although the STEM program is accomplishing both, this grant will allow the university to take teacher preparation in math and science to the next level.

“We’re recruiting the best students into teaching through our learning assistant program,” Otero said. “This will help us provide them with the best experience possible.”

Components of the revamped undergraduate program will include:
- early, intensive teaching experiences in local classrooms
- a strong content focus
- master teachers from the public schools working with CU faculty and teacher candidates
- a four-year degree plus licensure plan
- strong collaborations between the College of Arts and Sciences and the School of Education

Awarded by the National Math and Science Initiative (NMSI), a non-profit seeking to assist the United States in maintaining its position as a global leader in technological innovation, the five-year grant is part of the UTeach Institute. The institute seeks to replicate a successful undergraduate program at the University of Texas at Austin and will provide support to the emerging CUTeach project.

All of the mathematics and science education courses (including introductory and general methods courses) will be focused on the content of math and science. Otero sees this as an improvement. “For example, in adolescent psychology,” she said, “students will be learning how adolescents develop understandings of functions or gravity or molecular models. Right now in general methods, students interpret information for their own area. Everything will be very specific to math and science.”

The grant brings big professional development benefits to the School of Education since it funds co-teaching of key courses. For example, Dr. David Webb, a mathematics education professor and co-writer of the grant, will eventually teach courses with Otero, a science educator. “You can imagine how much we will both learn. It’s a vision I’ve always had,” Otero said. Co-director Klymkowsky works with arts and sciences faculty who will also team teach courses with School of Education professors.

Assistant Dean for Teacher Education Jennie Whitcomb has also been instrumental in the project design and implementation. She serves as a liaison between CU, NMSI, and other stakeholders and has mapped existing Colorado Department of Education standards and required course content to the new model. Debbie Hearty, the new director of School-University Partnerships, will coordinate partnerships with local school districts.

By developing two new courses each semester, CUTeach hopes to have the entire new program in place as early as 2010.
Message from the Dean

Since last August, I have had the privilege of serving on the Governor’s P–20 Council. Education was a central issue in Colorado Governor Bill Ritter’s election campaign, and adoption of a “P–20”—preschool to graduate school—scope for education reform is consistent with efforts now underway in many states to ensure better articulation between the various levels of education. In particular, the governor asked that we identify ways to reduce the dropout rate, to provide meaningful and constructive measures of accountability, and to improve the transitions between early childhood and the K-12 system and between high school and post-secondary education.

The P–20 Council is chaired by Lt. Governor Barbara O’Brien, President of Colorado State University at Pueblo Joe Garcia, and business leader Bruce Benson, who just recently resigned from the council to become president of the University of Colorado System. Also serving on the council are two School of Education alums: Richard Garcia, who is the executive director of the Center for Effective Parent Involvement in Public Education and formerly served on the Colorado Commission on Higher Education, and Barbara Medina, who is director of English Language Acquisition for the Colorado Department of Education.

P–20 and P–16 reforms, launched now in nearly every state, call for increasing the rigor of standards to ensure that all students are prepared for college and high-tech workplace demands. Governor Ritter is especially anxious to have us find ways to make demonstrated proficiency be the basis for transition to post-secondary education rather than relying on seat time or accumulated credits.

Experience over the past 30 years warns us that higher standards, without improvements in the quality of educational opportunities, will exacerbate Colorado’s already high dropout rates. (With only 72.1 percent of ninth graders eventually completing high school, Colorado ranks 30th in the nation in high-school graduation rates.) As we work to raise standards and at the same time keep more students in school, I hope policymakers will consider “diploma plus” options. Many young people will be well served if they could stay in school to attain what a traditional diploma now represents. At the same time, content standards and curricula are needed that engage all students in more challenging and complex work.

At the other end of the continuum, school readiness will also be salient as the work of the P–20 Council moves forward. Here again, I hope we recall key lessons from the past. What we learned from school readiness testing in the 1980s was that quasi-IQ tests were keeping out of school those children who most needed to be in school to develop pre-reading skills.

Deciding how these ideas get translated into law and how various initiatives will be funded is a complex (often Byzantine) political process. Many education leaders have been pleasantly surprised at the openness of the process and at the willingness of the governor and his staff to listen to both philosophical and logistical concerns. I look forward to learning more as the work of the council continues.

Lorrie Shepard, Dean
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Spencer Family Awards Grants to Educators

Unwavering commitment to good teaching and research is a legacy the Spencer family has left through grants given to the School of Education. Dr. Thelma Spencer annually donates a $1,000 gift to a practicing teacher. Inspired by her mother (a prize-winning chef), Spencer knows just how important it is to believe in and support others. “My mother thought I was something important from heaven and there was nothing I couldn’t do,” she said. Named for her mother, the Pearl McPherson Spencer Grant helps deserving teachers to improve their classroom competencies through master’s degree work.

Thelma Spencer’s brother, William E. Spencer, a supervisory program analyst for the Equal Employment Opportunity Commission in Washington, D.C., continued the family tradition of supporting new generations of educators. He posthumously awarded an additional $10,000 to the school.

“My brother knew it was something important to me,” Spencer said. “The result was that the university could make a difference in the things I care about.”

Because she herself had earned a doctorate from the school in 1972 and had gone on to serve as executive associate for school and college relations at the Educational Testing Service in Princeton, New Jersey, Spencer chose to earmark the funds for educational research.

“I thought the money should go to something substantial and make more of an impact,” she commented. The grant will start funding a doctoral student’s research project next fall.

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Summit Challenges School Inequities

Noted author Jonathan Kozol and Education Commissioner Dwight Jones inspire participants

How should educators tackle the achievement gaps that persist in Colorado schools? How can teachers, administrators, and university faculty better address the needs of all students?

Over 200 teachers, administrators, and university faculty gathered at CU to discuss these and other equity-related issues at the fourth annual Teachers of Color and Allies Summit. The theme, Becoming the Change We Want: Challenging Inequality in Our Schools, provided a focus for keynote addresses, workshops, and district meetings.

To kick off the event, well-known author and activist Dr. Jonathan Kozol challenged the status quo in the era of No Child Left Behind and championed passionate teachers. Drawing on his own experience teaching poor African American children in Boston in the 1960s as well as observations and interviews gathered for his newest book, Letters to a Young Teacher, Kozol emphasized the importance of the teacher’s role in addressing school inequities.

“I can’t think of a more important issue in education now than the role of teachers of color in our classrooms,” Kozol said. Noting that less than 5 percent of all teacher candidates are African American or Latino and that the majority of children of color will have white teachers, he called for a “dynamic dialogue” between white teachers and teachers of color to serve children’s needs.

Kozol inspired participants with his stories of Francesca (the subject of his new book), a first-grade teacher working in an all-black school who refused to do drills and who filled the classroom with her “contagious sense of jubilation” and lessons that connected with kids. Kozol noted that Francesca learned from experienced African American teachers and “refused to treat students as a different species.”

Kozol also called for increased preschool funding. “How can we hold back a 5- or 6-year old?” he asked. “How can we hold a 5- or 6-year old accountable when our own government hasn’t been accountable for preschools?”

Dwight Jones, commissioner of the Colorado Department of Education, had his own stories to tell in the afternoon keynote speech. Personal experiences with elementary, high-school, and college teachers in Kansas who demanded quality work and saw his potential shaped Jones’ core belief: teachers must have high expectations for all students.

Since his days as a student, Jones has enacted this philosophy in every position he has held. As a new principal in a low-performing Wichita high school, Jones eliminated all remedial courses and hired reading specialists and others to work with struggling students.

As the superintendent of the Fountain-Fort Carson school district, Jones created rigorous graduation standards and reviewed students’ graded papers to ensure that minority students were held to the same high standards as white students. The result? There was no gap in achievement (Hispanics, in fact, became the highest achieving group in the district), and the district’s dropout rate plummeted.

As commissioner of education, Jones remains steadfast in his commitments to equity and is developing a state plan. “We can talk about inequity, but it starts with achievement. There is no better equalizer than achievement.”

Participants also attended interactive workshops on such topics as fostering student success, building student leadership capacity, diversity and American Indians, the effect of poverty on educational opportunity, and developing school leaders committed to equity.

“People really want to talk and exchange information,” noted conference co-chair Anissa Butler, director of Recruitment and Retention. “We got consistently good feedback—the best of the last four years.”

“I loved the networking,” one participant said. “I would love more time with leaders in this field about how to move up.” Another noted, “I am leaving with more questions than answers (which isn’t a bad thing). I am energized to make a change.”

For some, the opportunity to reflect on their teaching practices reinforced their work. One teacher commented, “My expectations were exceeded, and my philosophy as a teacher was validated.”

The summit joins districts and the university around a common goal. “The summit allows the university and district partners to focus combined energy on issues that we jointly face and deeply feel,” said co-chair Debbie Hearty, director of School-University Partnerships. “The design of the summit takes away traditional roles of professor and student and instead allows us all to be learners and leaders together.”

Co-chair Debbie Hearty
Gift Honors Memory of Dr. Ofelia Miramontes

Doctoral Scholars Program Established

Professor Ofelia Miramontes devoted her life to creating opportunities for people of color. To honor that legacy, her husband Bill Barclay has established a generous scholarship fund in her memory.

The new Miramontes Doctoral Scholars program will support up to three new doctoral fellowships each year. Each scholar will receive three full years of financial support for doctoral studies plus a fourth year of support after successfully defending a dissertation proposal.

According to Dan Liston, associate dean for Graduate Studies and a personal friend of the Barclay-Miramontes family, this level of funding will have a huge impact on doctoral students. “It offers selected candidates a legacy and vision of what has been and can be accomplished, allows them to come into a cohort of doctoral students, and supports them financially so that they can devote their time to study—full time—for four full years. That’s amazing.”

The scholarships target candidates who, like Miramontes, intend to pursue careers focused on educational equity and cultural diversity.

Barclay himself has always shared similar passions. “Without Ofelia, we wouldn’t have her achievement and her exemplary model of how to live an educational life,” Liston commented. “Without Bill, we would not have the gift of the fellowship. Bill came up with the idea of a Miramontes Scholars fellowship, proposed and pursued it. It seems to me the gift is an expression of Ofelia’s legacy and a testimony to the love between Bill and Ofelia.”

As a bilingual education teacher and scholar, Miramontes developed innovative models of dual-immersion language programs for public schools. As a professor in the School of Education, Miramontes taught and mentored a new generation of educators committed to educational equity and cultural diversity.

In her role as the associate vice chancellor of diversity at CU, Miramontes created the CU-Leadership, Excellence, Achievement, and Diversity Alliance (LEAD), an academic excellence program providing scholarships and assistance to college students of color and first-generation college students.

According to Provost Phil DiStefano, “Ofelia never gave up on her quest to diversify the campus. She continually argued for the under-represented faculty member, staff member, and student who have made the university a better place for all of us.”

“Ofelia was a marvelous woman,” Liston added, “an accomplished scholar, a talented teacher, an insightful leader, and always a true fighter.”

Eighteen University of Colorado at Boulder students are now published authors, thanks to a School of Education class where each wrote and edited chapters of a newly released book. The book was published in January by Information Age Publishing, a commercial academic publisher headquartered in Charlotte, North Carolina.

During the summer before the fall 2006 class, Education Policy and the Law, Associate Professor Kevin Welner (pictured below with co-editor Wendy Chi) was approached by the publisher and asked to edit a book series about legal issues in education. He suggested, and the publisher enthusiastically embraced, the idea of turning Welner's graduate-level class into a book-writing experience.

"Before the class was to start, I sent an e-mail to all the students enrolled and asked them if they'd be interested in structuring the class in this way, stressing that it would be different and almost surely require substantially more work than a typical class," Welner said. "The responses I received were very positive so we embarked on the project and learned as we went along."

Titled *Current Issues in Education Policy and the Law*, the book delves into 12 current education issues through a legal lens. Topics include the federal No Child Left Behind law, school finance and adequacy, school choice, equal education opportunities, immigrant education, and the rights of students and teachers.

According to Welner, doctoral students don't generally get a chance to author book chapters—certainly not in commercial, academic publications. Master's degree students have even fewer opportunities. The class consisted of doctoral, master's (including several practicing teachers), and non-degree students from the School of Education, the political science department, and the Division of Continuing Education and Professional Studies, resulting in a "diversity that helped create a valuable book," said Welner.

Student authors fully appreciated the opportunity to co-author a book. "This was the one of the best, if not the best, doctoral classes I have taken," said PhD candidate Susan Krebs. "This project gave me insight into the real world of academia by helping me to develop the skills to do legal research, to develop a logical argument based on that research, and then to extend that argument based on new insights, all while working collaboratively with my colleagues."

The project proved to give other students insights, as well. Sara Anderson, a practicing middle-school science teacher, learned a lot from the book writing experience. "Although it was challenging balancing the work I did for the book project and my classroom responsibilities," she said, "I really enjoyed seeing the connection between education law and policy and my teaching practice.

"The different backgrounds that people brought with them meant that the writers started the process with different levels of expertise about their topics, which strengthened the project," Welner said. "Some of the students embarked on topics that they knew nothing about, while others wrote things about which they were already quite knowledgeable and developed their expertise further." Each chapter had three authors, so student authors both supported and learned from each other.

The book's chapters were peer reviewed by other students in the class, and by the end of the fall 2006 semester the class had produced a polished draft of the book. Welner then arranged for each chapter to be reviewed by external experts, generally professors of education law and policy from universities across the country. The authors received feedback over the winter and spring and then refined their chapters over the summer.

Wendy Chi, a doctoral student in the Educational Foundations, Policy, and Practice program in the School of Education, co-edited the book with Welner and provided invaluable experience. Her own research generally focuses on school choice, specifically the politics of the movement as well as its effects on marginalized populations.

"This book really fits right in with my interests," said Chi, who also holds a law degree from the University of Michigan. "I did a lot of editing and peer reviewing of the chapters, and I thought it was a great experience to learn the process of working on a book project. This experience will help me no matter what I choose to do."

About the Contributors

Jessica Allen is a doctoral student in the Research and Evaluation Methodology program. Her research interests include state educational policy with a focus on school accountability.

Sara Anderson is a master’s degree candidate in curriculum and instruction in secondary science. She has been a middle-school science teacher in the Mapleton Public Schools for five years and has been part of integrating a district-wide small school reform.

Vincent Badolato received his master’s degree in the Educational Foundations, Policy, and Practice program at CU. His primary focus was U.S. education policy and politics, with a particular emphasis on teacher quality policy. He is currently a policy associate in the education program at the National Conference of State Legislatures in Denver, Colorado.

Erik Bondurant is a master’s student in political science. His research focuses on comparative public policy of welfare states, specifically education and health care policy.

Megan Bucholz earned a master’s degree in the Educational Foundations, Policy, and Practice program from CU in 2007. She is currently a freelance Spanish language instructor in Boulder County. She is working to bridge the language divide between English and Spanish speakers in the Boulder community.

Meghan Callahan is a doctoral student in political science. Her research interests include judicial politics, state courts, and institutions.

Brandy Chance is a master’s student in the Educational Foundations, Policy, and Practice program. She is also a high-school social studies teacher in the Denver Public Schools. Chance’s research interests include gender studies in education and educational access for undocumented students.

Wendy Chi received her JD from the University of Michigan in 2003, and is currently a doctoral student in the Educational Foundations, Policy, and Practice program. Her areas of interest are educational policy and law. Specifically, Chi’s current research focuses on school choice.

Carol Drake earned a PhD in American history from CU. Her research interests include Western water policy, history of education, and higher education policy and administration. Drake is an administrator at CU.

Susan Krebs is a doctoral student. Her areas of study include educational leadership and organizational change models, and research and evaluation methodology. Susan’s current research interests include school finance and accountability policies, statistical growth modeling, program evaluation, and collaborative learning environments.

Emily Wexler Love is a doctoral candidate. Her work and research interests focus on immigrant education, immigration and immigrant education policy, adolescent cultural identity development, and border issues.

Heather MacGillivray is a doctoral student. She is also a senior research and policy analyst at the National Center for School Engagement. MacGillivray has conducted research and evaluation with marginalized populations for 15 years.

Michelle Medal is a master’s degree candidate. Her research interests include studying how trauma and relocation affect school experiences, and how policies surrounding mental health support services improve the lives of students.

Sara Rabin received her master’s degree in the Educational Foundations, Policy, and Practice program from CU. Her research interests include equity issues in educational finance and opportunity.

August Ruckdeschel is a doctoral student in Public Policy and American Studies. Most of his research involves democratic reform in the American context (such as campaign finance reform, lobbying reform, and term-limits) and investigation into the formation of American political attitudes and preferences.

Lauren Saenz is a doctoral student in the Educational Foundations, Policy, and Practice program. Her research interests include education policy, philosophy of education, and democratic theory. Saenz’s recent work includes the application of deliberative democratic theory to education policy and media issues in education policy.

Jennifer Sharp Silverstein is a doctoral student in the Research and Evaluation Methodology and Educational Foundations, Policy, and Practice programs. Her research interests include school finance policy and practice, teacher compensation programs, and evaluation strategies and implementation.

Sheri Tappert is a master’s degree candidate in curriculum and instruction. She has a JD degree from the University of Southern California and is a public school teacher in Colorado.

Adam Van Iwaarden is a doctoral student in the Research and Evaluation Methodology program. His research interests include the integration of research into public policy and court decisions. Van Iwaarden is currently working with the Denver Public Schools’ Department of Assessment and Research.

Kevin G. Welner is an associate professor and director of the Education in the Public Interest Center (EPIC), specializing in educational policy, law, and program evaluation. He earned both his JD and PhD from UCLA.

Welner has received the American Educational Research Association’s Early Career Award and Palmer O. Johnson Award.

Holly Yettick is a doctoral student in the Educational Foundations, Policy, and Practice program. Her research interests include tracking and detracking, education policy, and the news media.
Imagine a group of fourth graders trekking around the Sombrero salt marsh on east Arapahoe Avenue in Boulder County. They are collecting data as they study plant and animal adaptation in extreme environments, and they are guided by a unique team of experts: their classroom teacher and a real scientist—a graduate student from the Department of Ecology and Environmental Biology at CU-Boulder.

The following year, as fifth-graders, the students visit the Mountain Research Station above Ward. They collect similar data on plant and animal adaptation, but this time their focus is on extreme alpine environments. Again, their work is monitored and facilitated by a teacher–scientist team.

Back in their classrooms, the students continue to collect real-time scientific information in the two locales using remote sensor networks with the assistance of graduate students in computer science. Meanwhile, middle school students in an after-school science club do similar research projects driven by their own emerging interests.

Next fall these scenarios will become a reality thanks to a five-year, $2.8 million grant from the National Science Foundation (NSF).

But the benefits of the generous grant will extend beyond the elementary and middle-school students and teachers. Part of an NSF initiative designed to change the culture of graduate-level science education, the Graduate Student Fellows in K–12 Education (GK–12) project provides graduate students in the “hard” sciences an opportunity to develop skills as they experience and demonstrate the effects of extreme environments on horn worms’ adaptation.

Boulder Valley teachers from schools serving traditionally underrepresented students will be trained to use and modify existing Foss kits—hands-on science materials and lesson ideas now supplied to elementary teachers in a box. Kidder anticipates that after the training, graduate fellows will help teachers bring the science lessons “out of the box” to expand science content and broaden students’ understanding of scientific principles.

“To have an enthusiastic young expert in the classroom goes a long way to turning kids on to science,” Kidder said. “Graduate students can be particularly good role models because of the ‘cool factor.’ Culturally the kids can relate to young grad students.”

The project also hopes to challenge stereotypes about scientists. “This puts a very human face on the whole science enterprise,” Kidder stated. “You think about the role of stereotypes we have about scientists... so when a woman or a person of color comes in the classroom as a science expert, it really breaks that stereotype and children can relate, particularly girls. A student might think, ‘I really like her, maybe I can be a scientist, too.’”

The GK–12 program also fosters school–university resource sharing and collaboration. As Kidder noted, “We have a world class research university and we can share the physical and human resources. We can connect the science wealth of the university through this program by giving teachers and students access to our science resources. These young scientists will take a lot of cool things with them.”
Jonathan Kozol Attends CU Conference

Jonathan Kozol, a well-known educator, author, and activist who has devoted more than four decades of his life to issues of education and social justice in America, kicked off the fourth annual Teachers of Color and Allies Summit at CU-Boulder last fall. In his morning keynote address, Kozol emphasized the importance of the role of teachers of color in America’s classrooms. He also called for an increase in preschool funding. Later he signed copies of his latest book, *Letters to a Young Teacher*, an inspirational story about a white first-grade teacher who works in an all black school in Boston. (See complete story on page 3.)