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Mega Alumni Reunion!

Friday, May 6
3-6 p.m.
Club Level, Folsom Stadium

In conjunction with the School of Education's
Annual 50th Reunion,
Dean Lorrie Shepard invites School of Education
undergraduate and graduate degree holders who
earned a degree in any of these classes to enjoy a
special alumni event.
Emeritus Faculty are also invited.

MEGA REUNION for these classes:

1961 1966 1971 1976 1981 1986 1991 1996 2001 2006

Reconnect with fellow alumni, Emeritus Faculty, and Chancellor Phil DiStefano
and join in celebrating the retirement of Professors Phil Langer and Marki LeCompte
If you plan to attend, please RSVP to:

Barbara.Darling@colorado.edu or 303-492-9010

MARK YOUR CALENDAR FOR THESE OTHER EVENTS!

June 16 — Women Investing in the School of Education (WISE) Tea
August 18 — The Best Should Teach Awards and Lecture

views
education
SCHOOL OF EDUCATION UNIVERSITY OF COLORADO BOULDER

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We are always eager to hear what our alumni are doing.
Send your news, including updated contact information, to
Barbara.Darling@colorado.edu.

views education

SPRING 2011

UNIVERSITY OF COLORADO BOULDER

SCHOOL OF EDUCATION

AERA Presidency:

A year of accomplishments

by Kris Gutiérrez

My year as American Educational Research Association (AERA) President has provided me a rich opportunity to bring together my interest in producing consequential research and using sound and thoughtful research to influence policy and practice. In my role as president, I have collaborated with AERA executive leadership to leverage the wealth of expertise and knowledge of our members to inform the reauthorization of the Elementary and Secondary Education Act (ESEA).

The ESEA initiative, Linking Research to the Reauthorization of the Elementary and Secondary Education Act, involves the constitution of task forces with three to four stellar scholars who will synthesize what is known about key policy issues (e.g., early childhood learning, college and career readiness, English language learners, and literacy) identified by AERA leadership, members of the Government Relations and Research Advisory Standing Committees, and the membership at large. The task forces also will be charged with writing policy briefs and holding press briefings for policymakers with the goal of using research to inform policymaking decisions, particularly around ESEA.

Another key duty of the AERA president is to make appointments of members to standing committees of the AERA Council, as well as appointments to committees charged with the

review and selection of award recipients. These awards recognize excellence in research and the contribution of scholarly work to the field, to practice, and to the public good. I worked hard to identify a broad range of educational researchers whose record of scholarship and relevant experience helped ensure they would provide strong leadership to the organization.

A highlight of the year was the conceptualization and construction of the program of the annual meeting. The city of New Orleans, the site of the 2011 AERA annual meeting, helped to inspire my theme for this year's convention, "Inciting the Social Imagination: Education Research for the Public Good." This historic American city serves as an appropriate context of development for a new social imagination about the role of education research in a profession and a society in the midst of significant change and transition. Toward that end, I developed over 30 Presidential Sessions featuring among the very best scholars in the field whose work reflects a range of topics, theoretical orientations, and methodological approaches—all oriented toward making meaningful change in policy and practice. Thus, I invited groups of scholars who had served on national panels addressing some of the most pressing educational issues of the day, panels presenting innovative and transformative approaches to educational research and practice, and panels of researchers who brought interdisciplinary perspectives and scholarship to bear on educational problems.

CONTINUED ON PAGE 2

CREATING FUTURES

The University of Colorado has launched the public phase of its *Creating Futures* comprehensive campaign. To aid our readers in understanding the campaign's significance and how you can support the School of Education and the university system, this newsletter includes a four-page special section devoted to *Creating Futures*. It begins on page 5.

To make campaign contributions, please contact Margot Neufeld, Senior Director of Development for the School of Education, Margot.Neufeld@cufund.org or 303-492-2990.

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Kris Gutiérrez

AERA PAST & PRESENT

The School of Education at the University of Colorado Boulder maintains a strong leadership connection to the American Educational Research Association. Five current or former faculty have served as AERA presidents:

2010-2011	Kris D. Gutiérrez
2003-2004	Hilda Borko
2002-2003	Robert Linn
1999-2000	Lorrie A. Shepard
1975-1976	Gene V Glass

EYE ON RESEARCH



Using collaborative design research to increase student access to mathematics—3

Message from the Dean



"I am convinced that the investments we are trying to make are critically important to ensure the quality of public education in Colorado and the nation."

I've been dean of the School of Education for a decade! No one is more surprised than me—since I was absolutely convinced that I never wanted to be an administrator. It has turned out to be very gratifying. I see the School as an extended family and love being the spokesperson for its remarkable students, faculty, and staff. Perhaps most surprising of all is that I am no longer fearful of the dean's responsibility for fundraising, because I am convinced that the investments we are trying to make are critically important to ensure the quality of public education in Colorado and the nation.

At first fundraising was awkward for me, because I reasoned that our alums, mostly teachers, had already "given at the office." You committed to a poorly recompensed profession for altruistic reasons, and then many of you reached into your own pockets when school supplies were inadequate or to help a student in need. How could I ask you to make a financial gift to the School of Education? Nonetheless, many of you have given generously and steadily to support the work of the School, which has been an invaluable lesson for me. What I have tried to do, in turn, is to be as explicit as possible about what your contributions will accomplish. As pointed out by one of our Development Board members, Dr. Ed Steinbrecher, no one wants to make a gift merely to make up for the shortfall in the state budget.

Rather, donors want to know that their gifts—large or small—will support truly ambitious projects that mark the special character of the CU-Boulder School of Education.

I am pleased to announce that CU is launching a \$1.5-billion fundraising campaign, *Creating Futures*, a campaign concentrated on excellence and impact for the University of Colorado. *Creating Futures* is focused on four key pillars:

- Learning and Teaching to Advance Our Future Leaders
- Discovery and Innovation to Advance Our Economic Future
- Community and Culture to Advance Our Global Engagement
- Health and Wellness to Advance Our Quality of Life

In preparation for our part in this campaign, the School of Education has identified priorities that we believe will have the greatest impact. Our CU Teach program recruits talented math and science majors at CU into teaching careers by giving them early, first-hand experience teaching with Full Option Science System (FOSS) kits in K-12 classrooms. The CU Teach program was funded for the first five years by a grant from the National Mathematics and Science

Initiative (NMSI). One of our largest gift requests is for \$1 million to permanently endow CU Teach, which the NMSI has promised to match with an additional \$1 million.

Equally important are smaller, but consequential gifts, such as Adopt-A-Teacher scholarships from \$1,000 to \$6,000 (the cost of tuition for one semester). Adopt-A-Teacher scholarships can be designated for licensure candidates during their student teaching semester or for practicing teachers who are returning for specialized training as a reading specialist or English as a second language endorsement. PhD graduates are invited to think about supporting a doctoral student's travel to American Educational Research Association (AERA) for \$500 or \$1,000 or to create a research assistantship during the dissertation year, \$25,000.

This is also a time to think about longer-term gifts to the School of Education. Educators without spectacular incomes might only be able to be generous as part of a bequest. Because the School has not had a tradition of fundraising, we are not now the beneficiary of bequests promised years ago, but this would be an important tradition to begin and a significant legacy that I hope we can create for the future. ■

Lorrie Shepard, Dean and Distinguished Professor
Lorrie.Shepard@colorado.edu

GUTIÉRREZ CONTINUED FROM PAGE 1

Examples of such Presidential Sessions include:

- Inciting the Social Imagination: Implications of the New U.S. National Educational Technology Plan for Research and Reform
- Design Research: Exploring Transformative Frameworks for Learning and Education
- Ten Years After the National Research Council Report *Scientific Research in Education: Renewed Focus on the Public Good*
- Measuring and Developing Teacher Effectiveness: An Assessment of Research, Policy, and Practice
- Revisiting the NRC Report *How People Learn: A Re-Examination*

Of particular significance, scholars from other disciplines such as sociology, history, and law were invited to organize panels such as:

- Generations of Exclusion: Mexican Americans and Education in the U.S.

- Race in the Postracial Era: New Directions for Critical Race Theory?

It was my hope that bringing scholars from other disciplines to AERA would help to foster new conversations and collaborations about education. CU-Boulder School of Education educational researchers were also featured prominently in the program, as their work continues to contribute in important and forward-thinking ways to how we conceptualize and conduct our scholarly work. Ruben Donato, Ben Kirshner, Kevin Welner, and Margaret Eisenhart are among those whose work was featured.

As I close my year as president, I am pleased that I was able to assist AERA in its policy efforts and to help sustain its leadership role in so many relevant areas of scholarship, policy, and practice. I am also so humbled to be added to the impressive list of scholars from the University of Colorado Boulder such as Dean Lorrie Shepard, Robert Linn, Hilda Borko, and Gene V Glass who were AERA presidents long before me. I am confident that another AERA president will emerge from our ranks. ■

Shelly Belleau at work

School of Education alumna, Shelly Belleau, instructs juniors and seniors at Mapleton Expeditionary School of the Arts, Thornton, Colo., where she teaches chemistry and physics. The students were working with Slinkys to produce transverse waves during this wave lab experiment. Belleau earned a degree in biochemistry from CU-Boulder. It was when she became a Learning Assistant here that she realized she liked teaching and enrolled in the School of Education to complete her education requirements for teacher licensure. Belleau was also a Noyce Fellow. ■





eye on research

by David C. Webb with Fred Peck

Reconceiving algebra

Student-centered approach achieves results at Centaurus High School

David C. Webb, PhD, is an assistant professor of Curriculum and Instruction in the University of Colorado Boulder School of Education. A former middle and high school mathematics and computer science teacher, Webb's research interests are in the preparation of STEM teachers, teachers' design and use of classroom assessment, and the design of professional development activities to develop teacher expertise in classroom assessment. Recent research projects have focused on studies of teacher change in classroom assessment practices and teacher design and use of formative assessment tools.

Webb has conducted several studies of classroom practice and professional development of teachers in K-12 settings, including the evaluation of teacher and student outcomes through the implementation of game design units in the iDREAMS project.

References

- Freudenthal, H. (1991). *Revisiting Mathematics Education: China Lectures*. Dordrecht: Kluwer Academic Publishers.
- Webb, D. C., & Abels, M. (2011). Restrictions in algebra. In P. Drijvers (Ed.) *Secondary algebra education: Revisiting topics and themes and exploring the unknown* (pp. 101-118). Boston, MA: Sense Publishers.
- Webb, D. C., Boswinkel, N., & Dekker, T. (2008). Beneath the Tip of the Iceberg: Using Representations to Support Student Understanding. *Mathematics Teaching in the Middle School*, 14(2), 110-113.
- Webb, D. C., van der Kooij, H., & Geist, M. (in press). Design Research in the Netherlands: Introducing Logarithms using Realistic Mathematics Education. *Journal for Mathematics Education at Teachers College*.

Amidst the national rhetoric over how U.S. students rank internationally in math and science education, local teachers and I have been working together with research faculty from the Freudenthal Institute for Science and Mathematics Education (FiSME) to find ways to engage students and deepen their understanding of mathematics.

In 2005, an international partnership was established between FiSME and CU-Boulder's School of Education. Over the past six years, a series of exploratory research projects have included teachers from elementary through community college in rethinking how they use mathematics representations to help students make sense of mathematics. The goal in each of these studies was to understand how mathematically generative problem contexts and visual models like the double number line, area model, and balance are used by students to make sense of proportions, distributive property, and equations.

In one of the early studies, Monica Geist, mathematics faculty from Front Range Community College, field-tested a two-week unit for exponential growth and logarithms in a "College Algebra" class (Webb, van der Kooij, & Geist, in press). Since most students encounter logarithms as a blur of rules, Geist was curious if there was any way logarithms could be taught in a way that was meaningful. In a matter of days, students who were usually reluctant to share ideas in class were raising their hands, asking questions, and explaining their reasoning to classmates. By the end of the two-week unit, a noticeable shift had occurred in not only student interest and engagement but also achievement on classroom assessments. Students who had barely earned a passing grade on earlier unit tests were earning B's on the logarithms test. In her reflection on the experience, one student remarked, "It taught me more than just how to 'do' the problems—I understand it! Loved the experience, it was great! (P.S. You should really do every chapter like this. I'm serious!)"

At the heart of this work is the reconceptualization of mathematics instruction according to Realistic Mathematics Education (RME), an approach to teaching and learning mathematics originally proposed by the Dutch mathematician Hans Freudenthal in the 1970s. An essential principle of RME is that student engagement in mathematics should begin within a meaningful context. The development of understanding and the ability to make sense of mathematical representations begins with the student's own informal reasoning, or in the words of Freudenthal (1991), with "common sense." Drawing from a cognitive perspective of learning, students connect prior knowledge to new mathematical representations, concepts, and strategies. As a result, a more robust way of knowing and doing mathematics is constructed from the students' perspective.

When appropriate, the teacher introduces students to

pre-formal strategies and visual models to support their mathematical sense-making. Pre-formal strategies are often more abbreviated and efficient (e.g., the use of "chunking" of larger values when solving a division problem rather than using repeated subtraction or directly counting members of a group). Pre-formal models are representations that can be used to solve problems across various contexts, such as a ratio table or a double number line to solve a proportion.

Using the design principle of progressive formalization, instructional sequences are conceived as "learning lines" in which problem contexts are used as starting points to elicit students' informal reasoning. The role of the teacher is essential to help students collectively negotiate the meanings and use of conventional mathematical terms, symbols, representations, and procedures.

Two years ago we were approached by the mathematics faculty at Centaurus High School in Lafayette, Colo. to use progressive formalization to redesign their first-year algebra course. Given the push over the last decade to have more eighth graders complete algebra, high-school algebra courses are increasingly composed of students who have not been successful in mathematics. Similar to the "College Algebra" course, many of these students struggle to see the purpose or meaning of mathematics, often because it is presented in ways that lack purpose or meaning.

The algebra teachers (Nazan Burson, Jen Moeller, and Fred Peck) were interested in confronting this challenge as part of a design collaborative involving myself and FiSME colleagues Peter Boon, Mieke Abels, and Henk van der Kooij. The initial design target was a three-week unit for systems of equations.

In contrast to the logarithms unit, teachers also utilized a set of dynamic algebra applets made available in a Digital Mathematics Environment (DME) designed by Boon. Using a combination of generative problem contexts (e.g., bartering), visual representations such as fruits on a balance scale, and formal strategies for solving systems of equations, the entire unit was reconceived using the Iceberg Model (See Figure 1: page 4) to organize when models and strategies were going to be introduced (Webb, Boswinkel & Dekker, 2008; Webb & Abels, 2011).

For example, consider a typical systems of equations problem:

$$\begin{cases} y = 4x - 7 \\ 2x + 3y = -8 \end{cases}$$

In such problems, there are two variables and two equations, and only one value for each variable that will make both equations true. Neither equation by itself gives enough to solve for these missing values. Instead, students would be expected to solve such a problem using a "substitution algorithm," which involves replacing one variable with an equivalent expression

CONTINUED ON PAGE 4

Centaurus High School algebra faculty, from left, Jen Moeller, Fred Peck, and Nazan Burson, collaborated with David Webb and the Freudenthal Institute to transform algebra for students.

eye on research

EYE CONTINUED FROM PAGE 3



Figure 1: Iceberg Model for systems of equations.

Delia lives in a community where people trade goods they produce for other things they need. Delia has some fish that she caught, and she wants to trade them for other food. She hears that she can trade fish for melons, but she wants more than just melons. So she decides to see what else is available.

This is what she hears:

- For five fish, you can get two melons.
- For four apples, you can get one loaf of bread.
- For one melon, you can get one ear of corn and two apples.
- For 10 apples, you can get four melons.

5. Explain how Delia can trade her fish for ears of corn.

Figure 2: A bartering problem.



Figure 3: A contextual problem involving fruit on two balances.

Step 1: What did you do? Substituted the pineapple for lemons. Why will the scale remain balanced? 1 pineapple = 2 lemons.

Step 2: What did you do? Divided each side by 2. Why will the scale remain balanced? What? I do the 1 side. I need to do to the other.

Step 3: What did you do? Substituted the lemons for pines. Why will the scale remain balanced? 1 lemon = 1/2 pineapple. 2 lemons = 1 pineapple.

Figure 4: Student explanation of the substitution strategy using balance scales.

a. Solve: $2x + 5y = 5$
 $x + y = -2$
 $x = -2 - y$
 $2(-2 - y) + 5y = 5$
 $-4 - 2y + 5y = 5$
 $-4 + 3y = 5$
 $3y = 9$
 $y = 3$
 $x = -2 - 3$
 $x = -5$

STUDENT A

STUDENT B

Figure 5: Two different students solving the same formal algebra problem. Student A used a pre-formal balance model, while Student B used the formal substitution algorithm.

involving the other variable (in the above example, the y in the second equation would be replaced with the expression $4x - 7$). This new equation has only one variable, and hence will submit to standard algebraic techniques for solving single-variable equations. The strategy is simple and powerful: We substitute “equals for equals” in order to convert an unsolvable problem into a solvable one.

In a traditional algebra classroom, the teacher would model the substitution algorithm using formal symbols. This would be followed by guided practice, and finally individual practice, all using formal algebra. In this classroom, the teacher has done the majority of the mathematics, while the students are passive observers. Because students do not have the opportunity to make meaning for themselves the power and simplicity discussed above are obscured by a morass of formal symbols and operations.

In contrast, our progressive formalization unit was student centered. The unit began with students solving contextual situations involving bartering (see Figure 2). This context was accessible to students, and therefore, students were able to solve the problems themselves by making “fair trades.”

Students then explored problems involving two types of fruits and two balance scales. The goal of these problems is to use the information conveyed by the balance scales to find the weight of each type of fruit (see Figure 3). Neither balance scale by itself gives enough information to find the weight of either fruit. However, the balance on the left gives information about a “fair trade” that can be made in the balance scale on the right. Making this fair trade, students are left with only one type of fruit (lemons) on the right balance scale. They now have enough information to find the weight of one lemon. This information can then be used to find the weight of the pineapple. Figure 4 shows an example of how a student solved this problem.

This strategy of making a fair trade to solve a problem is the heart of the substitution algorithm discussed above. Furthermore, the context of balancing scales and fruit makes the strategy more accessible to students than does the formal algorithm.

This accessibility was enhanced by the use of technology. Although the problem shown was solved on pencil-and-paper, the students first engaged with balance problems using the interactive applets discussed above. These applets were dynamic, which allowed students to immediately see the effect of making changes to the balance scales (for example, if a student tried to replace a pineapple with a lemon, she would see that the scale became unbalanced. However, when the student made a fair trade, she would see that the scale remained balanced). This immediate feedback

was vital, as it allowed students to experiment with making substitutions, which in turn led students to see when a substitution was “fair.”

As students progressed through the unit, they were confronted with problems of increasing difficulty, which required progressively more formal strategies to solve. At each step in the formalization process, students built new models and strategies on the foundation that they had built earlier.

By the end of the unit, students had developed the formal substitution algorithm described above. However, their use of this algorithm differs from that of students in a traditional classroom in two important ways:

1. The formal algorithm at the tip of the iceberg is supported by the floating capacity of the students’ informal (bartering) and pre-formal (balance models) understandings. Furthermore, the students have ownership of the formal algorithm, because they developed it. In the progressive formalization classroom, students do the majority of the mathematics, not the teacher.

2. Students who are still developing their comfort with formal algebra have another way to solve systems of equations, namely, by using the pre-formal balance model. For example, Figure 5 shows how the same problem can be solved using formal algebra or by using the pre-formal balance model.

Surveys given at the end of the unit suggest that students realized both of the benefits discussed above. One hundred percent of students indicated that the models helped them understand formal mathematics, and 96% of students indicated that they used models to solve problems at least some of the time. When discussing the use of models, students commented:

- “Each model helps me understand equations, and if I make a mistake I can usually see what I did wrong.”
- “Models are good for helping you see how to do a problem, but once you see how, you no longer need them. I just use equations.”
- “They [the models] usually help me understand formal mathematics.”
- “If I’m having trouble with a certain problem, then I simply refer to the model and use that.”
- “I am very visual and these [models] help to show things in [a] different point of view, not just going through the motions, but why they work.”

The success of this unit has led to further collaboration between the high school teachers, Freudenthal research faculty, and myself. At this point, we have developed four units for algebra that are based on RME and progressive formalization. ■



Creating Futures

A Campaign of *Excellence* and *Impact*



University of Colorado **Boulder**
SCHOOL OF EDUCATION



The University of Colorado proudly launches *Creating Futures*, its Campaign of Excellence and Impact to enhance the university on all fronts, as well as to advance the economy, culture, and health of Colorado and the nation.

On the Boulder campus, and within the School of Education, we have established funding goals to help donors, alumni, and university supporters know where their giving can most fully advance CU-Boulder's immediate and future goals. Additionally, these goals match donor opportunities to CU-Boulder's *Flagship 2030* strategic priorities.

Donors have stepped up in unprecedented fashion recently. Their generous gifts add new depth to the School of Education's mission to conduct research to improve educational policies and classroom practices, prepare researchers at the doctoral level, educate teachers at the undergraduate and master's levels, and provide outreach services to our partner school districts and others throughout Colorado. Among recent donor gifts are the School of Education's first endowed chair from Bob and Judy Charles, the Miramontes Doctoral Fellowships, and a planned gift from Carol and Charles Reynolds.

Throughout this campaign, you will hear about the University of Colorado's four pillars of excellence and impact: Learning and Teaching, Discovery and Innovation, Community and Culture, and Health and Wellness. While the School of Education is particularly aligned with the Learning and Teaching pillar, it is deeply engaged with other pillars, as well.



The School of Education's outstanding science, technology, engineering, and math (STEM) education leadership, its CU Teach and nationally replicated Colorado Learning Assistants programs exemplify Learning and Teaching as well as Discovery and Innovation. We are proud to educate the nation's future teachers and education researchers through our rigorous curriculum. Our faculty produces significant research that is reshaping classroom instruction, both at CU and in K-12 schools.

The School of Education is dedicated to its outreach, supporting Community and Culture by forming and maintaining strong relationships with partner school districts through programs such as Partners in Education and the BUENO Center's comprehensive range of research, training, and service projects. Additionally, our faculty's research informs education policy locally, statewide, and nationally through the School of Education's National Education Policy Center.

Join in supporting the School of Education so that we can continue *Creating Futures* for generations of students and faculty.



For more information on the campaign, contact Margot Neufeld, the School of Education Senior Director of Development, 303-492-2990, or Margot.Neufeld@cufund.org.

Learning
& Teaching

Discovery
& Innovation

Community
& Culture

Health
& Wellness

Creating Futures

A Campaign of *Excellence* and *Impact*

Elizabeth Dutro presents research goals to WISE.



Donor generosity to the School of Education benefits everyone, including supporting ongoing and new research, providing tuition so that students can attend CU, and allowing faculty and students to engage in enhanced educational opportunities that help us prepare the next generation of leaders as they reach new heights in teaching and research.

Our scholarship program began in 1993 under the direction of now Chancellor Phil DiStefano and the University of Colorado Foundation. In our first year, we awarded five scholarships totaling \$2,500. Recently, the School of Education proudly awarded 70 scholarships and fellowships with a total value of \$326,500.

The School of Education wants to express its utmost gratitude to all of our donors as we recognize a sampling of them below through these testimonials.

Faculty

Bob and Judy Charles Endowed Chair

Provides funding in perpetuity for one distinguished faculty member to pursue research and/or outreach.

"I am honored to be the recipient of the Bob and Judy Charles Endowed Chair in Education. The Chair has allowed me to bring visiting scholars to campus, extend my outreach work with girls and women in Denver, offer release time for junior faculty seed projects, prepare graduate students in educational research, and travel to special conferences and meetings. I am so grateful to Bob and Judy for their incredible generosity in making this gift to the School of Education."

—Margaret A. Eisenbart, PhD, Distinguished Professor,
Educational Foundations, Policy, and Practice

Women Investing in the School of Education (WISE)

Provides financial assistance to School of Education faculty and students for graduate assistantships, research, teacher education, outreach, or other special projects. Dr. Dutro received a \$5,000 grant.

"I was awarded a WISE grant in fall 2010 and it has had a positive impact on my research project. Thanks to my WISE grant, I was able to invite a second doctoral student to join my project. In addition to providing another stellar collaborator on the study, this allowed us to spend many additional hours in K-12 classrooms, observing and documenting instruction, and listening to students' perspectives on their school experiences. I am so grateful to WISE!"

—Elizabeth Dutro, PhD,
Associate Professor and Chair, Literacy Studies

Student Scholarships

ACS - Hach Land Grant Scholarship

Provides \$6,000/year toward national support for undergraduate chemistry, new chemistry teachers, and chemical outreach.

"I am a graduate student who is working on a Master's degree in Curriculum and Instruction. I haven't taught since my oldest child was born 13 years ago and the loss of my income has forced my family to make many hard financial decisions. The ACS - Hach Land Grant Scholarship has eased the burden for my husband and children by significantly helping to make graduate school within our budget. Without that scholarship, I would not be in a position to graduate this spring; it has made a tremendous difference in my education as well as my future career teaching chemistry! I am immensely grateful that I received this scholarship and hope to share my love for chemistry with my students next fall."

—Kathleen Packard

"The ACS - Hach Land Grant Scholarship Program has helped me with financial need so that I do not require a job while I go to school. This has helped me so much so that I am able to dedicate time to my classes and do well. I am also then able to spend extra time being involved in campus groups and other involvements outside of school that are important to me such as church, working with kids, and spending time with my family and friends. To become a teacher the education is necessary, but the experiences and the people around are what make you who you are and I would not be able to get those experiences or spend time with those people as much if I had to work to pay for school. Thanks for the help!"

—Kaylynne Hobulin

David and Margaret Grohne Scholarship

Provides out-of-state tuition for scholastically achieving undergraduate students with leadership potential who have a goal of becoming a teacher. The merit-based scholarship allows for six semesters, provided the student remains in good standing in the teacher education program.

"Receiving the David and Margaret Grohne Scholarship has had a significant impact on my success in the University of Colorado School of Education's program. The support provided by this scholarship has allowed me to focus all of my energy toward learning how to become the best science teacher I can and more quickly fulfill my aspiration of becoming a licensed teacher. I cannot imagine how I would have achieved so many of my other educational accomplishments without the support of this generous investment."

—Erin Park



Chancellor DiStefano, far left, meets President Obama.

STEM education is a key CU-Boulder fundraising priority

Editor's Note: The following remarks are highlights from a speech given by University of Colorado Boulder Chancellor Phil DiStefano in October 2010 to the CU Foundation Board of Trustees.

We are taking a leadership role nationally in science, technology, engineering, and mathematics (STEM) education. We are working collaboratively with the School of Education, our science departments, and our College of Engineering and Applied Science.

Our goal in STEM is to double the number of science and math teachers that we produce here at this university in the next 10 years. So the STEM initiative is not only changing how we teach at the university, it is also making sure that we have additional, qualified teachers in our K-12 public schools. ■



Learning
& Teaching

Discovery
& Innovation

Community
& Culture

Health
& Wellness



Miramontes Doctoral Scholars

Provides three years of support for doctoral studies (approximately \$22,000 per year) plus a fourth year of support following successful defense of a dissertation prospectus.

“As a first-year doctoral student in the Education, Equity, and Cultural Diversity program at the School of Education, my academic interest is in investigating effective instructional and assessment practices in mathematics and science for English language learners. Prior to graduate school, I taught in culturally and linguistically diverse classrooms in Texas and Colorado. This is where I became interested in learning more about language acquisition, and mathematics and science learning processes, as a way to increase influence and be able to make a difference in these areas. I am originally from Mexico, but became a U.S. citizen on Feb. 25, 2011. I consider the Miramontes Doctoral Scholars to represent my American Dream, as well as my opportunity to help others fulfill their own dream.”

—Karla del Rosal

Elizabeth A. Wilson Scholarship

Provides a Teaching Assistant salary for one semester; plus a \$1,000 stipend.

“The Elizabeth A. Wilson Scholarship has provided me with two significant benefits. First, it has enabled me to pursue a meaningful course of study on new teacher training and instruct pre-service elementary teachers in the art of science teaching. Second, it has reinvigorated me as a scholar and educator by serving as a reminder that support is out there for those committed to a quality education for all.”

—Ian Renga



Miramontes Scholars

Campaign Q+A

What is Creating Futures?

A. *Creating Futures* is a fundraising campaign that will enhance the University of Colorado on all fronts and enable the university to advance the economy, culture, and health of Colorado and the nation. This broad-based effort makes a public case for the importance of the university's work and its valuable contributions.

Why is this campaign needed?

A. Roughly 50,000 generous donors support CU's four campuses annually. Donors provide a margin of excellence that helps CU thrive throughout this time of extraordinary need and extraordinary opportunity. Despite that generosity, decreases in funding from the state legislature, as well as the economic downturn, have challenged CU's budget. While the university has improved efficiencies and undertaken extensive cost-saving measures, and continues to do so, it is critical that those loyal to CU staunchly support this great university.

Has CU conducted previous campaigns?

A. The university completed three other comprehensive campaigns: *Second Century Campaign* (1972-79, \$14 million), *Frontier 2000* (1987-1993, \$271 million), and *Beyond Boundaries* (1996-2003, \$1 billion).

What has Creating Futures accomplished so far?

A. The campaign has been in a quiet phase since July 1, 2006, during which time more than \$700 million was raised toward *Creating Futures*. In this phase, campus fundraising priorities were developed, infrastructure was bolstered throughout the CU Foundation—the university's development partner—and relationships with key CU constituents were fortified. Traditionally, as a benchmark, a comprehensive campaign generates roughly one-half of a campaign's goal during this initial quiet phase. A public launch permits CU and the CU Foundation to broadly promote the campaign, plan specific events and initiatives in support of the campaign, and expand the university's ability to connect donor passions with fundraising priorities.

How were fundraising goals determined?

A. Fundraising priorities have been determined through a strategic planning process directed by campus leaders, and are aligned with each campus's strategic priorities. Financial goals were set based on the trajectory of recent donor support and a review of CU's constituent base—donors and prospects, alumni, corporations and foundations, and others with interests in common with the university.

What makes Creating Futures distinctive?

A. *Creating Futures* promotes a donor-centric fundraising philosophy. This approach engages donors by listening to them, eliciting their own passions, and helping donors find ways to achieve their own philanthropic goals at CU. *Creating Futures* highlights the positive outcomes generated by private support for CU.

Who is leading the campaign?

A. University of Colorado President Bruce Benson and his wife, Marcy Benson, are the voluntary chairs of the campaign. In addition, leaders from each CU campus, the CU Foundation, and CU's volunteer base will spearhead campaign efforts.

How long will this campaign last?

A. The campaign will continue until it meets selected benchmarks, which should occur within the next four to five years. During that time frame, we expect to raise approximately \$1.5 billion toward people, places, and programs on all four campuses. During the recent economic downturn, many universities in the midst of time-constrained campaigns were suddenly presented with the need to either prolong the campaign, or change the goal. By not adhering to a hard-and-fast end date, *Creating Futures* leadership can remain true to campaign priorities while recognizing that unusual times may call for added flexibility.

How will the campaign's success be determined?

A. Success will be measured by the campaign's ability to fuel CU-wide initiatives that will transform CU's capacity to achieve its vision.

Creating Futures

A Campaign of *Excellence* and *Impact*

Carol and Charles Reynolds choose School of Education: "We wanted to give something that would be ongoing"



Carol and Charles Reynolds

Carol Robinson Reynolds and her husband, Charles Reynolds, committed an estate gift of \$750,000 for the School of Education. Some of the funds enhance their previous gifts to the school. Other funds, when realized, will add to a scholarship the Reynolds established for graduate students. Although the scholarship's use is left to the discretion of the dean, the Reynolds envision it perhaps going to help graduate students complete a program or continue their research. The rest of the funds will be unrestricted, their distribution open for the dean to choose.

The Reynolds considered various estate planning options and realized that by the time money left for an occasion, place, or program became available, the area the gift would support might no longer exist. They reviewed nonprofits, but worried about their long-term viability, as well.

"The more we pursued it, we thought we really wanted to give to the schools of our past," Reynolds said. She earned all three of her degrees at the University of Colorado Boulder: BA in 1958, master's with a specialization in guidance and counseling in 1968, and her EdD in 1978. She quips that her

husband is also an alum because he took one course at CU-Boulder!

Reynolds herself was a teacher and administrator in the Denver Public Schools system for nearly 30 years and believes in improving one's education throughout one's life. Her husband worked in computer operations at the Denver Water Department.

"We wanted to give something that would be ongoing and that we knew would be well used. We knew the University of Colorado Foundation would be there in the future," she said. ■

Harold Conroe includes CU in his estate planning

Retired teacher and long-time Colorado resident Harold Conroe believes in giving back. In addition to gifts to two high schools, Conroe has named the School of Education in his estate plans.

"I feel I should help CU since it helped me so much," he said. "I figured the best way to use my estate was to help somebody else and what better way to use it than for the University of Colorado?"

Conroe hopes his gift will help young people who want to continue their education: "I'd like to help the kids who really need the help," he explained. His first charitable gift annuity to the university was in 2007 for \$20,000 and with his newest gift, his support to the university totals \$50,000.



Harold Conroe

A graduate of McClave High School near Lamar, Colo., Conroe joined the Navy in 1942. After he was discharged in 1945, he moved to Hasty, Colo., where his parents had a ranch and other small businesses. It didn't occur to Conroe to take advantage of the GI Bill of Rights that provided returning World War II veterans with college or vocational training. In 1947, a high school friend, Bob Love, recommended that Conroe enroll in college using the bill, so he did. He studied for his arts and sciences degree in Gunnison, Colo., at Western State College, then transferred to the University of New Mexico to finish an industrial arts degree because he enjoyed working with wood.

After earning his degree, he returned to Hasty for a few months. Then, one day, he received a call that changed his life. The superintendent of schools for Erie, Colo., contacted Conroe and asked if he'd like to come up and take a look around—"and I've been here ever since." Conroe began teaching industrial arts during the day and drove the school bus in the mornings and evenings for the Erie school district. Additionally, during the span of his career in education, he served as a teacher and the principal at Erie Junior and Senior High Schools; a counselor at Erie, Frederick, and Lyons schools; and a teacher at Longmont Junior High School, just to name a few of his roles until his retirement in 1983.

He admits that his favorite experiences were those involving high school athletics. "It's so marvelous to see kids do all they can do in sports," he said. Conroe kept track of all the scoring for high school basketball games in Erie and announced for football games for more than 20 years. His own athletic experience as a player included being a center on a six-man football team for McClave High School.

Despite all of his other commitments, Conroe found time to earn his master's in Secondary Administration from CU-Boulder in 1962. And he married his wife, Alma, in 1956. Today, Conroe is a man who feels fulfilled with his life.

"If I had 85 years to do over, I'd do it all over again," he said. "I wouldn't change one thing." ■

To make a gift to the School of Education, contact Margot Neufeld, 303-492-2990 or Margot.Neufeld@cufund.org.

Happy 3rd birthday WISE!

Formed in 2009 to support the mission of the School of Education, membership in WISE, Women Investing in the School of Education, now stands at 32 (from Colorado and several states) and just under \$50,000 has been awarded to faculty in the last two years. Members make a pledge of \$3,000 or a gift of \$1,000 per year to join WISE.

Each fall, faculty submit formal proposals for a WISE grant and then meet with the members directly to tell them in person about their undergraduate and graduate research projects, outreach with partner school districts, and the needs of students and the School. Then members vote on their top-rated projects.

"WISE has turned into an incredibly important funding source for our faculty and students," commented Lorrie Shepard, Dean and Distinguished Professor. "Faculty know that they are eligible to apply for these internal grants in the fall and they have watched in appreciation as the group has grown and more work in the School of Education receives support. And the members take this responsibility seriously! They want to know about the projects, they ask questions, and are actively engaged in deciding who gets a grant."

Members are enthusiastic about the work being done by the group: "Being a charter member of WISE has allowed me the privilege of giving back time, energy, ideas, and money to benefit the School of Education and to work cooperatively with the dean, professors, staff, fellow members, and our community," said Barbara Quinlan, Education alumna and CU Foundation Trustee. ■

Learning
& Teaching

Discovery
& Innovation

Community
& Culture

Health
& Wellness



Students in a "Step 1" class try out SPARK technology.

Zeroing in on technology for teaching and research

When faculty members have a question about how to better apply technology to their work, they contact Cory Pavicich. As an Academic Technology Consultant (ATC), Pavicich zeroes in on how to effectively integrate technology into teaching and research.



Cory Pavicich

ATCs are provided through Information Technology Services' Academic Technology group to facilitate technology use by faculty and graduate students. With an MEd in Learning and Teaching from Harvard University and experience as a K-12 teacher under his belt, Pavicich makes an ideal resource for the School of Education.

Even though he may miss the classroom at times, Pavicich realizes that as an ATC, he can "impact larger educational communities and the future of technology in schools." He also appreciates working closely with "world-class researchers and the next generation of classroom teachers."

Pavicich's advice ranges from the pedagogical value of the use of technology to specific software programs and on-campus media services, and how others currently use technology for teaching. He also offers individual and group development opportunities.

"There are lots of great resources available to professors that they may not know about or may not have time to seek out by themselves. They can come to me as a one-stop professional resource for help," said Pavicich.

The following stories highlight examples of how Pavicich collaborates with faculty and some of the great ways School of Education faculty are already using technology in their teaching. For additional information on the Academic Technology group, contact Cory.Pavicich@colorado.edu. ■

CU Teach

Using the SPARK™ handheld device to enhance learning

Master Teacher Julie Andrew's "Step 1 Inquiry Approaches to Teaching" (EDUC 2020) class recently used a SPARK™ to demonstrate a lesson in motion. The SPARK is a handheld device that promotes collaboration and idea sharing for science learning.

EDUC 2020 meets weekly and students also make five visits to a local elementary school in order to provide prospective math and science teachers a chance to experience teaching. This career-exploration course introduces undergraduate students to a streamlined secondary math and science teacher education program called CU Teach.

"In our 'Step' courses we like to expose our students to the types of technology that might be available to incorporate in their own science classrooms," said Andrew. "We have a system in place where students can check out equipment such as the SPARK and bring that to their practicum site for students to use. We also have many sensors and probes that work with the SPARK that students can use. The probes include heart rate monitors, pH probes, CO2 sensors, and force meters, to name a few. The system is really versatile and can be used in a variety of applications." ■

SMART Boards allow interactive lessons



Faculty and staff receive SMART Board training.

School of Education classrooms are being equipped with SMART Boards to allow interactive lessons between teachers and students. Here, Amy Vorwaller, SMART Certified Trainer with CCS Presentation Systems, leads a training for School of Education faculty and staff on the board's features. The SMART Board is a white board that responds to simple touch gestures that allow users to write, draw, and

manipulate content with the touch of their fingers. Interactive White Boards (for which SMART is a leading industry provider) offer exciting opportunities for dynamic presentations by teachers, as well as interactive lessons and opportunities for student collaboration. IWBs are a classroom technology that most of CU's teacher candidates will see, especially in Boulder Valley schools, as well as many other districts statewide. ■

TECHNOLOGY UPDATE

Technology as instructional strategy



Monette McIver

Using an audio technique, such as podcasting, to expand college students' writing abilities may sound counter-intuitive—that is until you speak with Assistant Professor Monette McIver. For her "Integrated Reading and Writing for Elementary Schools" (EDUC 4321) class, she assigned a podcast to engage her students in writing for a specific audience with a particular purpose to the writing.

McIver did not want to assign a typical writing project. She wanted her students to experience solving a writing problem, interviewing a source, writing a script, and recording it as a podcast. The students will learn how to use online podcast programs, either GarageBand or Audacity, to record their podcasts. Students are also encouraged to incorporate the facilities and expertise available at CU's ATLAS Center for Media, Arts and Performance.

Most of McIver's 29 students are undergraduates who want to be teachers. This class gives them a practicum-based experience in which they learn about and teach reading and writing to elementary students. McIver teaches the writing portion of the course, and Senior Instructor Donna Begley provides the reading instruction. Students meet in Brighton's Pennock Elementary School, one of the two schools where they get experience working with young children.

"The goal is to get them to practice their own writing and use technology available in their classroom. These students get to do real writing that relates to a topic of interest to them that performs a service to the community. They will learn how to adjust the language for their particular audience, such as policymakers, teachers, or parents, as well as write with a finished audio project in mind," McIver said.

Additionally, her students will have the opportunity to work together and practice writing in a collaborative-learning atmosphere. They are divided into seven groups, each finalizing its own podcast.

Their assignment is to take a writing-related problem, such as writer's block, or the pros and cons of cursive, and develop a well-researched, 15- to 20-minute podcast that articulates conflicting views. They must also include one interview in the project. McIver is supporting them with online resources and she is also creating her own podcast.

McIver purposefully wants the students to work outside their comfort zone. And, since technology is such an integral part of today's society, she wants her students to gain more experience using technology as an instructional strategy.

"There is some discomfort in the process," McIver noted. "But, they're curious enough about the project and that's carrying them through. My hope is that from this experience, when they go out into the schools and work with teams of teachers, they'll integrate these experiences. ■

Moving online with Google

School of Education faculty are implementing a variety of technologies in their courses, establishing collaborative methods, and forming vibrant online communities. Assistant Professor Ben Kirshner finds himself moving online increasingly for managing his class assignments and instructions.

"I use Google Sites and Blogger because I want students in my class to become facile with free and publicly available software," Kirshner said. "It is important that our teacher education students see the potential of these technologies for their own teaching."

Blogger (a Google product) is used for student reflection on assignments for Kirshner's graduate-level class, "Advanced Child Growth and Educational Development" (EDUC 6328). Because the blog remains online after each semester, students can review past blogs from previous classes as well as postings by their current peers.

Google Sites serves a similar function to the CU-hosted online site, CU Learn, except that the Google software is a free platform. Google Sites is a web application geared for document sharing by groups and allows Kirshner and his students to integrate functions from several media tools, including blogging, posting photographs, and using wikis to promote interaction and learning.

"I think students appreciate my efforts to use these technologies," Kirshner said. "I credit Cory Pavich, our Academic Technology Consultant, for his guidance on these Google sites. He has been a really helpful coach." ■



Ben Kirshner



Racial Initiatives for Students and Educators Symposium

Community members, CU alumni, students, and faculty attended the Second Annual R.I.S.E. Symposium Feb. 18. Organized by graduate students in the School of Education, the event focused on the topic, "Examining the Rhetoric of Race and Achievement Gaps." From left to right, standing, are panelists Catherine Smith, Michele Moses, Rita Kohli, David Stovall, R.I.S.E. Symposium organizer Subini Annamma, and panelist David Connor. Seated left to right are R.I.S.E. Symposium organizers Becky Beucher, Deb Morrison, Liz Mendoza, and Ruth López. ■

views

KUDOS Current news of faculty, students, and alumni

FACULTY

Derek Briggs was quoted in *Education Week* regarding his study on SAT scores and their relationships to test preparation courses. He also tackled the *Los Angeles Times* in a recently published study: "Due Diligence and the Evaluation of Teachers." Briggs and co-author REM graduate student, **Ben Domingue**, found flaws in the research used by the *LA Times* in its ratings of individual teacher performance.

Kris Gutiérrez was appointed by President Obama to serve on the National Board for Education Sciences, which approves the research priorities and evaluates the work of the U.S. Department of Education's Institute of Education Sciences. Gutiérrez was also selected to receive a Chancellor's Award for Excellence in STEM Education—Faculty Award for her project, "When Scientific and Everyday Knowledge Grow into One Another: Designing for Robust Science Learning for Students from Non-dominant Communities." Gutiérrez and students **Andrea Bien** and **Makenzie Selland** (both third-year doctoral students, Literacy Studies) published a chapter, "Syncretic Approaches to Studying Movement and Hybridity in Literacy Practices," in the *Handbook of Research on Teaching the English Language Arts* (3rd edition). Also, Gutiérrez and students Bien, Selland, and **Daisy Pierce** (third-year doctoral student, Educational Psychology) have an article, "Polylingual and Polycultural Learning Ecologies: Mediating Emergent Academic Literacies for Dual Language Learners," in press at the *Journal of Early Childhood Literacy*.

Daniel Liston earned the Robert L. Stearns Award which will be presented May 4 at the 81st Annual Alumni Awards Ceremony. The award recognizes members of the faculty and staff for extraordinary achievement or service in: teaching, service to the University, work with students, research, or off-campus service.

Michele Moses was approved for candidacy on the Fulbright Specialists Roster. The Roster includes eligible candidates who have the opportunity to be matched with scholarly program requests from academic institutions overseas.

Lorrie A. Shepard was one of two invited plenary speakers at the 60th annual meeting of the Literacy Research Association. Her topic was, "Teaching with Integrity in the Face of High-Stakes Testing."

Finbarr (Barry) Sloane served on the first National Panel formed by the American Statistical Association to generate the nation's research agenda for statistics education research in U.S. schools. He also presented on the appropriate role of statistics in the study of mathematics education reform at the International Conference on the Teaching of Statistics held in Ljubljana, Slovenia. He presented the Maseeh Colloquium at the Department of Mathematics and Statistics at Portland State University. Sloane advised survey researchers at the National Center for Educational Statistics on its ongoing longitudinal study of algebra learning in high school and college. In March, Sloane reviewed for the National Science Foundation (NSF) new PRIME program (Promoting Research and Innovation in Methodologies for Evaluation). He was recently named to the Palmer Johnson Committee as Chair-elect. This summer, Sloane will participate in the "Design Based Implementation Research" workshop sponsored by the NSF and hosted by SRI, International.

Jennie Whitcomb attended the American Association of Colleges of Teacher Education 2011 annual meeting in San Diego. She chairs AACTE's Research and Dissemination Committee. She moderated a major forum, "Linking P-12 Longitudinal Data and Educator Preparation: From Accountability to Program Improvement."

ALUMNI

Sandra Butvilofsky (PhD '10) and **Wendy Sparrow** (PhD '10) were selected as finalists for the American Educational Research Association dissertation of the year from the Bilingual Research Special Interest Group.

Donald Eugene Carlone, 81, of Fort Collins, Colo., died Jan. 16, 2011. He had an extensive teaching and academic career at CU from 1966-1984.

Kady Haisley (BA '78, MA '84) is a finalist for an Impact on Education Award, which recognizes individuals in the Boulder Valley School District who have an extraordinary impact on student learning.

Jeremy Jimenez (MA+ '07) co-principal of Justice High School, Lafayette, Colo., was featured in a Daily Camera article about his school's success.

Will Krebs, who recently completed his master's in the Educational Foundations, Policy, and Practice program, accepted a position with the Indiana Department of Education as the Senior Advisor for Policy and School Leadership.

Sheryl Ludwig (PhD '07, MA '98) was awarded tenure and promoted to Associate Professor at Adams State College, Alamosa, Colo.

Elizabeth Meador (PhD '00) was appointed next Head of School at Boulder's Watershed School. She assumes the position July 1. Watershed's co-founders, **Jason Berv** (PhD '02) and **Sumaya Abu-Haidar** (PhD '01), are also School of Education doctoral program graduates.

Michael Orosco (PhD '07, MA '01) received the Frank Pajares Award for his article, "A Sociocultural Examination of Response to Intervention with Latino English Language Learners," in *Theory Into Practice* (Vol. 49).

Keith Summers (MA+'10) obtained his first teaching position as a part-time Special Education teacher at Altona Middle School, Longmont, Colo.

STUDENTS

Doctoral students **Andrea Bien** (Literacy Studies), **Daisy Pierce** (Educational and Psychological Studies), and **Makenzie Selland** (Literacy Studies) authored articles with Professor Kris Gutiérrez (see her listing in the faculty section for details).

Darrell Jackson, Educational Foundations, Policy, and Practice PhD candidate, won an American Educational Research Association Minority Dissertation Fellowship for 2010-2011.

Ruth López, an Educational Foundations, Policy, and Practice PhD student, was selected as an American Association of Hispanics in Higher Education 2011 Graduate Student Fellow.

Mike Ross, doctoral student in Math and Science, received the iSTEM Chancellor's Award for Excellence in STEM Education.

Molly Shea, doctoral student in Educational and Psychological Studies, started a nonprofit headquartered in Boulder, Entrust.ed, <http://we-trust.org/>, that focuses on matching donors with educational nonprofits.

Ben Van Dusen, doctoral student in Math and Science, received the iSTEM Chancellor's Award for Excellence in STEM Education. He was also featured on the American Physics Society's website in the "I am a physicist" column. The column is designed to help attract future physicists: <http://www.physicscentral.com/explore/people/vandusen.cfm>. The column tells how Van Dusen developed his interest in physics and how it comes in handy for his athletic passion, disc golf.

We are always eager to hear what our alumni are doing. Send your news, including updated contact information, to Barbara.Darling@colorado.edu.