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Faculty Interviews

In Fall, 2008, seven faculty members became CRMSE members: Andrew Izsák, Meredith Houle, Jessica Pierson, Sara Unsworth, Tom Carey, Tom Impelluso, and Cynthia Park. Last year's article introduced you to Andrew, Meredith, Jessica, and Sara. This year we feature Tom, Cynthia, and Tom.

Dr. Thomas Carey

Dr. Tom Carey is a Visiting Senior Scholar at SDSU. He is Principal Investigator for the FACCTS program for collaborative course transformation teams in the California community colleges, funded by the William and Flora Hewlett Foundation.

Tom also recently completed work as Program Director for the ELIXR research and innovation program, which was selected for two innovation awards by national professional associations as the top online resource in faculty development. The ELIXR project was a collaboration of 30 higher education institutions led by Dr. Carey, with a team based at the California State University Office of the Chancellor and supported in part by a grant from the Department of Education’s Fund for Innovation in Post-Secondary Education. The partners spanned a broad range of public and private institutions, including flagship research universities, comprehensive state universities and community colleges. The collaboration created over 100 digital media case stories for faculty development, along with processes and tools to expand and sustain the collection. (More information on the MERLOT ELIXR project is available at http://elixr.merlot.org).

Tom was recently appointed as Senior Partner for Network Growth at the Carnegie Foundation for the Advancement of Teaching in Palo Alto CA. He will lead Carnegie’s efforts to sustain and spread the innovations developed through a networked community of educators, researchers, developers, and students involved in the Foundation’s work in developmental education in community college. This initiative aims to turn around the alarming failure rate of community college students in mathematics. He joins a distinguished academic panel of Senior Partners (from UCLA, Stanford and the University of Texas at Austin).

At his home campus—the University of Waterloo in Canada—Tom’s most recent campus position was as Associate Vice-President-Learning Resources & Innovation, where his mandate focused on enhancing learning through innovations in teaching and technology. He also has served as co-Chair of the Advisory Board and as Chief Learning Officer of the MERLOT network [www.merlot.org] in the U.S. and founding Director of the Cooperative Learning Object Exchange in Canada.

Tom was one of the founders of Human-Computer Interaction as an academic discipline in Canada. He was also co-leader of the Workplace Research theme in Canada’s national Network of Centres of Excellence in TeleLearning, where he led research...
projects in workplace learning with government, not-for-profit and corporate organizations such as IBM Canada and Nortel Networks.

**Focus of Professional Work**
The focus of Tom’s work has been on strategic collaboration in higher education. He realized that his investments in faculty development while at Waterloo would reap more effective return if they could be done collaboratively, sharing with peer institutions. He coordinated and leveraged investments into a community of practice with our teachers. He then became the Chief Learning Officer for MERLOT, and headed a Transforming Course Design initiative across 22 of the 23 CSU campuses.

Tom currently is working to transform undergraduate education in STEM fields. He is working on several grant proposals, one of which centers on creating new resources and teaching methods for teaching developmental math. Faculty development focuses on helping faculty use resources, moving from low-threshold changes, such as modifying classroom-teaching strategies to include more hands-on activities, to more transformative activities, such as rethinking what students need to learn about mathematics. Another way to describe this is how to help faculty move from a craft conception of teaching to a more professional conception.

**Outside-of-Work Interests**
Tom has many outside-of-work interests. His family includes his wife, Judy, three children, and two grandchildren. Judy took early retirement after teaching elementary school for many years, and she recently authored a resource kit, *Racing to Reading*, for adult volunteers to support early reading.

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**Cynthia Darche Park**

Dr. Cynthia Park is a Professor of Teacher Education and Executive Director of the Pre-College Institute. Cynthia's professional work focuses on the research and development of effective programmatic and instructional practices to improve achievement and the life chances of low-income students in mathematics and sciences.

**Current Work**

Cynthia stays active on several projects within and beyond the university. On a national level, Cynthia serves as a member of the national advisory board for the Louis Stokes Institute for Opportunity in STEM education. She assists in the planning and implementation of national and regional education summits to assess federal policies on science, technology, engineering and mathematics education, K–12 through to postsecondary education and in formulating recommendations to improve those policies.

As external evaluator for the BioBridge teacher quality enhancement program with UCSD, Cynthia has participated in training more than 100 teachers over the past four years of the project, which started with a FIPSE grant and has continued with a Department of Education Research grant.

Cynthia also has other connections with UCSD. She holds a subcontract with the UCSD School of Medicine and is part of a Health Careers Opportunity Partnership (HCOP) with both the School of Medicine and neighborhood clinics to increase the opportunities for low-income, under-represented students to enter health and allied health fields. This program gives 25 high school students the opportunity to work in research labs during the summer with scientists and to experience a structured six-week academic program on campus. It also gives 10 undergraduates the opportunity to work in research labs during the summer and to present their research at the UCSD-sponsored undergraduate research conference at the end of August each year. All 10 of the students presented last August.

At SDSU, Cynthia directs the newly instituted Pathways Office sponsored by CRMSE. Pathways acts as an umbrella organization for all university initiatives to increase the number of SDSU students pursuing teaching credentials in mathematics and sciences. The Office also administers America Counts, a federal work-study program that recruits, screens, trains, places, and supervises forty undergraduates each year to tutor in mathematics and science classes.

Cynthia is also a faculty member designated to mentor students for the new University-administered Faculty-Student Mentoring program. The program focuses on improving the research skills of junior and senior undergraduates. She works with eight undergraduates in the College of Sci-
ences. They are majoring in psychology, chemistry, biology, and public health. The emphasis is on qualitative case studies of teachers and students who have participated in the BioBridge teacher quality program.

As Co-principal Investigator for the newly funded, six-year Gear Up to College Avenue Compact, Cynthia is immersed in the policy and process of school improvement in City Heights, especially as it relates to mathematics and sciences.

**Future Plans**

For the next year Cynthia will be focusing on developing the University Advisory Committee for the Pathways Office, launching a new website, and working on an article examining the development of the Faculty-Student undergraduate research mentoring program. Cynthia is part of a group now analyzing the data that the undergraduates have collected over the past academic year.

**Outside of Work Interests**

Cynthia’s interests are as diverse as they are plentiful!

She enjoys opera, both heavy and light! In the past five years, Cynthia has traveled to Seattle for the magnificent presentation of all of Wagner’s *Rings*, to Paris where the recent production of *Mignon* by Thomas was given at the historic Opera Comique, to Santa Fe, New Mexico, three times for their world-class summer repertoire opera productions, and, of course, to the storied Metropolitan in New York City for *Romeo and Juliet* and other noted operas. Cynthia and her husband have recently completed the construction of an outside kitchen and have jointly cooked up some marvelous grilled stuffed out of Cynthia’s favorite cooking magazine, *Cooks Illustrated*.

In addition, Cynthia has a goal of reading all 100 of the greatest novels in the world before she dies, but she readily admits that she may not make it because as she picks up one of those famous novels, such as Hardy’s *Tess of the D’Urbervilles*, she ends up reading virtually every important novel the author wrote. She is not going to get through all 100 very quickly that way!

Cynthia also likes to cook. She thoroughly enjoyed the movie *Julie and Julia* because Julia Child’s Mastering the Art of French Cooking was given to her on her wedding day and she has proceeded to become good at many of the recipes, such as the famous Beef from Burgundy. Cynthia and her husband have recently completed the construction of an outside kitchen and have jointly cooked up some marvelous grilled stuff out of Cynthia’s favorite cooking magazine, *Cooks Illustrated*.

Finally, Cynthia is a devotee of Weight Watchers online. She wrote, “Anyone who loves to cook and eat like I do, definitely needs Weight Watchers all the time!!!!” Bon appétit, Cynthia, and welcome to CRMSE!

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**Thomas J. Impelluso**  
Meet Dr. Thomas Impelluso, Professor of Mechanical Engineering. Tom asked himself the provocative question...

*Isthe excellence of our textbooks undermining student learning?*

Tom wrote the following about his answer to that question and more.

“Today, a problem in engineering or physics is presented in a textbook, but stripped of the effort and assumptions that were used to formulate it. All ‘pondering’ is removed as, in most cases, the author ‘cuts to the chase’. Students might come from their studies thinking that 1) existing models are all there are and all one need study; 2) solution of problems really is straightforward; and 3) there was no work or effort involved in formulating theories or models.

When I teach, I take the time to solve mechanics problems a multitude of ways in order to evince solution patterns. I often solve them the wrong way (to show why errors are, indeed, errors). I am also interested in online modalities. I have taught two courses online and am now doing it with a third course.”
On a pure research level, I write 3D finite element and multi-body dynamics software. In Mechanical Engineering, there are four characteristics of things to which one attends. 1) things flow (fluids—fluid dynamics), 2) things move (rigid bodies—dynamics), 3) things deform (like solid mechanics), and 4) things get hot (thermodynamics). Each of these has developed a sub-discipline. Each has developed a computer methodology; for solid mechanics, a sub-discipline is called the finite element—dynamics, wherein we examine how objects constrain motion of other objects.

For example, in the movie Pocohontas, in one scene, leaves are falling and those leaves were not animated by an artist but were instead programmed by a mechanical engineer using flutter mechanics. Animating fire, or hair, is a major accomplishment. The movie Avatar used many algorithms, developed by an engineer. Computer gaming also uses many of these programs.

I use the tools described above to create elastic, plastic, hypo-elastic and visco-elastic models of bone and muscle and other non-linear materials. I also use the tools of the cyber-infrastructure to integrate the phases of multi-phase mechanics problems.”

Current work
Tom currently teaches Dynamics, Machine Design, Computer Programming for Engineers, Finite Element Methods, and is developing a course that involves 3-Dimensional Dynamics using moving frames. Machine Design is a course at the intersection of mechanics theory and machine design. Students develop design projects and provide reports that reference kinematics and dynamics theory. They work the theory and application and develop design models in a historical context.

Tom loves learning how disciplines developed, and believes they should be studied as they were developed (“ontogeny recapitulates phylogeny”). Right now, he marvels about the similarity between the work of Thomas Aquinas (and his ‘first mover’ approach to discussing the existence of God), and Issac Newton (who did the same thing, but discussed the existence of Force). Tom discusses these similarities in his Dynamics class. Also, while teaching the laws of Newton, he is prone to have the Andrews Sisters singing in the background, “Don’t sit under the apple tree…” Currently, Tom is reading “The Scientist in the Crib” to see if there are certain scientific theories that were imprinted upon us when we were babies. He is looking for collaborators in any aspect of the above work.

Future plans/hopes
While he did have a major research thrust at one point, Tom is slowly setting that aside. He is now very interested in student learning. His first degree was in Art History from Columbia University; and he is well trained in the humanities. Tom is finding a renewed interest in these areas.

Tom is currently creating a summer camp in engineering for eighth graders, with the Fleet Center and the Kroc Center, that may be offered as a week-long camp. Tom recently volunteered for the National Assessment Governing Board as a panelist for the 2009 Science NAEP Achievement Levels-Setting Process. He assisted in the setting of cut scores (our nation’s report card in science). Tom has also been asked to assist in writing 8th and 12th grade engineer-
What is the Center for Research in Mathematics and Science Education?

The Center for Research in Mathematics and Science Education (CRMSE) is an inter-disciplinary community of scholars who seek to advance mathematics and science education at local, state, and national levels by providing leadership in research into the learning and teaching of mathematics and science, as well as materials and program development, outreach, and evaluation. CRMSE members jointly operate the Ph.D. Program in Mathematics and Science Education (MSED) with the University of California at San Diego. Below are some highlights.

- CRMSE promotes collaboration and cross-fertilization of ideas and initiatives among faculty across seven departments in the College of Sciences, the College of Education, and the College of Engineering.
- CRMSE facilitates the development and conduct of externally funded projects. CRMSE faculty members have been successful in obtaining external funds (largely from the National Science Foundation) to conduct educational research. Since 2000, CRMSE faculty members have obtained more than $50 million in external funding.
- CRMSE organizes academic events (for example, the Distinguished Lecturer Series, STEM Education, Economics, and Equity (SEEE) Seminar Series, a Showcase of Mathematics Education, a Symposium to create a regional alliance of mathematics and science organizations to prepare the next generation of professionals in informal science and mathematics education) that enhance the intellectual work of the mathematics and science education community in and around San Diego.
- CRMSE created and now maintains a network of organizations and leaders of science and math education in Southern California.
- CRMSE supports a visiting scholars program that has included national and international researchers.
- CRMSE participates annually in the San Diego Science Festival.

Visit our web site at: http://crmse.sdsu.edu

(continued on from page 3)

Dr. Thomas Carey

Tom is a runner who enjoys running in San Diego in the winter, especially as compared to winter running in Canada! He has written and enjoys reading poetry. Back home in Canada, Tom and Judy live in a converted church (sleeping in a choir loft) in the historic center of a small town west of Toronto.
Professional Accomplishments

Note: CRMSE members in **bold** text. Current and former graduate students in *red* text.

**Nadine Bezuk** recently completed her service as a member of the California Commission on Teacher Credentialing’s Teaching Mathematics Advisory Panel.

**Elsa Feher** (a.k.a. Elsa Rosenvasser Feher) presented her new book, “Simetría”, at the National Book Fair in Buenos Aires Argentina. The book, written in Spanish, is part of a collection called Ciencia que Ladra (Science that Barks) written by scientists for laypeople, published in Buenos Aires by Editorial Siglo XXI. The topics in the book were originally researched by Feher in order to develop an interactive exhibition called “Symmetry, A Universe by Design” for the Reuben Fleet Science Center in San Diego, that traveled throughout North America in the 1990s.

“Simetría” is the second book Feher wrote for this collection. The first one, “Cielito Lindo”, based on the course on naked eye astronomy that Feher taught at SDSU, has sold close to 15,000 copies since its publication in 2004 and is now available in English translation (called “Out of the Blue Sky”) for free download from the web at www.outofaclearsky.blogspot.com.

**Kathleen Fisher** and **Kathy Williams** continue to work on developing, validating and publishing conceptual assessments, including a modified Osmosis and Diffusion Assessment (with Jennifer Lineback), a short form of the Conceptual Inventory of Natural Selection (with Dianne Anderson at PLNU), and an assessment of students’ understandings of mitosis and meiosis in collaboration with Mike Smith at Mercer University School of Medicine.

**Joanne Lobato** was elected to serve on the Executive Board of the Special Interest Group in Research in Mathematics Education (SIG/RME) of the American Educational Research Association, as the board member in charge of awards. In addition, she currently serves on the Board of Directors for Amity Institute, a non-profit international teacher exchange organization. And during Summer 2009, Andrew Izsak and **Joanne Lobato** supervised an eight-week research project in mathematics education, as part of the NSF-funded Research Experiences for Undergraduates and Teachers (REUT), housed in the Department of Mathematics and Statistics at SDSU. Five undergraduates were recruited from a national sample, and two local graduate students served as research assistants (Bridget Druken and Lauren Susoeff).

**Cynthia Park** received the Walter O. Mason, Jr. Award from the Council of Opportunity in Education (COE) at the National COE Annual Conference Banquet in September, 2010. This is the highest award granted by the COE and it acknowledges the recipients’ lifetime achievements on behalf of TRIO students and their families. COE established the Walter O. Mason, Jr. Award in 1988 to honor outstanding educational opportunity professionals who exemplify his sense of leadership and his ideals. Mr. Mason first worked with TRIO Programs as a Senior Program Officer with the U.S. Department of Health, Education and Welfare in Dallas, TX.

**Steve Reed** served as a member of the Program Committee for the 2010 Annual Meeting of the Cognitive Science Society.

**Kathy Williams** and Celeste Carter (NSF) were invited to organize and conduct the presentation and workshop **Scaling-Up Student Learning Through Research**, for the California State University Program for Education and Research in Biotechnology (CSUPERB) Biotechnology Symposium. Over 40 faculty and administrators participated. Santa Clara, CA, Jan 8, 2010.

**Kathy Williams** continues as a Regional Team Leader for the NSF-funded national dissemination Project FIRST IV that started in 2009. This NSF funded project uses five biological field stations across the U.S. as resources for promoting learner-centered science education in post-secondary institutions. This project supports pedagogical development in teaching and learning to postdoctoral scholars planning careers in academia or other educational roles, establishes a regional support network for post-doctoral scholars in teaching/learning, and works to advance teaching and scholarship in education. Kathy joins two colleagues from Evergreen State College and University of Oregon to lead the Pacific Coast team of 20 postdoctoral scholars.
Publications: 2010–Present

Note: CRMSE members in bold text. CRMSE associate members are in blue text. Current and former graduate students in red text.


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**A Sampling of CRMSE Projects**

*Note: CRMSE members in bold text. CRMSE associate members are in blue text. Current and former graduate students in red text.*


**Inquiry in Mathematics Teaching and Learning (IMTL),** June 2011–June 2013, directed by Janet Bowers and Nadine Bezuk in partnership with Cajon Valley Union School District, National School District, and the San Diego County Office of Education. The project focuses on English learners and newcomer students in grades 3 through 8, and includes teacher inquiry and building teacher leaders.

**Mathematics and Science Teacher Initiative (MSTI),** funded by the state of California and directed by Rafaela Santa Cruz, serves to increase the number of qualified mathematics and science teachers in San Diego County by providing support for students to enter the teacher-credential pipeline. In 2011, SDSU received a record number of single-subject mathematics teacher applications, due in large part to the efforts of MSTI.

**Springboard to Success,** Kathy Williams, Sasha Chizhik and Meredith Houle received a $102,470 supplement to the SDSU Noyce Award, originally directed by Kathleen Fisher, Nadine Bezuk and Cheryl Mason.

**Third Annual Conceptual Assessments in Biology Meeting,** Kathy Williams and Kathleen Fisher received funding (NSF RCN UBE-Incubator DBI-0957363) to organize and host the meeting. Dianne Anderson, MSED graduate now at Point Loma Nazarene University, was instrumental in making this event a very productive international event.
Recent Presentations

Note: CRMSE members in **bold** text. CRMSE associate members are in *blue* text. Current and former graduate students in *red* text.


**Bezuk, N. S. & Klass, S.** (2010, April). “Putting a face on X”: Connecting number sense with algebraic reasoning. Annual meeting of the National Council of Teachers of Mathematics, San Diego, CA.

**Bezuk, N. S. & Klass, S.** (2010, November). “Putting a face on X”: Algebraic reasoning for all students. Annual meeting of the Southern Section of the California Mathematics Council, Palm Springs, CA.

**Bowers, J. S., Bezuk, N. S., Aguilar, K. & Klass, S.** (2010, March). How can didactic objects be designed to support online learning of mathematics? Annual Conference of the Society for Information Technology and Teacher Education. San Diego, CA.


**Lineback, J.E. & Goldberg, F.** (2010, June). Using changes in framing to account for differences in a teacher’s classroom behavior. International Conference of the Learning Sciences (iCLS), Chicago, IL.


**Philipp, R., Jacobs, V., Lamb, L., & Siegfried, J.** (2010, April). Using video and student work focused on children’s thinking to help professional developers support K-3 teachers in transforming their teaching. Presented at the 2010 annual meeting of the National Council of Supervisors of Mathematics, San Diego, CA.


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STEM Education, Economics, and Equity (SEEE) Group Hosts Two Seminars

Along with collaborators from the University of San Diego, San Diego Economic Development Corporation, and the San Diego Science Alliance, CRMSE jointly hosted two SEEE Seminars during the 2010–2011 Academic Year. This initiative is designed to offer a series of seminars centered on presentations by economists, political scientists, educators, and leading thinkers who are experts on some of the “big questions” about how science, technology, engineering and mathematics (STEM) education relates to economics and social equity. The SEEE Seminar collaborators expect to host two events each academic year during the five-year period beginning Fall 2010. We hope that you will join us for future SEEE Seminars.

SEEE Seminar Reception, Spring 2011

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Eight Critical Issues About STEM Education and the Economy (October 2010)

Jeremy Roschelle
Director, Center for Technology in Learning, SRI International

Waiting for Superman? A Panel Discussion about Society and Education in the United States (April 2011)

Hugh “Bud” Mehan
Professor of Sociology
Director, UCSD’s Center for Research on Educational Equity, Access, and Teaching Excellence (CREATE)

Tad Parzen
Executive Vice President, Price Charities

Mildred Phillips
Principal
San Diego Metropolitan Regional Career and Technical High School

Larry Rosenstock
CEO and Founder
High Tech High Schools
CRMSE’s Speaker Series

CRMSE continues to host a robust series of speakers. This active community engages in conversations that often extend beyond the talk. See below for a list of speakers and the titles of the talks hosted in 2010–2011.

**Bissell, Joan and Dana Gharda.**
Expanding Learning Opportunities and Places: After-School STEM Experiences for Students, Summer Lab Research Experiences for Beginning Science and Math Teachers.

**Carey, Tom.**
A Knowledge Exchange Network in Developmental Math for Community College Faculty.

**Chizhik, Alexander and Becky Stephens.**
Service-Learning Course on Informal Learning of Mathematics and Science.

**Impelluso, Tom.**
Mechanisms: A Foundation for Machines, Math and Art.

**Jacobs, Vicki and Jennifer Lewis.**
Adventures with Japanese Lesson Study.

**Kapon, Shulamit.**
Public Lectures by Scientists on Contemporary Physics Topics: Characterizing Explanations, Instructional Use, and a Study of Learning.

**Konold, Cliff.**
Developing Statistical Perception.

**Larsen, Sean.**

**Levinas, Leonardo.**
The So-Called Crucial Experiments: Their Significant Role in Conceptual Change and Their Use in Teaching Science.

**Lewis, Jennifer.**
New Pedagogies for Learning the Interactive Work of Mathematics Teaching.

**Ogle, Laurence.**
Academic Work Ethics and Student Outcomes: Findings in a Global Perspective.

**Park, Cynthia et al.**
Service-Learning and Pathways to Careers in STEM Education

**Peterson, Matthew.**
A Visual Approach to Math Instruction.

**Simon, Beth.**
Preconceptions, Peer Instruction, and Attitudes: A Whirlwind Tour of Research in Computer Science Education.

**Unsworth, Sara.**
Cultural Differences in Concepts of Humans vs. Nature and Implications for Disparities in Science Education.

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**CRMSE’s Members Recognized for Achievements**

**Dr. Fred Goldberg** was recognized for his 25 years of outstanding service to SDSU!

**Karen Foehl** was honored as the recipient of the Outstanding Staff Member of the Year Award for CRMSE at the College of Sciences Reception.

**Dr. Joanne Lobato** received the Northrop Grumman Excellence in Teaching Award.

Joanne Lobato receives award from Northrop Grumman
CRMSE Events

Distinguished Lecturer Series
CRMSE hosted the 2010 Distinguished Lecturer event October 21–22 with Distinguished Lecturers Richard Noss and Celia Hoyles from the University of London. They presented *Mathematics at Work: A Need for New Mathematical Literacies* and consulted for CRMSE projects throughout their visit.

A Showcase of Math Education at SDSU
Jointly with Jim Herrick (Executive Director of the Alumni Association), CRMSE organized a showcase of math education at SDSU on February 25, 2010, featuring a lecture by mathematician John Allen Paulos, author of *Innumeracy* and *A Mathematician Reads the Newspaper*. Mathematics and Science Education Doctoral (MSED) students and CRMSE principal investigators displayed their projects at the new Parma Payne Goodall Alumni Center.

CRMSE 25th Anniversary Reception at the National Council of Teachers of Mathematics Conference
On April 20, 2010 at the San Diego Marriott Hotel and Resort, CRMSE was proud to celebrate 25 years of excellence in bringing together researchers and educators interested in studying the learning and teaching of mathematics and science.

CRMSE Symposium on Informal Math and Science Education
CRMSE hosted a symposium in May 2011 to kick off conversations about a Master of Arts program in Informal Mathematics and Science Education.

Congratulations to CRMSE’s Mathematics and Science Education Doctoral (MSED) Students
We will miss our graduating MSED students who have accepted positions around the country. Charles Hohensee has accepted a position with the University of Delaware. Megan Wawro has accepted a position with Virginia Tech. George Sweeney has accepted a position at Santa Ana Community College. We wish them well.


Osvaldo (Ovie) Soto has continued to teach high school part time while also working with Math for America, San Diego. Ovie was featured in the San Diego Union-Tribune on April 2, 2011, “SD teacher joins national push to improve math.”

We warmly welcome John Gruver and Casey Hawthorne who will join MSED in Fall 2011 and students Spencer Bagley, Bridget Druken, Brooke Ernest, Jess Ellis and Mike Fredenberg who joined MSED in Fall 2010.

Recent and Upcoming Dissertation Defense Dates:

- May 17, 2010  Osvaldo Soto
- June 1, 2011  Corinne Lardy
- June 17, 2011  Megan Wawro
- July 14, 2011  Charles Hohensee

Congratulations Docs!!
CRMSE’s Outreach Efforts

Below we provide a sampling of CRMSE’s Outreach Efforts.

**CRMSE Learning Lab and After-School Program**

A group of CRMSE scholars sought and were awarded a Presidential Leadership Fund Grant to support the development of a course that connects SDSU students with middle and high school students in the community. The scholars submitted a proposal for a new course, Informal Learning in Mathematics and Science. This is the first College of Sciences-wide course (as opposed to being hosted by a particular department). The students enrolled in the course spend a significant part of their class time developing fieldwork activities at SDSU’s Learning Lab and then engaging middle and high school students with these activities at the Jackie Robinson YMCA.

**Office of Pathways to Science, Technology, Engineering, and Mathematics (STEM) Careers in Education**

**Director, Cynthia Park**

The goal of this office is to apply for funds and coordinate efforts related to stimulating SDSU undergraduate students to pursue careers in math and science education.

**San Diego Science Festival and Science Expo**

The Third Annual San Diego Science Festival was held in March, 2011. Ricardo Nemirovsky and Bohdan Rhodehamel led the CRMSE booth entitled Prime Time With Spirographs: Gearing up to Prime Numbers, and Motion Detector Demonstrations. Donna Ross hosted a booth where Health Sciences High and Middle College students shared their favorite science activities.

**CRMSE Advisory Board**

The Fourth Annual Meeting of the CRMSE Local Advisory Board was held on April 29, 2011. CRMSE welcomes advisory members from the San Diego Community at large who have interests in mathematics and science education. Members of the Advisory Board include the following:

- **Mike Chapin**
  Chairman, Director, Geocon, Inc.

- **Chris Deckard,**
  Sr. Scientist/K–12 Outreach
  SPAWAR

- **Barbara Edwards**
  Executive Director, Math for America–San Diego

- **Robert Graeff**
  Superintendent, Ramona Unified School District

- **Bernard Greenspan**
  Registered Patent Agent, Greenspan IP Management

- **Nigella Hillgarth**
  Executive Director
  Birch Aquarium at Scripps

- **Tara Hutchinson**
  Department of Structural Engineering
  UCSD

- **Lionel (Skip) Meno**
  Special Assistant to the President for P–12 Education
  SDSU

- **Arthur Olson**
  Director
  Molecular Graphics Laboratory
  Scripps

**Shelley Petersen**
Principal
Ashley Falls School
Del Mar Union School District

**Ned Smith**
Consultant

**Nancy Taylor**
Executive Director
San Diego Science Alliance
K–12 Science Coordinator
San Diego County Office of Education

**Shirley Weber**
Chair, Department of Africana Studies
SDSU

**Bruce Westermo**
Assistant Dean, Student Affairs Engineering, SDSU

**CRMSE members attending included:**

- **Ricardo Nemirovsky**
  CRMSE Director,

- **Lisa Lamb**
  CRMSE Interim Associate Director

- **Alexander Chizhik**
  CRMSE Member

- **Becky Stephens**
  CRMSE Associate Member

- **Charles Hohensee**
  MSED student

- **Karen Foehl**
  CRMSE Office Manager

**Online CRMSE Discussion/Announcements Forum**

A new CRMSE Discussion Forum was established as a resource for announcements, journal articles, discussions, archive of documents, and so on. Contact Karen Foehl at kfoehl@sciences.sdsu.edu to join the forum.
Visiting Scholars

CRMSE opens its doors every year to visiting scholars who enrich the work of CRMSE faculty and provide opportunities for collaborations that extend nationally and internationally. In 2010, CRMSE welcomed:

Dr. Jennifer Lewis. She worked with Randy Philipp and others from the School of Teacher Education. Jenny is a mathematics educator from Wayne State University, who has worked with Deborah Ball on content issues.

Dr. Leonardo Levinas, from the National Council on Scientific and Technical Research, University of Buenos Aires. He visited Ricardo Nemirovsky and others.

Dr. Shulamit Kapon, from the Graduate School of Education at University of California Berkeley. She spent time with Fred Goldberg and his group.

Hortensia Soto-Johnson, PhD, Associate Professor of Mathematics in the School of Mathematical Sciences, at the University of Northern Colorado, joined Ricardo Nemirovsky and his team for several days.

Paul Sweeney, a school principal from Australia, visited Randy Philipp. During his visit, Paul visited several schools in the area.

Christine Tang Mei Yue and Agnes Fung Tak Fong, visited from the Education Bureau of Hong Kong and serve as curriculum development officers of the Mathematics Education Section, Curriculum Development Institute. They visited Randy Philipp and spoke with graduate students and faculty members about professional development opportunities for teachers in Hong Kong.

Nadine Bezuk Honored by the Association of Mathematics Teacher Educators

Thanks to Randy Philipp for sharing the information below.

On Thursday evening, January 27, 2011, Nadine Bezuk was honored by the Association of Mathematics Teacher Educators (AMTE). In recognition of Nadine’s extraordinary contributions to the organization over the past two decades, AMTE changed the name of the Excellence in Service Award to the Nadine Bezuk Excellence in Leadership and Service Award. Furthermore, the organization made a special inaugural award of the Nadine Bezuk Excellence in Leadership and Service award to Nadine Bezuk. This award came as a surprise to Nadine. Below is the text of what the AMTE president said about Nadine when granting the award. This was a special moment for Nadine, for AMTE, for her colleagues, and for SDSU.

Nadine Bezuk is the San Diego State University Qualcomm Professor of Mathematics Education. Nadine came from a small town near Pittsburgh, and she was the first in her family to go to college, getting an academic scholarship through the steel mill that her father worked at for 30 years. Nadine’s father even tried to learn some of the mathematics that Nadine would be studying at an early age so that he could help her in school. So one of her first models of a mathematics educator was her father!

Since 1987, when Nadine, her husband Steve, and their son, Peter, came to San Diego, Nadine has become an educational leader who has served extensively from the local to the national levels. Nadine has served as the chair of the School of Teacher Education and she is currently the Associate Director of SDSU’s Center for Research in Mathematics and Science Education.

Nadine’s professional work includes extensive university/community partnerships. One example is her service as co-director of the Professional Development Collaborative (PDC), which has partnered with seven school districts over the past decade on large professional development projects. This work has directly affected more than 2000 teachers. At the core of this work are two mathematics specialist certificates that Nadine helped design. For two years, elementary-school teachers engage in an integrated series of courses that deepen their knowledge of mathematics and mathematics teaching.

Her work at the state level is also extensive. Nadine is always willing to serve on panels, for example, most recently she served as part of the advisory panel that made recommendations for California’s recently adopted math specialist certificate and credential. She also helped to found the California Association of Mathematics Teacher Educators, or CAMTE, and she served as president.

And an example of her national service is her work for AMTE, for which she served as treasurer from 1994–1996, as president-elect and president from 1996–1999, as NCTM Representative starting in 1999, and as Executive Director for the last 10 years! She has now served 17 consecutive years on the AMTE board, attending meetings, participating in monthly calls, and being available on a day-to-day basis to help. Furthermore, those of us who have worked with her know that Nadine has one of the fastest e-mail guns in the West; no question remains unanswered long, that is, unless she is watching her beloved Pittsburgh Steelers!

Nadine Bezuk is thought of by those with whom she works as professional, thoughtful, dependable, efficient, collaborative, and perhaps most of all, kind and supportive. Those who work closely with her also realize that she can engage in complex, problem-solving discussions on various committees, while knitting!