### MST Times
Department of Mathematics, Science and Technology Newsletter

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<td><strong>Science Program Welcomes New Faculty this Fall</strong></td>
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<td>The Program in Science Education will be welcoming Christopher Emdin as a new member of its faculty this coming fall semester.</td>
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<td>Emdin recently completed his doctoral study at The Graduate Center (City University of New York) in Urban Education with a specialization in Science Mathematics and Technology. He earned his Masters degree in Natural Sciences from Rensselaer Polytechnic Institute and his Bachelors of Science Degree in Physical Anthropology, Biology and Chemistry from Lehman College. Emdin has been involved in multiple National Science Foundation funded research projects in the areas of mathematics and science education.</td>
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<td>Over the last 8 years, Emdin has taught middle school Mathematics and Physical Science as well as high school Physics and Chemistry. More recently, he served as science department chair at the Marie Curie School in the Bronx, which is partly funded by the Bill and Melina Gates Foundation.</td>
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<td>“The lessons that I have learned through my experiences as a student with these educators are the fodder for my passion and commitment to transforming science education into a discipline, process, and environment in which all students can share the wonder of, and success in, the study of physical and natural phenomena.”</td>
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<td>As a product of the New York City public school system, Emdin holds strong allegiances to teaching and learning in urban schools. He credits his journey into higher education to his interest in sound waves during a lesson in a seventh grade general science class. Stemming from his first attraction to the discipline, In his current research, Emdin studies ways the interests of students in a way that their inquisitiveness in science classrooms. Emdin states, “The lessons that I have learned through my experiences as a student with these educators are the fodder for my passion and commitment to transforming science education into a discipline, process, and environment in which all students can share the wonder of, and success in, the study of physical and natural phenomena.”</td>
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<td>“I have developed an intimate, reflexive, phenomenological, and experiential view of what learning and teaching science in urban settings entails”</td>
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<td>Having completed a vast majority of his education in urban, public institutions, Emdin believes that he has developed “an intimate, reflexive, Science, and Technology Department. Emdin gave an outstanding performance. Both students and faculty agree that Emdin’s experiences and scholarly interests in, phenomenological, and experiential view of what learning and teaching science in urban settings entails”.</td>
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<td>Emdin gave a talk at Teachers College to members of the Mathematics urban education can contribute to Teachers College and its urban education reform.</td>
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### Inside This Issue:

- Visiting Professor Jaime Sanchez
- President Fuhrman Inauguration
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“**What would it mean if we were to truly live up to our legacy at TC? What legacy would we, in turn, leave to those who follow us?**”

-Susan Fuhrman, President, TC
Visiting Professor, Jaime Sanchez

Notice a new face in the department? It is the face of Professor Jaime Sánchez, a Visiting Professor in the Science Program and Teachers College alumnus from the class of 1985. A native of Chile, Sánchez came to the United States in 1983. Under the supervision of Professor Anderson, Dr. Sánchez’s dissertation, entitled A Model of Biology Lesson Design Based on a Synthesis of Modern Learning Theory and Science Education Techniques, focused on his proposal for learning science based on contemporary learning theory and science education methods with special emphasis on integrating computers into science curriculum. After receiving his doctorate in just over two years in Science Education he returned to Chile to be named an Associate Professor at the University of Chile in its Department of Computer Science.

Sánchez has been a visiting professor at many colleges internationally including those in Africa, Asia, Europe, Latin America, and the United States. The US schools in which he was a Visiting Professor include TC, Cornell, Florida State University, Colorado School of Mines, Massachusetts Institute of Technology and USC. He has been a University Instructor at the Catholic University of Chile, a lecturer at the City University of New York, an Associate University Professor at the University of Chile and Universidad de Antofagasta, and a full time Professor at the Arturo Prat University.

Currently, Sánchez is working on the Virtual Worlds for Social Inclusion Project, where he is the Research Head. The main goal of this project is to help blind children develop cognition (problem solving) in their everyday lives through use of sound interfaces. Sánchez and his team of researchers hope to assist these children to exploit the use of the sense of hearing through audio-based virtual environments to construct cognition, and thus enrich their learning experiences further than the traditional use of Braille. Chile’s National Science Foundation funds the Chile-based project, which he has been working on for the past year.

Sánchez also works with the TC-based Biology Learning with Mobile Technology Project, funded by Microsoft. The project requires that he work with biologists, technologists, and Biology teachers to develop a game for mobile devices (i.e. pocket pc). The game focuses on Biology content and challenges students to solve problems on the main topic of Evolution.

In addition to his many research projects, Sánchez has been involved in both educational software and website design. He has authored seven books, written chapters in twelve other books, and has had an abundant amount of papers published and presented at conferences.

Professor Sánchez has received many awards. Some of them include the Global Junior Challenge Award presented by the European Commission and the City of Rome and the Stockholm Challenge Award presented by the European Commission and the City of Stockholm. Both awards were granted for his use of innovative technologies for helping children with special needs to learn and become more integrated and socially included. Sánchez was also bestowed the Outstanding Alumnus Award from our department.

He enjoys mountain biking in the Andes and Aconcagua Mountains and has a soft spot for the contemporary arts. He is married with three daughters.

Professor Akrami’s Documentary at Lincoln Center

Recently, CCTE Adjunct Associate Professor, Jamsheed Akrami’s new documentary was featured at the Lincoln Center. The film, entitled, The Lost Cinema, explores Iranian cinema before the revolution. Key issues surrounding the Iranian New Wave cinema, which is a film movement that blossomed in the late 1960s as a protest against a film industry dominated by the visually offensive uninformed domestic films and excessive exhibition of popular Hollywood and European imports, were addressed in the film. The film, through analysis of a series of filmmakers and scholars and films, sheds light on a significant trend of politically themed films made in the 1970s that contributed to the political awareness of the Iranian middle class. The screening of Dr. Akrami’s work occurred on Saturday, January 27th and Monday, January 29th. Akrami has other films including, Friendly Persuasion as well as a series entitled Storm Warnings: The films of Bahman Farmanara that were also showed at the Center.
Manu Kapur, CCTE Alumni

Dr Manu Kapur graduated in 2006 with an EdD in Instructional Technology and Media from Teachers College under Drs Kinzer, Anderson, McClintock, and Monroe. In route to his EdD, he also completed a Masters of Science in Applied Statistics from the Human Development department.

Manu’s research applies the laws of self-organization and complexity to study the ontology of individual and collective cognization in small- and large-scale collectives. In his doctoral work, he conceptualized the construct of Productive Failure and used it to explore the hidden efficacies in the seemingly failed effort of small-scale collectives solving ill-structured problems. For his work, Manu was one of the recipients of TC’s inaugural policy fellowship as well as the Spencer dissertation research and training grant.

Manu is now an Assistant Professor in the Learning Sciences and Technology (LST) Academic Group and a researcher at the Learning Sciences Lab (LSL) at the National Institute of Education (NIE) of Singapore. He is currently extending his work on productive failure in Singapore schools for which he has already won two research grants of more than $100,000. At the same time, Manu is developing a longer-term research program to computationally study the interactional dynamics of small- and large-scale collectives, e.g., online groups and societies, Wikipedia, communities of practice, etc.

TC’s 10th President Inaugurated

TC recently inaugurated its tenth president, and this time it was a woman. After holding the position as Dean of the Graduate School of Education at the University of Pennsylvania for over a decade, Susan Fuhrman, a TC alumna and renowned education researcher, became the school’s first female president on January 31, 2007. At the inauguration, Joel Klein, New York City Public Schools Chancellor, stated, “I think Susan Fuhrman understands the depth, challenge, importance of the role that Teachers College and other institutions need to play if we are to meet the challenge that faces this great nation. Susan, I am sure, will take us to an entirely different height”. Her keynote address manuscript, “Living Up to the Legacy of Teachers College” can be found on TC’s website at www.tc.edu/inauguration.

CCTE Brings Second Life to Life

Thanks to the help and support of Academic Computing and students in the program of Communication, Computing, and Technology Education, Teachers College has a presence in Second Life. Second Life, a virtual world where individuals, educational institutions, and businesses are finding interesting ways to socialize, communicate and provide educational opportunities, is not something new to CCTE students. Using Second Life as a platform, Professor Chuck Kinzer has been teaching a class about the possibilities of virtual worlds since 2006.

Teachers College Second Life is a place where members from the TC community and others can visit to explore a virtual environment, teach a class, visit with friends, practice their designing and building skills, and conduct research on and about virtual spaces. In addition to interested faculty, a growing number of our students have Second Life accounts and an interest in using this environment.

Currently, the TC “island” is under construction but contains development sandboxes where members of the TC community can try out their designing and building skills, a TC Café where informal meetings can occur, an amphitheater for larger meetings and presentations, and three classrooms where groups can meet in an instructional space.

Before trying to visit the TC island, it would be best to visit CIS-Academic Computing’s Website (http://www.tc.columbia.edu/cis/newsletter/feb07/article.htm) where there are instructions on using Second Life. A Second Life account will be needed in order to explore the site. These accounts, and the software that occupy them, are available at www.secondlife.com. CIS is planning some workshops on using Second Life, so if you are not use to these environments or have some trouble logging on, and feel like you would like to learn more, workshop dates and help hours will be circulated soon.
Stuart Weinberg, Program in Mathematics Instructor

Want to learn more about teaching mathematics to high school students? Stuart Weinberg is the person to know. Weinberg is the student teacher coordinator in the Mathematics Program.

Having taught in New York Public Schools for 37 years prior to joining the TC community, Weinberg’s knowledge of teaching mathematics is immense. His career began at Stuyvesant High School in the late 60s where he taught mathematics and held such Math Department, Computer leadership roles. He credits his running of a school to his time at he was fortunate to have “seen the mathematics has evolved”. He often reminisces about being in the classroom before calculators or technology were introduced to the educational system. Concurrently, while at Stuyvesant, Weinberg worked with a multitude of student teachers and held the position of Adjunct Lecturer at both Lehman and Baruch Colleges in NYC.

Weinberg views his career at TC as a rewarding and exciting opportunity in which he is able to help young people who are starting their own careers in the field. In addition to his services in the field of student teaching, Weinberg is an Instructor in the Program of Mathematics at TC. He taught his first course, Mathematics for Exceptional Students, in the summer of 2003.

Although his primary experience has been in the mathematics classroom there have been forays into other arenas that Weinberg ventured into. During the late 70s and 80s, as an international educator and student he spent two summers traveling to French-speaking countries to learn French, two summers teaching English as a second language in Israel and has also been on three study tours with the Mathematics Program. These study tours include Finland and Iceland, Mexico, Korea, and China. These trips are important in that Weinberg is eager to learn what works in other countries and how we can learn from others that have been successful. Not believing that he knows all, he states, “I need another 20 years to study all of the mathematics that I want to learn”.

Craig McCarron, Program in Mathematics Doctoral Student

McCar, right, working in Biloxi, Mississippi.

Hurricane Katrina, one of the deadliest hurricanes in the history of the United States, hit the Gulf Coast in August of 2005. The storm left thousands of Americans dead or homeless and damages estimated at $81.2 billion. Still today, over 18 months later, volunteers across the US continue in the rebuilding of cities such as New Orleans and Biloxi, Mississippi, cities which were nearly destroyed by the devastating storm. One of those volunteers is Teachers College’s very own Craig McCarron, a second-year Mathematics Education Program doctoral student.

When Craig learned that the city in which he traveled through frequently while a member of the US Army, Biloxi, Mississippi, was in ruins, he knew that he needed to help. Through the organization, Habitat for Humanity, McCarron worked to rebuild homes and businesses in the city. He was not one of those volunteers that did not get their hands dirty. He was involved in the actual building; sawing, hammering, the whole nine yards. McCarron enjoyed helping and “would love to go back and be able to stay for a month or so” to help even more.

While in Biloxi, being the educator that he is, Craig could not help but wonder how the students of the schools in the city were managing. He is interested in going back to the South to research the long-term education of students when disaster strikes. “How can we keep their education going in spite of these disasters?”

After obtaining his Masters in Mathematics Education from Harvard’s Graduate School of Education, McCarron worked in northern Indiana as a mathematics teacher. McCarron also gained experience working with college students as well during his time working as a mathematics instructor at Southern Indiana University for ten years.

Craig credits TC as being rooted in the realities of education and believes that instead of assuming that schools are perfect, TC faculty and students believe “there’s a real world school out there and we can make it better”.

Showing his athletic skills, in the Governors Island Swim (2006), McCarron received a creditable 7th place with a time of 43 minutes, 2 seconds. There were over 200 participates in the event!
American Education Research Association (AERA),
April 2007.
Chan, M., & Black, J. B. Learning About Systems with Text, Pictures and Learner-controlled Animation.
Crocco, M., Meier, E., & Kramer, J. Gender, Technology and the Social Studies: Outlook for a New Century.
Hah, Y., Lee, S-Y., & Lin, X. How Students’ Socio-Cultural Experiences Affect Their Preference for Computer Software.
Huang, J., & Kinzer, C. K. How Does Video Task-based Teaching Change Chinese High School Students’ EFL Classroom Interaction?: A Qualitative Study.
Lin, X. What American Educational Research Can learn from International Research and Practice (Presenter/panelist).
Lohnes, S. Situating the Net Gen: Exploring the Role of Technology in the Social Identity of College Students.
Lowes, S. Online Education’s Role in the Schools of Tomorrow. (Presenter/panelist)
Meier, E., Powell, K., & Hollands, F. Preparing Teachers to Teach Mathematics in Inclusion Classrooms: A Multimedia Case Based Approach.
Perin, D., Marri, A., Rivet, A., Crocco, M., Riccio, J., Chase, B. Preparing Preservice Science and Social Studies Teachers for Adolescent Literacy Challenges: Reports from Student-Teaching Classrooms.
Yan, W., & Lin, X. Exploring Factors Influencing Multiple-Perspective Learning.

Upcoming Conference Presentations

Kuo, M. How does an online game-based learning environment promote students’ intrinsic motivation for learning natural science and affect their learning outcomes?


Cocciolo, A. & Chae, H. Investigating Online Communities of Practice in a Web 2.0 Learning Environment.

Black, J. Imaginary Worlds and eLearning.

Society for Information Technology and Teacher Education (SITE), San Antonio, TX, March, 2007.


Fast Fact:
Researchers at CU say if the high school dropout rate were cut in half, $127,000 per graduate could be saved by taxpayers.

-Courtesy: CCTE Students working in iDesign Lab

February 11, 2007
CCTE introduces Online MA Program

For almost 25 years, the Program in Computing in Education at Teachers College has been offering an Intensive version of its M.A. program for teachers or others who work with schools, in which participants come to Teachers College in New York in the month of July. Beginning in the fall 2007 term, the program will begin offering a version of this program in which all courses will be offered online. This online version has been approved by the New York State Education Department. Like the Intensive Program, the online program will be a 32-credit M.A. degree program in Computing in Education for teachers or others working with schools. Besides core courses, students will be required to take 3 courses from other departments within Teachers College, all of which will also be offered online.

For inquiries about the program, or to request an application, please contact Seynabou Diop at the Center for Technology and School Change, telephone 212-678-4189, email Diop@tc.edu.

Newsletter Submissions

The Mathematics, Science, and Technology Department is looking for submissions for its next Department Newsletter. Some items that may be included in the Newsletter are the following:

- Adjunct Spotlights / Accomplishments
- Upcoming Program Events / Announcements
- Student Spotlights / Accomplishments
- Alum Spotlights / Accomplishments

This Newsletter can only be successful with your help! If you have any submissions, please submit them to Kenny Nienhusser at nienhusser@tc.edu.

Important Dates

April

16 Registration for the Summer Term for continuing students via web and touch-tone registration begins

23 Last day to hold the dissertation defense (Ed.D./Ph.D.) for May 16 award of degree

27 Last day to deposit Ed.D. dissertation and abstracts, which have been corrected in accordance with Dissertation Secretary's evaluation, and pay microfilm fee for May 16 award of degree.

May

8 End of Spring Term

9 Termination of occupancy in Teachers College residence halls for Spring Term 2007 for students not remaining for Summer Session A. Extensions granted for students remaining for Commencement

11 Last day to deposit Ph.D. dissertation with the Office of Doctoral Studies and the Graduate School of Arts and Sciences for the May 16 award of degree

15 Teachers College Master’s degrees Convocations

16 Conferring of degrees, 10:30 a.m.; Teachers College Doctoral degrees Convocation, 2:30 p.m.