

The Science Scene

◆◆Cal State East Bay◆◆

◆◆College of Science◆◆

*The Newsletter of the
College of Science
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Science Festival 2005

There was a 5-foot gopher snake in North Science 125 coiled around a teenage girl's waist. Children reached out to touch the snake, or hold the scorpion, or see an owl brought in by the Sulphur Creek Nature Center.

This was just one of the amazing sightings at Saturday's (4/16/05) Science Festival, sponsored by the College of Science. I understand that more than 2,500 people attended. Other things I saw: dancing dogs, cola taste tests, robots in action, chemistry 'magic' shows, Chinese mitten crabs and glowing bacteria. Perhaps the most amazing sight of all was hundreds of people excited about science and math. You would think that no one had ever before seen a tetrahedron constructed out of toothpicks and gumdrops.

Although my background is in the liberal arts, I found that this event had a profound impact on me. As the day wore on, I picked up the spirit of discovery. I saw a mixture of faculty members and staff, CSUEB students and members of the community coming together to "walk the talk" of science. Participating in the Science Festival reaffirmed my goal as an educator. Returning to

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Volunteer, Matthew Hubbard shows "math" tricks to eager students

Student Research Competition

The Cal State East Bay team won three first place awards and one second place honor at the 19th Annual CSU Research Competition held at CSU, Sacramento April 29 and 30, 2005. The College of Science was well represented at the competition, sending a contingent of student competitors and faculty advisors (some are pictured below).

Jessica Chevalier won first place in the graduate biological and agricultural sciences category for her research presentation on "Comparing Analogical and Self Mapping on Time Conceptualization." Jessica is finishing a

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*Some of our Student Research Competitors
From the left, Jessica Chevalier, Psychology, Julie Thompson, Biology, Bridget Mooney, Environmental Science, Michael Rajan, Chemistry, Michael Leung, Dean COS, Alan Monat, Associate Dean COS, Joy Andrews, Professor Chemistry and Biochemistry.*

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Bio-Feedback Sensors and Hands-Free Computing

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the Latin derivative, “educate” means “to lead,” or even more literally, “to lead out.” I have often thought of education as the process of leading students toward awareness of themselves and the world by encouraging curiosity and helping students learn to ask questions and think. I saw this on Saturday on a number of levels.

First, this was a showcase for professors to share a special interest with the public. The challenge: to communicate science into understandable language and images and to spark wonder in others. CSUEB student volunteers also played a major role in the Science Festival. Not only did they provide essential person-power to set up and organize the event, but many had to shift from being students to teachers. This was probably not what graduate student Wayne Chan originally signed up for — a computer lab with 20 terminals and 20 intrigued children playing with his master’s project (an interactive multimedia comic saga), but there it was. He and his project partner had to patiently explain the project and be technology coaches. I think it went pretty well for them. Dozens of community volunteers also came to educate the visitors about their centers and services. And College of Science staff



The Chemistry Magic Show Was “Sold Out” as Always



*Fish Printing with Professor Dixon
(2nd from right)*



Volunteer, Jeannine Darrow

worked above and beyond the call of duty to organize this event.

Of course, the most crucial part of the day was outreach to children and parents. I swear I heard a thought light bulb or two switch on in the Motion Madness event. Math professor Kevin Callahan, using a combination of easy explanation and friendly questions, helped children experience and understand the concept of sonar detection. He might have helped recruit a future physicist or engineer ... it all began in North Science 108.

I also talked to a lot of parents. Watching their kids get excited by the exhibits and games was contagious to them as well. Many parents found

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The Chemistry Magic show goes “hands-on”



Physics in Action



*Our Youngest
Chemistry Major*

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themselves transfixed by the count-the-triangles math riddle poster as part of the SCAA's Mathematical Mystery Tour event (the children figured out the puzzle or lost interest much earlier). It was nice to see families enjoying this experience together.

Other departments and disciplines can (and do) learn from the Science Festival model. In my previous job in New Mexico, I participated as a judge in the statewide high school English Olympiad. For those of us who love teaching writing, there are few sights in life as riveting as a roomful of enthusiastic 14-year-olds competing in a compare/contrast essay writing contest.

I know it took a huge effort for all involved to make this event succeed. But I think there is a lesson in this for all of us. To be effective educators, part of our job is community outreach, especially to kids and parents. Apologies to Hillary Clinton (and others who have used this true but tired cliché), but I believe it takes a Science Fair to raise a child.

-- Emily Nye is director of the Student Center for Academic Achievement at CSUEB (this article originally appeared in the Cal State East Bay newspaper, *The Pioneer*)

("Student Research" continued from page 1)

BS in psychology. Her faculty sponsors were **Marvin Lamb** (Psychology), **Eric Suess** (Statistics) and **Beth Chesterman** (Psychology).

Julie Thompson, working on a master's degree in biological sciences, won second place in the graduate biological and agricultural sciences category for her research on "Generation and Evaluation of Sequence Information for Cytochrome P450 from Several Avian Species." Her faculty sponsor was Caron Inouye.

A team of multimedia master's degree students - Steve Kearsley, Sasha Grueneberger, Linh Nguyen, Ivonne Proano, and Xavier Velazquez - won first place in the creative arts and design category for its multimedia project titled "Conspiritus." **Ray Mitchell** (Mathematics and Computer Science) was the faculty sponsor.

Statistics Research Day

Almost 150 people attended the 3rd Annual Statistics Research Day on Friday, April 22nd in the University Union. Despite a power outage that blanketed Hayward in the afternoon, the event was a great success. Cal State East Bay faculty and students gave presentations in the morning, followed by a lunch sponsored by Genentech. In the afternoon session, senior Genentech employees gave presentations discussing the role of statistics in industry. Some prepared PowerPoint presentations were rendered useless by the power outage, but the pre-

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More than 155 students participated in 22 categories. Each campus was allowed to participate in a maximum of 10 categories.

Other students representing the College of Science were Cal State East Bay were **Michael Rajan** (Chemistry graduate student) and **Bridget Mooney** (Environmental Science undergraduate).

Communication professor Sally Murphy worked with the students on their oral presentations. CSUEB faculty members Jim Petrillo (Art Department), **Ray Mitchell** (Computer Science), Janet Patterson (Communicative Sciences and Disorders), **Joy Andrews** (Chemistry and Biochemistry) accompanied their students to Sacramento along with Carl Bellone and Martha Wallace from the Office of Academic Programs and Graduate Studies.

(“Stat Research Day” continued from page 3)

senters were creative and the spectators appreciative, and a good and educational time was had by all. Perhaps most amazing of all, the presentations were still right on schedule when the power came back on after 1 ½ hours! Professor Bruce Trumbo later commented “Over the approximately 40 years I have been here, I have heard lots of presentations by statisticians from industry, but this group from Genentech was the best ever: bright people, interesting talks that students could understand, dozens of informal conversations with students between talks.”

If you’re interested in presenting at next year’s event, or want more information, please contact Professor Eric Suess at eric.suess@csueastbay.edu
--Jessica Chevalier

Math Awareness Week

Each year the Joint Policy Board for Mathematics sponsors Mathematics Awareness Month to recognize and promote the importance of mathematics. A theme is selected each year and university math departments are encouraged to perform activities in conjunction with the theme. This year the Cal State East Bay Mathematics department held a week of activities centered around the theme “Mathematics and the Cosmos.” There was a series of talks by Cal State East Bay faculty and a final special lecture by Robert Osserman, the Project Director of the Mathematical Sciences Research Institute. Some of the talks included, “Mathematics in Astronomy,” presented by **Gary Weston** (Physics), “Europa Mathematics,” presented by **Sarah Frey** (Mathematics and Computer Science) and “Meteorites - Samples from Creation,” presented by **Jeffery Seitz** (Geology).

Faculty Publications

Steve Benson (Biology) co-authored a paper with colleagues from UC Irvine Medical School and Kern Medical Center. The article, “Inhibition of Corneal Neovascularization by a Peroxisome Proliferator-Activated Receptor-Gamma Ligand,” was published in the journal *Experimental Eye Research* 80 (2005) 435-442.

Levent Ertaul (Mathematics and Computer Science) and Weimin Lu co-authored a paper, “ECC Based Threshold Cryptography for Secure Data Forwarding and Secure Key Exchange in MANET (I),” presented at the International Conference on Networking, IFIP NETWORKING 2005, at the University of Waterloo, May 2005 in Ontario, Canada.

Kara Gabriel (Psychology), M.M. Glavas, L. Ellis, and J. Weinberg, co-authored an article, “Postnatal Handling Does Not Normalize Hypothalamic Corticotropin-Releasing Factor mRNA Levels in Animals Prenatally Exposed to Ethanol,” published in the journal *Developmental Brain Research, E-pub* April 2005.

Don Gailey (Biology) co-authored an article with collaborators from the University of Glasgow in Scotland, “GAL4 Enhancer Trap Targeting of the Drosophila Sex Determination Gene Fruitless” was authored by Anthony Dornan, Donald Gailey, and Stephen Goodwin, and has been accepted for publication in the journal *GENESIS*.

Psychology and Statistics Colloquia Series

This Spring, the Psychology and Statistics Departments started a joint weekly colloquia series with presentations on topics relevant to each department. It has been well-attended by students, faculty, and staff from departments throughout the College of Science. The series will continue in Fall 2005. If you’re interested in presenting, please contact the appropriate Department Chair. Please join us to learn about the research your fellow students and professors are working on!

--Jessica Chevalier

Russ Merris (Mathematics and Computer Science) published an article, "Immanant Invariants of Graphs," which appeared in the journal *Linear Algebra and Its Applications*, vol. 401 (2005), pp 67-75.

Gretchen Reevy (Psychology) and Ann Lovell (M.A. Counseling) presented a poster, "Ethnic Differences in Sources and Types of Received Social Support," at the Western Psychological Association meeting in Portland, Oregon in April 2004.

Assim Sagahyoon (Mathematics and Computer Science) co-authored two papers for the Proceedings of the 2004 IEEE International Conference on Industrial Technology, in Tunisia, in December 2004. The first paper, "FPGA-Based Acquisition of Sensor Data," was co-authored with T. Alkhudairi. The second paper, "Design and Implementation of a Low Cost UAV Controller," was co-authored with M.A. Jarrah, A. Alali and M. Hadi.

◆ He authored a paper, "On the Use of HDLs in Modeling Communication Protocols," for the Proceedings of the International Conference on Computing, Communications and Control in Austin, Texas, August 2004.

◆ He co-authored two papers for the Proceedings of the 2004 IEEE Canadian Conference in Electrical & Computer Engineering in Ontario, Canada in May 2004. The first paper, "Impact of Cache Optimization Techniques on Energy Management," was co-authored with M. Karunaratne. The second paper, "An Advanced Library Format for ASIC Design," was co-authored with M. Karunaratne and A. Weerakody.

K. S. Burch, **Jason Singley** (Physics), J. Stephens, R. K. Kawakami, D. D. Awschalom, and D. N. Basov co-authored an article, "Infrared Survey of the Carrier Dynamics in III-V Digital Ferromagnetic Heterostructures," in the journal *Physical Review B* 71, 125340 (2005).

Professional Accomplishments

Joy Andrews (Chemistry and Biochemistry) gave a talk, "Mercury in the San Francisco Bay/Delta: the Chemistry of Fish Advisories and the Potential for Remediation," at San Francisco State University in March 2005.

◆ Dr. Andrews, who serves as vice-chair of the Stanford Synchrotron Radiation Lab User's Organization Executive Committee, visited Washington, DC in April 2005 along with chairs and vice-chairs of three other US synchrotrons to lobby for more funding for the physical sciences, especially from the Department of Energy.

Steve Benson (Biology) co-authored two poster presentations with biology graduate students **Chris Ho** and **Jaya Rajamani** and collaborators at UC San Francisco. The first, "Alpha-Lipoic Acid is a Dual PPAR Alpha/Gamma Activator: Potential for Treating Insulin Resistance, Pre-Diabetes and the Metabolic Syndrome," was presented at the Rachmiel Levine Diabetes and Obesity Symposium Advances in Diabetes Research: From Cell Biology to Cell Therapy. Los Angeles, CA October 6-9, 2004. The second presentation was entitled "Alpha-Lipoic Acid Ester with Enhanced Dual PPAR Alpha/Gamma Agonist with Antioxidant Activity: Potential for Treating Metabolic Syndrome." This was presented at the 2nd Annual World Congress on the Insulin Resistance Syndrome. Los Angeles in November 2004.

Richard Bozak (Chemistry and Biochemistry) and **Ronald Hicks** (Chemistry and Biochemistry) co-authored a poster with I. Ember (Department of Pathological Chemistry, University Medical School of Pecs, Hungary), "A Synthetic Curcumine Analogue: Chemopreventive or Genotoxic Effect?" The poster was presented at the annual meeting of the Society of Hungarian Molecular and Predictive Epidemiology in Budapest in April 2005.

◆ Dr. Bozak gave a lecture at Cal State Pomona in April 2005. The subject was "Noteworthy Compounds in Some Herbal Medicines." His lecture handouts were prepared by Ronald Hicks.

Dong-Won Choi (Psychology) presented a poster, "Cultural Variations in Reaction to Competitive Bargaining Offers," at the Annual Meeting of the Midwestern Psychological Association in Chicago in May 2005.

Mitchell Craig (Geological Sciences) and **Joy Andrews** (Chemistry) continue work associated with CICORE (Center for Integrative Coastal Observing, Research, and Education), funded by NOAA (National Oceanographic and Atmospheric Administration). The work they have completed to date has included particle size and trace metal analysis of sediment and water sampling from the San Francisco Bay-Delta.

Sarah Frey (Mathematics and Computer Science) gave a talk at the Division of Dynamical Astronomy 2005 Meeting in April in Santa Barbara. The talk was titled "Singularities in the Elastic Tidal Deformation of a Sphere with Variable Density and Elasticity." This work was co-authored with Terry Hurford and Richard Greenberg of the University of Arizona, Lunar and Planetary Laboratory.

Michael Groziak (Chemistry and Biochemistry) served as an ad-hoc member of the ADDT (AIDS Discovery and Developmental Therapeutics) NIH Study Section panel. The meeting was held in Palm Springs, California in March 2005.

Michael Hedrick (Biology) gave two invited talks at the recent XXXV International Congress of Physiological Sciences that was held in San Diego in April 2005. The first talk,

"Neuromodulation of the Dual Respiratory Oscillators in the Developing Amphibian Brainstem," was presented in a symposium at the conference on "the Phylogeny of Dual Respiratory Rhythm Generating Networks in Vertebrates." The second talk, "Juggling Teaching and Research at Home and Abroad" was presented in a symposium entitled "International Collaboration: Science Knows No Boundaries."

Jaimie Kwon (Statistics) received an award from Siemens Technology-to-Business Center LLC for his project, "Consulting Services for Siemens Technology-to-Business Center LLC."

Rich Luibrand (Chemistry and Biochemistry) was an invited speaker at the American Chemical Society National Meeting in San Diego in March 2005. His presentation, "Molecular Modeling: a Vital Component of the Organic Chemistry Laboratory," was part of the Hot Topics in Organic Chemistry session.

Sue Opp (Biology), **Joe Zermeño** (MS CSUEB), **Bridget Mooney** (CSUEB Biology student) along with collaborators from UC Riverside, Mark Robertson, Hannah Nadel and Marshall Johnson gave an invited talk "Dispersal of Olive Fly in Host and Nonhost Orchards," at the 8th Exotic Fruit Fly Symposium in Riverside, California sponsored by the UC Division of Agriculture and Natural Resources, USDA-ARS, USDA-APHIS, California Dept of Food and Agriculture in March 2005.

Continued Funding for MBRS SCORE

(Minority Biomedical Research Support / Support of Continuous Research Excellence)

Maria Nieto (Biology) received an award from the National Institutes of Health for her continuing project, "CSUEB MBRS SCORE."

Kara Gabriel (Psychology) received an award from the National Institutes of Health, Minority Biomedical Research Support SCORE Program for her sub-project, "Effects of Ethanol on Anxiety in Adolescent Mice."

Chul-Hyun Kim (Chemistry and Biochemistry) received an award from the National Institutes of Health, Minority Biomedical Research Support SCORE Program for his sub-project, "Structural Studies on Functionally Important Viral RNA Motifs."

Michael Hedrick (Biology) received an award from the National Institutes of Health, Minority Biomedical Research Support SCORE Program for his sub-project, "Cellular Mechanisms for Breathing and Hypoxia Tolerance."

Students News

Derek Calhoon has received a Fulbright Scholarship to attend the University of Amsterdam 2005-06, where he will obtain a Master's Degree in Social Sciences with a track in Social Theory and Public Affairs. Derek aspires to a career in veterinary science and graduates this June with a B.S. in Biological Sciences, summa cum laude. Special congratulations from all the members of the Gailey lab, where Derek has worked the last two years.

Jessica Chevalier (Psychology undergraduate) was accepted to a Ph.D. program in Cognitive Psychology at UC Santa Cruz (which she happily accepted!)

Katja Hofmann (Computer Science graduate student) co-authored a paper with **Hilary Holz** (Mathematics and Computer Science), "Subsymbolic User Modeling in Adaptive Hypermedia," will be presented as a Young Research Track paper at the AIED (Artificial Intelligence in Education) International Conference 2005 in July in Amsterdam.

Mindy Kimball (M.S. student, Geological Sciences) gave an oral presentation at the annual meeting of the Cordilleran Section, Geological Society of America (a joint meeting along with the annual meeting of the Pacific Section, American Association of Petroleum Geologists) in April 2005. The talk, "Seismic Refraction at Tyson's Lagoon, Southern Hayward Fault," was co-authored by **Samuel Heller** (MS student, Geological Sciences), **Mitchell Craig** (Geological Sciences), and James Lienkaemper (U.S. Geological Survey).

2005 Statistics Scholarship Recipients	
Heebok Park Scholarship	Weimei Cai
George J. Resnikoff Memorial Scholarship	Xiao (Winnie) Li
Justin Randle Memorial Scholarship	Shuhei Okumura
Statistics Department Scholarship	Weisu Tang

ACS Undergraduate Research Conference

There was terrific turnout from Cal State East Bay at the American Chemical Society Undergraduate Research Conference held at Mills College Saturday, April 30, 2005. Five of our students gave talks, and several others presented posters.



Front row, from left: Professor Joy Andrews, Jamie Kulp*, Rebecca Guzikowsky, Adel Lawal**, Tara Arends*, Chi Mai** 2nd row: Loi Luu*, Nicole Rivera**, Professor Anne Kotchevar, Peter Traum**, Jeannine Darrow*, Jogege Coronel**, Miguel Mendoza**, Professor Chul Kim Back row: Matthew Houlahan*, William Massey**, Professor Michael Groziak, Delkarlton Brown

* students who gave oral presentations

**students who presented posters

Other students who were co-authors on posters but were not present at the meeting: Alicia Gutierrez, Jesus Rangel, Valerie Gomez, Jorge Rocha, Junaid Rahman, Carson Hackett, Justin Laurence



Kevin Brown and Leann Christianson recently welcomed their new daughter **Sylvie Elise** to the family. Sylvie was born March 18, 2004 in Moscow, Russia.

The College of Science welcomes **William Chen** to the Computer Support Group. William most recently worked in private industry, before that he worked as a computer technician for the combined San Jose State University/San Jose Public Library. He graduated from San Jose State University with a BS in Computer Engineering.



Last fall the Psychology Department added, **Nicole Huber**, a new Administrative Support Assistant to the office. Nicole has been comfortable in her new job from day one, since she recently finished her BA in Psychology right here at Cal State East Bay.



Stephanie Matsuda is the new Administrative Support Coordinator in the Department of Nursing and Health Sciences. Stephanie has worked on campus for 12 years. First in Enrollment Services, the Geography Department and most recently in the International Program in the College of Business and Economics.

Stats on Statistics

Twenty-six students have signed up to take the Statistics MS exam in Spring Quarter 2005. We anticipate that approximately 32 students will receive their MS degrees in Statistics during the 2004-05 academic year—by far the largest number of graduates we have ever produced.

--Ann Cambra (Statistics Department Coordinator)

Community Math Workshops for Adults

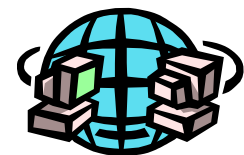
Learning math can be an enjoyable and rewarding experience. Come join us and tell your family, friends, and co-workers about these classes. Classes are offered this summer through Cal State East Bay, San Leandro Adult School and Fremont Adult School. Please email: math_workshops@yahoo.com for details. --Vanessa Mason (Math and Computer Science)

Dates to Remember



Saturday, June 11	Commencement
Monday, June 20	Summer Quarter Begins
Monday, July 4	Independence Day University Closed
August 29 - September 4th	Summer Quarter Finals
Monday, September 5	Labor Day University Closed
Thursday, September 22	First Day of Class Fall Quarter

The online version of the Science Scene can be seen at www.sci.csueastbay.edu



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