



College of Natural Sciences and Mathematics

Highlights

Dean's Message and Highlights ...



Dear Faculty and Staff,

This semester seems to have zipped by and here we

are way past Thanksgiving and finishing finals week. It's been a very busy time for all, but for our students, it has also been a time of real achievement. Our students are involved in many activities such as research, internships, student government, athletics, and peer mentoring that greatly add to their overall educational experience and personal growth while at CSULB. We are pleased to highlight

some of those achievements in this issue of the College *Highlights*. Congratulations to those who have won awards! We are proud of all our students.

A special thanks also to all of you who work with the students and help them achieve their goals and successes.

Here's to a great end of the semester and a wonderful holiday season for all. I enjoyed

seeing so many of you at our College Holiday Celebration last Friday.

Laura Kingsford, Ph.D.

Dean

College of Natural Sciences and Mathematics

California State University, Long Beach

Annual Biomedical Research Conference for Minority Students (ABRCMS)

Recognition as "Outstanding" was earned by three of the 13 presentations made by CNSM students who presented at the Annual Biomedical Research Conference for Minority Students (ABRCMS) in Orlando, Florida in November. Marc

Quijano was recognized for his oral presentation, and Christian Aguilera and Theresa Austria were recognized for their poster presentations.

The ABRCMS is the largest multidisciplinary student conference in the United States. Each year, the conference attracts approximately 2,600 individuals, including 1,650 undergraduate students, 300 graduate students/postdoctoral scientists and 750 faculty and administrators. This year, the ABRCMS selected 1200 submissions for

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Students and Faculty at the awards banquet: first row (seated, from left to right): Theresa Austria, Henry Valli, Meredith Flores, Edsel Abud, Marc Quijano. Second row: Daisy Johnson, Melina Juarez, Jessica Ruiz (LBCC), Johana Rodriguez, Tami Gonzalez, Denisse Moreno, Maria Rios (Cerritos College). Third Row: Roger Bauer, Thara Sam, Balwant Khatra, Marco Lopez, Henry Fung, Tim Feliciano, Christian Aguilera, and Brenda Velis.

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Geology goes to Sea (contributed by Richard Behl)



On the deck of the R/V Meville off the coast of Santa Barbara, from left to right: Richard Behl, with grad students Courtney Marshall, Carlye Peterson, Sara Afshar, Diane Escobedo, and Greg DeHoogh.

Beneath 100 meters of water, just offshore of Santa Barbara, may lie the best paleoclimate record in the world...if only we could reach it.

This November, five grad students from the Department of Geological Sciences accompanied Professor Rick Behl on a 12-day, NSF-funded expedition to the Santa Barbara Channel that is crucial to an international project to extend the highest-resolution Quaternary paleoclimate record in the world a million and a half years farther back in time. Thirty-three scientists, technicians, and students set sail from San Diego on November 8, onboard the R/V Melville, a 279' research vessel operated by the Scripps Institution of Oceanography. The crew consisted of scientists and students from CSULB, UC San Diego, UC Davis, UC Santa Barbara, University College London, Oregon State University, University of Michigan, Indiana University, Stanford, the US Geological Survey, and private industry. Their aim was to acquire valuable sediment cores and subsurface seismic profiles from targeted areas in the Santa Barbara Channel that held the potential of revealing secrets to a major interval of climate change called the "Mid-Pleistocene Transition", between 0.8 and 1.2 million years ago.

CSULB was ably represented by Geology grad students Diane Escobedo, Carlye Peter-

son, Sara Afshar, Courtney Marshall, and Greg DeHoogh. They worked around the clock, mostly on midnight-to-noon or noon-to-midnight shifts. The students played critical roles in selection of core sites, core handling, description, sampling, and analysis, positioning and navigation for acquisition of seismic lines, seismic data processing and subsurface interpretation. They (plus Behl)

formed the largest contingent from any university and they made a strong impression on the other scientists. Their interactions have already led to new research collaborations - particularly with UCSB - in which our students will work on new or related NSF-funded projects or will have UCSB professors on their thesis committees. This expedition was funded by the third in a series of collaborative NSF grants to open "windows" into the past to study the nature of abrupt climate change, in which the California coast repeatedly switched from wet, glacial chill to arid, warm climates in less than an undergraduate's lifetime.

Aside from the science, the expedition was memorable in many ways. The first day out was into gale-force winds and 15-20' swell, and even the most experienced sea-dog spent far too much time hanging over the side rails of the Melville. The rest of the cruise was characterized by perfect, swimming-pool like conditions, flatter than a lake, but with hundreds of dolphins, whales, sea lions, and birds to distract us. Even the firestorms on land made themselves present as we watched the Santa Barbara/Montecito "tea" fire burn down the mountains into the beautiful homes in the foothills, followed by surreal, smokey, pastel-colored sunrises and sunsets over the ocean.

Science Ed Makes the Grade



Caroline Potter accepts award from CSTA

Caroline Potter was the 2008 recipient of the California Science Teachers Association Future Science Teacher Award. Caroline received her bachelors, multiple subject and introductory science credentials from CSULB. She is now teaching 3rd grade in Pasadena. Caroline is the fourth CSULB student in as many years to win this award.

Several graduate students (and recent alumni) from Science Education have papers accepted for presentation at the National Association of Research in Science Teaching (NARST) and the American Educational Research Association (AERA). These are top venues for presenting science education research. Both conferences are in April 2009.

Shezhad Bhojani^{*} & Laura Henriques. *Examining Relationships Between Expert and Pre-service Teachers at a Summer Science Camp.* NARST

Padmini Kishore^{*} & James Kisiel. *High school Students' Awareness and Misconceptions Related to Solar Cells.* NARST

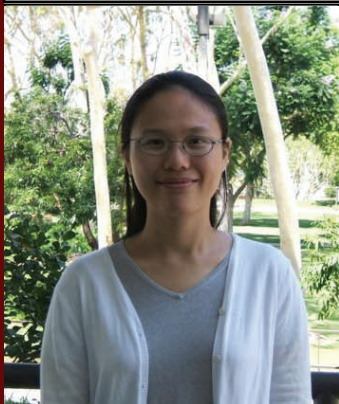
Susan Hunt^{*} & Susan Gomez-Zwiep. *The relationship between mathematics achievement and chemistry achievement in a low-performing, urban high school.* NARST

Ron Rita^{*} & Catherine Martin-Dunlop. *Perceptions of the Learning Environment and Associations with Achievement of Gifted and Non-Gifted Biology Students.* AERA

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Highlighting New Faces

Welcome to *Highlighting New Faces* – our way of introducing you to new people in the college. We hope that this will give you a little insight into the person along with his/her professional background and achievements. At the very least, it will give you something to talk about when you introduce yourself to the individual.



**Chung-min Lee, Assistant Professor,
Applied Mathematics**

Up for “New Faces” this time is Dr. Chung-min Lee. Chung-min is maybe not quite so new as she joined the faculty here in the fall of 2007. However, Chung-min is in the Department of Mathematics and Statistics, so it’s

likely that many of the science faculty members have not met her yet. Chung-min completed her Ph.D. degree in mathematics from Indiana University Bloomington in the summer just before starting her appointment as an Assistant Professor here at CSULB. She has B.S. and M.S. degrees in mathematics from National Taiwan University. She is particularly interested in science and engineering applications of partial differential equations and the numerical methods needed. Her current research focuses on optical phase reconstruction problems using intensities modeled by partial differential equations.

Chung-min says she enjoys learning about other fields and discussing problems with people outside of the mathematics department. As an undergraduate, she participated in a research project in a Micro-Electro-Mechanical System Lab and also did a semester project with a geology student on the weathering of limestone. As a graduate student, she attended an Industrial Mathematical and Statistical Modeling Workshop where she worked with graduate students from various areas in mathematics and studied a problem related to biological interaction networks for drug discovery. Thus, she enjoys working on various interdisciplinary

problems and is someone the scientists should get to know.

Chung-min grew up in Taiwan. After she finished her bachelor's and master's degrees, she came to the United States in 2001 for her Ph.D. work. She spent six years in Bloomington, Indiana and studied partial differential equations with applications in optics under the direction of Professor Jacob Rubinstein. She met her husband, Joshua, in the math department there. Joshua studied mathematical logic with applications to game theory and computer security and also has a Ph.D. in Mathematics.

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Chemistry Students in the Mezyk RadKEM Laboratory (Contributed by Stephen Mezyk)

This was another extremely successful year for the Mezyk RadKEM laboratory in the Chemistry and Biochemistry Department at CSULB with a research group of 12 undergraduates and two Master's students continuing to enjoy success. Some notable highlights include:



Devin Doud

Devin Doud (Biochemistry major) enjoyed a fantastic research year starting with receiving the Beckman Scholars Program scholarship last June. His research on understanding of the role of ubiquitous organic

matter in water undergoing purification resulted in publication of two journal manuscripts, 5 extended conference abstracts, and 6 conference presentations.



Katy Swancutt

Katy Swancutt (Biology major) continued her research on the free radical chemistry of platinum-containing anti-cancer drugs, and also started two new research projects. She received the inaugural undergraduate research scholarship personal donation from Ken

Ishida to help support her work, and was also able to get one paper published in a peer-reviewed journal, three extended conference abstracts, and 5 conference presentations including an oral presentation at the American Chemical Society meeting in Philadelphia in August.



Michelle Dail

Michelle Dail received the Californian Target Specialty Products Inc. scholarship, a CSULB Women and Philanthropy award, and a 2008 Provost's Summer Stipend to support

her research efforts on elucidating the hydroxyl radical oxidation chemistry of β -lactam antibiotics under various conditions. Her work was presented at three conferences, including one oral presentation by herself also at the American Chemical Society meeting in Philadelphia this past August.

This year, Thomas Neubauer started his Master's research with me on the radical-induced degradation of sulfa antibiotics in wastewater



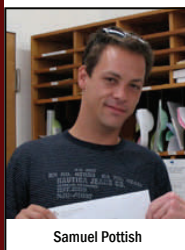
Thomas Neubauer

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Accolades for Students in Physics and Astronomy

This has been another highly successful year of research and scholarships for students in the Physics Department. Three CSULB physics students, Samuel Pottish, Brendon Villegas, and Benjamin Carter presented their work at the Annual meeting of the American Physics Society (APS) held in October at CSU Dominguez Hills.

Samuel Pottish presented the results of his research completed at the Mineral Physics Institute Summer Scholars Program (REU) this past summer at Stony Brook University, New York, *Potassium Carbonate (K₂CO₃) Fusion Curve Re-examined: New Experiments at 5GPa*, (Dr. Beoshang Li— Stony Brook faculty advisor). He also presented at the December Meeting of the American Geophysical Union in San Francisco. In addition to support provided by his participation in summer research, Samuel was one of two Physics students to receive the Philip Ord Johnson Scholarship, which is awarded to CSULB graduate or undergraduate men and women who have demonstrated academic achievement in physics and mathematics. At CSULB, Samuel works with Chuhee Kwon in her lab.



Samuel Pottish

Brendon Villegas presented *The Optimization and Characterization of Magnesium Diboride Thin Films* (Dr. Jiyeong Gu - faculty advisor, Physics and Astronomy). Brendon was one of the three Physics students who received the 2008 Provost's Summer Stipend Award for collaborations with faculty mentors.

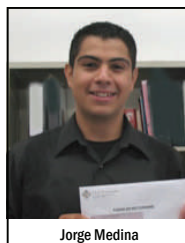
The third CSULB presentation at the APS Annual Meeting was made by Benjamin Carter, working independently, he presented *Helicoseir Perturbation Theory*.

Two other physics students were also recipients of the 2008 Provost's Summer Stipend Award: Heather Stirewalt, undergraduate, was awarded the stipend to work with Dr. Alfred Leung, and Arnulfo Gonzalez, graduate student, conducted research with Dr. Christian Bracher.



Heather Stirewalt

Other scholarships won by physics students include Jorge Medina, a junior Physics Major who was awarded the 2008-2009 *American Physical Society Scholarship for Minority Undergraduate Physics Majors*, a \$2000 award. This is a nationally competitive scholarship. He also received one of two Richard and Florence Scalettar Scholarships, which are awarded to CSULB undergraduate men and women of exceptional academic achievement in physics and mathematics. The scholarships provide \$1,000 annually, and honor the memories of California State Long Beach Physics Professor Richard Scalettar and his wife, mathematics teacher, Florence Scalettar. A second Scalettar Scholarship was won by Joanna Dokas, a senior Physics major. The highly competitive Osher Re-entry Scholarship was awarded to David Thomas, a Physics minor with a major in Computer Engineering.



Jorge Medina



Joanna Dokas

Jesse Burgess was the second CSULB 2008 recipient of the Philip Ord Johnson Scholarship for academic achievement in physics, and Ariel Amberden was recognized for her academic achievement while working to support her education with the John and Terry Milligan Scholarship, a scholarship started by John Milligan (CSULB Physics alumnus, 1982) to assist working undergraduate students majors in Physics. Finally, the Physics Department Scholarship Fund awarded two scholarships: one to Heather Stirewalt and the other to Angela Marotta in recognition of their demonstrated potential for further study and compiled strong record of achievement in Physics academic, laboratory, and/or theoretical work.



Jesse Burgess



Ariel Amberden



Angela Marotta

NEW FACES, Continued

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In their spare time, Chung-min and Joshua like ballroom dancing, cooking, hiking, biking and non-competitive Frisbee. Since they moved to Long Beach, they have been enjoying the culinary variety of Los Angeles. During summer and winter breaks, they often travel to Taiwan and Wisconsin to visit their families. When in Taiwan, they like to visit national parks and enjoy all kinds of delicious food. In the United States, they like traveling to New England, northern California and the national parks. Chung-min also likes the Midwest for its distinctive seasons and for the reason that it is her 'home town' in the U.S. Joshua will do postdoctoral work in Iceland next year. While they will miss each other, Chung-min is also excited about the opportunity to visit Iceland!

Mezyk RadKEM Laboratory, Continued

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systems. He was a recipient of the 2008 Provost's Summer Stipend Program, which allowed him to perform research at the University of Notre Dame, and he was also able to present his work at two major conferences: the Gordon Conference on Radiation Chemistry in July, and the UNESCO sponsored Water conference in December 2008.

Edsel Abud was awarded a CSULB Women and Philanthropy scholarship, supporting his studies of mixed alkyl/aryl nitrosamine species in water. He also had four conference presentations this year, notably an oral presentation at the ABRCMS Orlando meeting which he attended with another one of my students, Tim Feliciano. These two students had their research with me supported by MARC and RISE funding, respectively.

The SAS Center Highlights Student Involvement

JAMES L. JENSEN SAS CENTER (STUDENT ACCESS TO SCIENCE)

This fall was an incredibly busy semester for us in the SAS Center, as we worked with the increased student population that has been seen all over campus. Most of our programs saw a rise in student participation. In addition to providing a regular study space for students in our center, our staff advised approximately 450 freshmen in our freshman mandatory advising workshops; this is up from the previous year's total of 375. This number includes both declared majors, as well as students intending to change to CNSM majors. We have witnessed a 250% increase in the use of peer tutoring from last fall to this fall. We have also seen a participation increase at the various events we sponsor, including our most recent: the Holiday Potluck Mixer on December 5. Approximately 50 students, staff, and faculty attended. Highlighted here are the three win-



Winners of the 2008 Gingerbread House Speed-Decorating contest: Janet, Nadilah, and Martha.

ners of our Holiday Mixer Gingerbread House Speed-Decorating contest: Janet, Nadilah, and Martha, all CNSM upper level students. The SAS Center thanks all the staff and faculty who supported us this semester with their referrals, suggestions, and participation in our various events and programs.

Annual Biomedical Research Conference for Minority Students (ABRCMS), Continued

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scientific poster presentations and 80 as oral presentations. A total of 156 awards were made for 10 different research interest areas. CSULB received 2 (or 1.5%) of the 136 awards for outstanding posters and 1 (or 5%) of 20 awards for outstanding oral presentations.

In all, 11 CSULB students and two Community college student participants from this past summer's Bridges to the Baccalaureate program presented faculty-mentored research at ABRCMS. The presentations were sharp, polished, and well received. The papers and posters presented are listed with the inclusion of the faculty mentor (all papers were peer reviewed):

Marc Quijano - "*The Relationship between Tectonic Plate Activity and Genetic Variability in the Western Fence Lizard, *Sceloporus occidentalis**" (Dr. James Archie - faculty research adviser, Biological Sciences). **Received recognition as Outstanding in the Molecular Biological Sciences by the ABRCMS Conference.**

Christian Aguilera - "*ENV6, a Constitutively Expressed Yeast Gene Involved in Vacuolar Functions*" (Dr. Editte Gharakhanian - faculty research adviser, Biological Sciences). **Received recognition as Outstanding in the Microbiological Sciences by the ABRCMS Conference.**

Theresa Austria - "*Aglycosylated Antimannan Antibody M1ig1 has a Reduced Ability to Mediate Complement Activation and Phagocytosis*" (Dr. Mason Zhang - faculty research adviser, Biological Sciences). **Received recognition as Outstanding in the Molecular Biological Sciences by the ABRCMS Conference.**

Edsel Abud - "*Radical Chemistry of Aliphatic-Aromatic Nitrosamines in Water as Model Compounds for Tobacco-Specific Carcinogens*" (Dr. Stephen Mezyk - faculty research adviser, Chemistry and Biochemistry).

Timothy Feliciano - "*Free Radical Chemistry of Anesthetics in Water: Investigating the Toxicity of Degradation Products*" (Dr. Stephen Mezyk - faculty research adviser, Chemistry and Biochemistry).

Meredith Flores, Stephan Meister, and Selina Bopp - "*Knock-out of Essential Liver Stage *P. yoelli* Genes*" (Dr. Elizabeth Winzeler - faculty research adviser, The Scripps Research Laboratory).

Tami Gonzalez, Jesus Reyes, and Mark Drawbridge - "*Stress-induced Alterations in Plasma Cortisol Concentrations in an Economically Important Vertebrate Model System*" (Dr. Kevin Kelley - faculty research adviser, Biological Sciences).

Maria Rios (Cerritos College) - "*Patterns of Genetic Differentiation among Mountaintop Populations of Western Fence Lizard (*Sceloporus occidentalis*) Do Not Support a Post-Pleistocene Range Expansion*" (Dr. James Archie - faculty research adviser, Biological Sciences).

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Science Ed, Continued

Amy Edmundson* (MS, Science Education - Elementary Option, 2006) is an invited panelist at the National Association of Research in Science Teaching conference. She and her colleagues will be discussing their successes with a California Math/Science Partnership grant.

Tonya Mandl* (MS, Science Education - Elementary Option, 2008) helped write a successful \$1.725 M grant for LAUSD schools from California Instructional School Garden Program, AB1535 grant. She coordinates the program. She is also the founder and chair of the California School Garden Network, LA chapter.

Padmini Kishore* (MS, Science Education - Secondary Option, 2008) was invited to present findings from her thesis and the impact of her A+ BP Energy grant project at the Green California Schools Summit in Anaheim, December 2008.



From left to right, Science Education graduate students Marissa Whitmore, Nancy Ton, Padmini Kishore, Department Chair Laura Henriques, and Jill Grace at the 2008 NSTA CSULB Gathering in Boston, MA in March 2008. (picture taken by Marc Berkstreser).

* Science Education MS student/alum

CNSM Notables: President's List & Dean's List

The College and the University are pleased to recognize academic achievement by its students on an ongoing basis through the honor of being named to the President's List or the Dean's List each semester. The requirements to be included in the list are not only grade point average, but total unit load (12 units) for the semester, or a cumulative 12 units earned for the academic year for inclusion in the Spring Lists. The President's List honors students earning a GPA of 3.75–4.0; the Dean's List honors students earning 3.5–3.74. It is especially noteworthy that more CNSM majors are honored on the President's List than the Dean's List. Congratulations to the following President's List and Dean's Lists Students from the Spring 2008 semester.

President's List

• **Biology BS** Aira Aguas, Temitope Ajagbe, Andrea Balogh, Dean Bui, Anastasya Carbon, Devin Caster, Rochelle Chua, Ngoc-Khanh Cong Nguyen, Angela Dickens, Sergio Duenas, Erik Duque, Lorenzo Escobar, Jordan Fuller, Courtney Gagnon, Hector Gomez, Kimberly Helm, Marissa Hernandez, Leah Hough, Tien Huynh, Sarah Kim, Leeann Korprapun, Anh La, Delain Landrum, Kelly Laughlin-Sloss, Erin Liang, Daisy Linares, Juan Maciel, Myrna Makari, Chelsea McKinley, Johannes Meyen, Bryan Nguyen, Julie Nguyen, Kimberly Nguyen, Michelle Nguyen, Canh Roger Pham, Ravuth Pum, Samantha Rhine, Kimberly Rickman, Leah Sloan, Bucky Soliman, Saori Taniguchi, Christina Thabit, Martin Vignovich, Ryan Welsh, Cassandra Wright, Chamroeuon Yann, Sikeat Yip, Karen Yu • **Biology-Education BS** Charlene Apelo, Nichole Pimentel, • **Biology-Botany BS** Katherine Gallagher • **Biology-Cell & Molecular BS** Ilva Cabrera, Michelle Dail, Geraldine Duru, Lori Glenwinkel, Dean Huynh, Melanie McConnell, Daniel Olson, Brent Wilkinson, Daniel Woods • **Biology-Ecology BS** Amanda Berkey • **Biology-Physiology BS** Justin Arndt, Christine Castro, Blair Chang, Diana De Dios, Jason Farrow, Danielle Flores, Kelly Gibson, Erica Granados, Heather Hopkins, Zhujuan Jiang, Ryan Kemp, Joanne Liu, Pehman Mansourian, David Milliken, John Narvaez, Andrew Newman, Christine Nguyen, Leigh Ann Oberjuerge, Duc Pham, Daniel Phillips Johana Rodriguez, Karim Sabeh, Jeffrey Silverberg, Lauren Sims, Veronica Soloria, Marygrace Sunga, Jeanette Trejo, Arjuna Ugarte, Ashley Wilkman, Jessica Woods • **Biology-Zoology BS** Yhoana Barrera, Maria Garcia, Leslie Healis, Christine Johnson, Marty Lewis, Brittany Madrigal, Monica Royer, Matthew Schliebe • **Marine Biology BS** Wade Axup, Cheryl Bube, Dwight Causey, Jennifer Granneman, Brittney Seeley, Lauren Shiosaka, Kourtney Siess, Samantha Zacarias • **Microbiology BS** Edsel Abud, Christian Aguilera-Sandoval, Jason Alvarez, Vandana Bhakta, Alison Greenwood,

Gerardo Hernandez Jr., Woosung Jung, Sol Ah Kim, Rovie Manuel, Lorryne Noda, Joshua Reish, Marie Rippen, Mitchell Sandberg, Courtney Steinwachs, Michellemae Tandoc, Mareya Youssef • **Chemistry BA** Tae Hyung Ji, Brittany Maynard, Nicole Rossi • **Chemistry BS** Jason Barca, Christopher Bruner, Sheri Cheatwood • **Biochemistry BS** Lester Abadilla, Christine Bradford, Maria Cruz, Devin Doud, Francisallen Fernandez, Richard Hua, Kimberly Johnston, Brian Kammourieh, Charlie Kong, Jungnye Lee, Greer McMichael, Lauren Mitre, Daniel Nguyen, Jimmy Nguyen, Julie Nguyen, Kim Nguyen, Leidy Palomec, Arti Patel, Sarav Patel, Yin Mei Phung, Cesar Reyes, Francisco Rodriguez, Sarah Smith, Jake Sylwanowicz, Quynh Hoang Tran, • **Geology BS** Michael Arthur, Logan Chinn, Matthew Cochrane, Luke Shafer • **Mathematics BS** Siti Azlin Abdul Azis, Zachary Buck, Taylor Burtle, Anne Margaret Cawley, Hyo Jin Chung, Matthew Labar, Julie LuVisi, Michael Manos, Alida Mugisha, Patara Nimsombun, M. Tip Phaovibul, Brydey Redmon, Maria Rincon, Jubilee Rodriguez, Marbelio Villatoro, Andy Yu • **Math-Applied BS** Austin Adams, Michelle Butkivich, Elvia Franco, Moises Gutierrez, Kristin Haldeman, Krista Katayama, Kailam Lee, Lara Mitchell, Mark Shimazu • **Math-Education BS** Mary Brice, Lindsay Bullock, Brittany Clark, Ryan Morck, Robert Pieper, Lucero Rodriguez, Holly Roesch, Dima Saikaly, Erika Sanchez, Lindsey Skelton • **Math Statistics BS** Alexa Boyer, Joel Londeree, Jason Prull • **Physics** Ariel Amberden, Bryan Economy, Jorge Medina, Matthew Moocarme, Rasmey Phann, David Rave

Dean's List

• **Biology BS** Ivan M. Alvarez, Nicholas A. Barnes, Jose L. Camacho, Gainyoon Chao, Tiffany Chu, Malejina C. Cruz, Chelsea K. Franzen, Kirstin N. Fuentes, Tiffany F. Garcia, Minh Hoang Ho, Eileen Hok, Daniel H. Kim, Yen Hoang Luu, Thao Phuong Ly, Ayla O. Manughian-Peter, Kelsey A. McCroskey, Maged M. Mikhail, Catherine K. Nang, Joshua Nettles, Giang Duong Nguyen, Kellie N. Noyes, Eric Junghyuk Oh, Enrique Olivares, Harvey Perez, Amy Quach, Reyna Raya, Marwa M. Rifai, Connie M. Rodriguez, Jeanne M. Tran, Josephine Tran, Sammy Tran, Tom N. Tran, Stephanie A. Valdez, Melissa M. Ven Dange, Nicole Vlassoff, Deborah D. Wickiam, Jessica M. Young. • **Biology-Education BS** Kelsey Casalegno, Cari Dugas, Serrena Tahvildari, Sammi Venegas, Shelley Weaver • **Biology Botany BS** Joshua Kerwien, Cyndia Benitez, Thienthu Huynh, Matthew Maland, Gopal Vithlani • **Biology-Ecology BS** Marc Person • **Biology-Physiology BS** Joel Ancheta, Shanntel Barrios, Janet Doan, Shalessa Gardner, Michelle Hoang, Brice Hunt, Kasey Kagawa, Lisa Kaiser, Lena Kuang, Kevin Lin, Fady Makar, Shane Mandalia, Katherine Morales, Lauren Paaske, Johua Parkin, Muhammad Rafay, Jennifer Rodriguez, Joseph Salcedo, Christopher Slay, Nick Spurlock, Chavalit Tomthong • **Biology-Zoology BS** Rachel Dominguez, Emily Ferrill, Lisa Howard, Molly Jorges, Carrie Madden, Chloe Matula, Pier-Maria Eloisa Munoz, Katy Swancutt • **Marine Biology BS** Carrie Adams, Dan Bui, Ashley Contreras, Brenna Del Riego, Michelle Erbe, Courtney Gagnon, Jeanette Hofstee, Te Ma, Michelle Nakamura, Katherine Pan, Alayna Petre, Alina Setz, Lareen Smith, Lindsay Sturtevant, Ashley Taylor, Samantha Ursua, Paul Vaccarello • **Microbiology BS** Juan Caldera, Melodyanne Cayabyab, Tahlia Dang, Meredith Flores, Nicole List, Kristopher Locken, Jessica Lopez, Matthew Sasaki, Patris Sherwan, Michael Worth • **Chemistry BA** Cynthia Cueva, Sean Gardner, Michiko Okawara, Michelle Park, Alan Tran • **Chemistry BS** Wendy Chaing, Joseph Ferraro, Richrissa Guihama, Andrea Hewitt, Christine Malinick, Garret Squires, Kelley Vineyard, • **Biochemistry BS** Nabilah Ali, Wendy Beck, Myles Brookman, Silvia Cervantes, Jennifer Choi, Lara Driggers, Jenny Guerrero, Darin Khumsupan, Panupun Khumsupan, Linda Lam, Hellen Ngo, John Nguyen, Shaun Pamintuan, Aarushi Parekh, Melvin Peralta, Ashley Phan, Michael Toliver, Tina Tran • **Geology BS** Jonathan Downie, Courtney Marshall, Alicia Vollmer • **Mathematics BS** Cheryl Gray, Aubrey McCarthy, Nana Noda, Jeffrey Ostermann, Shannon Russell, Timothy Teasley • **Math-Applied BS** Alyssa Azucenas, Jessica Mejia, Hoang Nguyen, Krista Ohashi • **Math-Education BS** Courtney Alexander, Chelsea Capobianco, Ryan Chitwood, Mina Do, Marine Karapetyan, Yael Karni, Deisy Lopez, Leana Mari, Claudi Marquez, Alham Najjar, Tuan Nguyen, Carlos Ramirez, Yoshua Sudarso, Phi Tran, Hung Trinh, Jaquelynn Zeeb • **Physics BS** John Culbertson, Matt Mitchell

ABRCMS, Continued

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Jessica Ruiz (Long Beach City College) – “Triserine Lactone Ligands for Use in Molecular Recognition and Asymmetric Catalysis” (Dr. Eric Martinez – faculty research adviser; Chemistry and Biochemistry).

Thara Sam – “Isolation of Sex-specific DNA Fragments in the Side-blotched Lizard (*Uta stansburiana*) using Amplified Fragment Length Polymorphism” (Dr. James Archie – faculty research adviser, Biological Sciences)

Brenda Velis – “Confirming Microarray Expression Data for Chloroplast Proteases using Real Time PCR” (Dr. Judith Brusslan – faculty research adviser, Biological Sciences).