

Early Life on the Ancient Earth and Mars

Ready for our Fall symposium? This year our symposium is organized by the Biology and Geology programs. The title of this years talk is: Early Life on the Ancient Earth...and Mars? Fossils of early microbial life have been known since their discovery in the Gunflint Chert during the 1960s, but the last 25 years has seen a crescendo of advancing knowledge about early life that remains largely unknown outside the scientific community. These advancements have informed and spurred continued research into the possibility of life on Mars, past or present, including the current Mars rover operations and a new nuclear-powered rover planned for launch in 2009.

The symposium talks will explore the primitive microbes likely to have been the earliest life forms on Earth, the environmental conditions on Earth during the first 2.5 billion years of its existence, deep-sea and shallow-marine environments where these organisms developed and may have arisen, and the search for evidence of past conditions that are suitable for these organisms on the surface of Mars.

The symposium will be held on Friday, Nov. 21st, from 12:30-5:00pm in the Aliso Hall Auditorium.

For more information and to register, visit: biology.csuci.edu/mars



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ALUMNI SPOTLIGHT



UNDERGRADUATE ALUMNI

Taylor Murphy is a 2004 CSUCI graduate with a B.S. in Biology with an Emphasis in Cell and Molecular Biology. Taylor is currently a fourth-year PhD candidate at the University of Notre Dame where he is studying ocular lens development in Danio rerio (zebrafish). Many genes involved in zebrafish lens development, as well as structural organization, are highly conserved in humans. These similarities, along with ease of genetic manipulation, make the zebrafish a suitable model system to study normal, as well as abnormal, lens development and maintenance. The lab Taylor works in has generated multiple zebrafish mutant lines that exhibit abnormal lens phenotypes. Specific to his research, they have a line in which they have introduced a mutation in the gene that encodes Phosphatidylinositol (PI) synthase. This mutant exhibits lens opacity similar to the human condition of cataract. His project investigates the necessity of the PI synthase enzyme during lens development and its role in the maintenance of optical clarity. Through the analysis of zebrafish lens mutants, they hope to better understand the progression of cataract pathology in humans. Taylor is currently the head teaching assistant for the Classical and Molecular Genetics laboratory and he may pursue a career in teaching upon graduation.

Taylor had this to say about his time at CSUCI:

"The Biology program at CSUCI afforded me a quality education at a fantastic value, but for me it was the faculty's attention to student progress that set Channel Islands apart. As a student, small class sizes facilitated student-instructor interaction that really strengthened my understanding of the course material, and it was the encouragement I received from many biology faculty members that convinced me to continue my education as a graduate student. Overall, my time at CSUCI prepared me for graduate level classes and provided the experience necessary to succeed in a research environment."

GRADUATE ALUMNI

Melissa McCoy is one of the first 2008 CSUCI students to graduate with a M.S. in Biotechnology and MBA dual degree. She is currently working at Invitrogen Corporation, a global company that provides products and services to pharmaceutical and biotechnology companies, as well as academic and government institutions located in Camarillo. Melissa is an Associate Scientist in the research and development area of the company and is involved in developing immunoassays which are used by biotechnology and pharmaceutical companies as well as academic researchers for biomedical research and drug development. The assays help to measure different biomarkers that are involved in signaling pathways associated with a number of different diseases, including cancer, neurological disorders, and metabolic diseases. Melissa is also currently exploring other career opportunities which will allow her to apply some of the experience she has gained through the completion of the dual degree program at CSUCI. She hopes in the future to integrate the business and management skills she gained through the MBA portion of the program with the technical skills gained through the Master's in Biotechnology Portion of the program.

Melissa had this to say about the M.S. in Biotechnology and MBA Dual Degree Program:

"I have gained a lot from my experiences in the CSUCI graduate program. Initially when I started I planned only to earn a Master's degree in Biotechnology but as part of the first graduating class in the program I was given the opportunity to take part in the new dual degree program being offered and earn my MBA as well. The combination of having a technical degree and a business degree has opened up more career opportunities that I never would have considered had I not received both degrees. The fact that CSUCI was the first university in the area to offer such a unique program shows the college's commitment to meet needs of the industry as well as the career needs of its students."



UNDERGRADUATE ACCOMPLISHMENTS

Congratulations to Lauren Cole and Eleanor Averion for being accepted to Loma Linda University School of Allied Health Professions. Lauren and Eleanor graduated in the Spring of 2008 with a B.S. in Biology with an Emphasis in Biomedical Imaging. Lauren and Eleanor are both pursuing certificates in Diagnostic Medical Sonography.



SHOREBIRD MONITORING PROJECT

The 1974 International Shorebird Survey (ISS) found that there are few places in the world where the appropriate combination of resources needed by shorebirds for refueling during their migration are present, and for some species 80% of the North American population may visit a single site. A loss of one of these critical staging areas could devastate a shorebird population.

That is where Dr. Donald Rodriguez, Environmental Science and Resource Management Program Chair and Dr. Angela Chapman, Lecturer in Biology, the principal investigators on the shorebird monitoring project come in. The study of shorebird monitoring began in July 2007 and is still continuing through the development of a long term data set of costal bird observations. With the help of CSUCI students, such as Christina Fahim, Biology senior, there is an effort to quantitatively investigate and characterize shorebird species and their seasonal populations along the Ventura County coastline.

Fourteen 1-km transects, covering 20% of the Ventura shoreline adjacent to offshore oil and gas operations, are being monitored for a three-year period. Results of the three-year study are compared to a similar three-year study completed from 1994-1997 to improve our understanding of the effects of human activities on the coastal environment. Current data analysis suggests that over the last decade there has been significant decline in total numbers of shorebirds using Ventura County beaches. The results for the four most prevalent species observed during the original study, over the same six month period (July through December), all show alarming distribution changes. The numbers of Snowy Plovers, however, are generally consistent with the data from ten years ago. This species is listed as Threatened under the Endangered Species Act and efforts are underway to ensure its protection. If you are interested in knowing more about the project or would like to monitor shorebirds, please contact Dr. Angela Chapman at: angela.chapman@csuci.edu.



Congratulations! The dual master's degree program in MS Biotechnology & MBA was selected as the 2008 UCEA West Outstanding Credit Program. This is a western regional award sponsored by the University Continuing Education Association, the major national professional association for university continuing education divisions. Of course our very successful and unique dual degree was a team effort involving Biology, Business, and Extended Education. The award was presented by Dr. Judah Rosenwald, President of UCEA and CFO/COO of UC Berkeley Extension and accepted by Dr. Ching-Hua Wang, Director of the MS Biotechnology and Bioinformatics Program at the UCEA West Regional Conference on Thursday, October 16, in Missoula, Montana.

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Welcome...

...to our newest tenure-track faculty member Dr. Ruben Alarcon.

DEGREE SPOTLIGHT

The Bachelor of Science in Biology with an Emphasis in Biotechnology enables students to make a smooth transition to the biotechnology industry by understanding the concepts of basic and applied biotechnology. This program allows students to have numerous career avenues and lays the groundwork for graduate study.

DID YOU KNOW?

NASA scientists are using a new, high-precision instrument called NanoSIMS (for nanoscale secondary ionization mass spectrometry) to discover tiny fragments of organic matter that could be the oldest traces of terrestrial life. With the NanoSIMS potential "biosignatures" have been found in rocks dating back 3.3 to 3.5 billion years, long after deformation by pressure and heat would have destroyed any whole-cell fossils these rocks may once have contained.

We'd love to hear from you ! Let us know what you think of our e-Newsletter. Please send your thoughts to: Catherine Hutchinson at catherine.hutchinson@csuci.edu