Message from the Dean

Renowned scientist Carl Sagan once said, “We live in a society exquisitely dependent on science and technology, in which hardly anyone knows anything about science and technology.”

As certain governmental science agencies have been banned from communicating with the media, now more than ever, it is essential for major research universities to help inform the public. This is particularly more relevant as we continue to push our bodies to new limits and more and more people are living into the 8th, 9th, 10th, and even 11th decade. In addition, we face formidable foes such as Alzheimer's disease, cancer, and obesity and new predators like Zika, HIV, and Ebola.

The Ayala School of Biological Sciences takes great pride in sponsoring a series of public lectures throughout the year to help inform our community about the science of life. The hunger in the community for this knowledge is best illustrated by the recent lecture by Psychiatry Chair and Professor Ruth Benca, who spoke to over 700 individuals at the Barclay Theatre about sleep disorders. As Orange County's only research university with an entire school devoted to the life sciences, the Ayala School seeks to cover all aspects of life sciences from ecology and evolution, to disease-related topics, to stem cells, to exercise science and to the intricacies of how our brains function.

The living world is clearly complex and grows ever more complex as factors such as climate change alter the delicate species among all forms of life. Please consider joining us for these fascinating lectures by world-renowned researchers. All lectures are free to the public, and we welcome suggestions on topics for future lectures. Please visit bio.uci.edu/events to learn about additional lectures throughout the year.

FACULTY RECOGNITION

Distinguished Professor Title Awarded

Thomas L. Poulos, Ph.D., (Molecular Biology and Biochemistry) has been awarded the title of Distinguished Professor. The title is the highest distinction awarded at the campus level, and is reserved for faculty who have an outstanding record of scholarship while at UCI and who have reached a level of national and international preeminence within their field. Read more.

Clinical Translational Scientist Career Achievement Award

Susan Bryant, Ph.D. has been named the recipient of the Institute for Clinical and Translational Science Career Achievement Award. Dr. Bryant is the former dean of the Ayala School, a professor in Developmental and Cell Biology, and Vice Chancellor for Research. An expert in the study of limb regeneration, Dr. Bryant has published over 100 publications.
Say Goodbye to Scars

In a study published in the prestigious journal, *Science*, Professor Maksim Plikus, (Developmental and Cell Biology), and his colleagues from the University of Pennsylvania, discovered a natural regeneration process that stimulates scar-free skin repair, involving fat cells and hair follicles. Professor Plikus noted that his results could be beneficial for purposes beyond scarring, such as anti-aging treatments. Read more.

Organs-on-a-chip May Lead to Better Therapeutics

By modeling normal and diseased human organs on a small scale, researchers believe they can greatly improve the discovery of drug compounds that can target specific tissue cells, including cancer cells. Professor Christopher C.W. Hughes (Molecular Biology and Biochemistry) has created a miniature model organ system capable of mass production, and effective use in high throughput drug screening. Professor Hughes' "Organs-on-a-chip", are simple and user friendly, extractable for gene expression analysis, and highly replicable. Read more.

Key Protein in the Defense Against Common Parasite Identified

University Professor and Donald Bren Professor of Biological Sciences Francisco J. Ayala (Ecology and Evolutionary Biology) was part of a collaborative study that identified the protein guanylate-binding protein-1 (GBP-1) as a pivotal player in host defense against the parasite *Toxoplasma gondii*, which infects warm-blooded vertebrates including humans. Read more.

Innocent Bystanders in the Fight Against Cancer

Emerging cancer treatments that target specific pathways in cancer cells have been thought to be the answer to the many side effects and long-term risks associated with older chemotherapy drugs. In a new review by Professor David A. Fruman (Molecular Biology and Biochemistry) and Professor Susan M. O'Brien (Division of Hematology and Oncology), the cancer researchers discuss new findings that show that two new targeted therapies can lead to harmful effects due to off-target mechanisms. Read more.
New Insights into Brain Repair Enzyme

Professor Dana W. Aswad (Molecular Biology and Biochemistry) and colleagues, have successfully expressed/purified several variant forms of the PIMT enzyme to study their biochemical properties. The PIMT enzyme functions to repair damaged proteins that can occur with age. When PIMT activity is decreased in animal models, the models develop severe brain abnormalities, which suggest a role for PIMT in the development of neurological dysfunction. The findings of Professor Aswad’s group provide new insight into characteristics of the enzyme that may prove invaluable in future studies on brain diseases associated with PIMT. Read more.

News and Highlights

UCI Alumni Association to Bestow its Highest Honors

The UCI Alumni Association will honor Dr. M. Marlene Godoy ’76 along with Professor Anthony A. James ’73, Ph.D. ’79, the Donald Bren Professor of Molecular Biology and Biochemistry and Microbiology and Molecular Genetics, at the 2017 Lauds & Laurels Award Ceremony this spring. Read more.

School Welcomes Two New Faculty

Celia Faiola, Ph.D., has joined the Ayala School faculty as an Assistant Professor in the Department of Ecology and Evolutionary Biology. Professor Faiola’s research focuses on the biological production, release, and ultimate fate of gaseous organic molecules emitted from plants and microbes. Read more.

Ilhem Messaoudi, Ph.D., has recently joined the Ayala School faculty as an Associate Professor in the Department of Molecular Biology and Biochemistry. Formally a faculty member at UC Riverside, Professor Messaoudi’s research goals are to understand how age, nutrition, and other factors impact the ability of the immune system to function adequately. Read more.

FACULTY SPOTLIGHT

Markus W. Ribbe
Molecular Biology and Biochemistry

Chancellor’s Professor Markus W. Ribbe (Molecular Biology and Biochemistry) has spent his career at UCI uncovering the mysteries surrounding the enzyme nitrogenase. His research seeks to understand the basis of nitrogenase enzymatic activity, with the additional goal of using nitrogenase to generate alternative sources of fuel. Read more.

STUDENT SPOTLIGHT

Bhavesh Patel

Bhavesh Patel is a third-year student majoring in biological sciences with a minor in medical anthropology. He is a University of California Regent’s Scholar, who plans to pursue a career
The People Who Never Forget

James L. McGaugh, Ph.D., has laid the ground work for the study of individuals with a special type of memory known as Highly Superior Autobiographical Memory (HSAM). Professor McGaugh’s work on HSAM, including the first person ever to be diagnosed with HSAM, Jill Price, is the highlight of a new online feature in The Guardian. Read more.

Lessons From the Oldest-Old: The 90+ Study

On February 23rd, the Ayala School of Biological Sciences was honored to have Professor Claudia H. Kawas (Neurobiology and Behavior and Neurology) give an insightful lecture on her groundbreaking work studying the fastest growing segment of our population, people over 90 years of age. Read more.

What We Can Learn from the Sleeping Brain

As part of our community outreach efforts, the Ayala School of Biological Sciences welcomed the new chair of Psychiatry and Human Behavior, Professor Ruth Benca, to present her research on the sleeping brain at the 23rd UCI Distinguished Lecture Series on Brain, Learning and Memory. Professor Benca has helped identify the correlation between sleep and neurological disorders, and that untreated sleep disorders can increase the risk of developing conditions like depression and Alzheimer’s disease. Read more.

Better Teaching Through Collaboration

Ayala School Teaching Professors Brian Sato (Molecular Biology and Biochemistry) and Justin F. Shaffer (Developmental and Cell Biology) organized the first ever regional meeting of the prestigious Society for the Advancement of Biology Education Research. With support from the School, Professors Sato and Shaffer played host to over two-hundred faculty, postdocs, and graduate students from all over the US and Canada. The meeting, which was to help foster interaction and collaboration among life science educators, was incredibly well received with countless requests to make it an annual event. Read more.
Fighting the Disease of Addiction

The UC Irvine Center for Addiction Neuroscience (ICAN) was founded to tackle high impact questions in drug abuse and addiction. The center is comprised of UCI faculty from 4 different schools and 11 different departments with expertise in basic and clinical research on drugs of abuse. ICAN held their second annual Addiction Symposium, welcoming addiction researchers from all over Southern California for a day of data sharing and conversation. At the event, several UCI faculty members spoke, covering recent findings including new insights into opioid and prescription drug abuse. Read more.

Honoring Our Future Innovators

The ARCS Foundation seeks to further advance science and technology by providing assistance to exceptional students studying to complete degrees in STEM fields. Ayala graduate students Allison Najafi and Zachariah Reagh (Neurobiology and Behavior), Alyssa Braciszewski (Ecology and Evolutionary Biology), and Christine Schneider (Molecular Biology and Biochemistry) were honored at this year’s ARCS Scholars Luncheon for their innovative research projects. Read more.