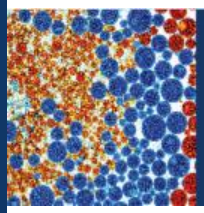
Issue Spotlights:



Spotlight:

From the Director's Desk

Dear friends,

We recently said thank you, but fortunately not goodbye to Sid Golub, PhD, who retired from his position as director of the Sue & Bill Gross Stem Cell Research Center. Even as Sid closed the book on a productive four years in the position, he agreed to take on a new challenge.

As a respected leader in stem cell ethics and policy, the founding Chair of the human Stem Cell Research Oversight Committee at UCI, and the Edward A. Dickson Emeritus Professor, Sid will promote examination and discussion of ethical principles in basic and translational research across the campus, and monitor how California compares to other states on stem cell policy.

Under Sid's leadership, and with support from you, the Sue & Bill Gross Stem Cell Research Center has recorded achievements on many fronts. To mention a few:

• The Seed Grant Program, which supports early exploration of novel research ideas, funded 11 promising studies and produced research findings that have attracted $6.2 million in support for further investigation.

• Our local community learned about stem cells through dozens of facility tours, periodic lectures and annual events celebrating Stem Cell Awareness Day.

• A young Stem Cells Offer Hope Society flourished, hosting annual events attended by many of you and raising vital funds to advance critical research into cures for diabetes, cancer, eye disease and much more.

• Faculty appointments in the center grew to 13 clinical and basic research science SOM faculty. It is notable to mention that 29 out of 45 SCRC faculty hold primary or joint appointments in the departments of Neurobiology & Behavior, Molecular Biology & Biochemistry, Developmental & Cell Biology, Chemical Engineering & Biomaterials, Biomedical Engineering, Pharmaceutical Sciences, Dance, and Law.

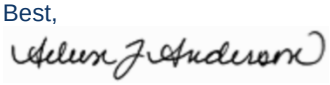
• UCI entered into a collaboration with UCLA to establish a California Institute of Regenerative Medicine Alpha Stem Cell Clinic. Launched with an $8 million CIRM grant, the joint entity conducts clinical trials of investigational stem cell therapies.

• Researchers announced progress in a host of areas, forging inroads into possible treatments for everything from wounds and preventable blindness to diabetes and Huntington's disease.

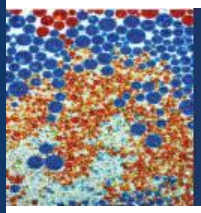
We thank Sid for his passionate commitment to advancing stem cell research in pursuit of treatments that will improve health in our community.

As interim director, I am committed to maintaining an environment where my esteemed colleagues are able to venture into the unknown and return with creative new ideas for eliminating some of life's most debilitating conditions. I hope you are as excited as we are to one day change how medicine is practiced.

Best,



Aileen J. Anderson, PhD
Professor
Departments of Physical Medicine & Rehabilitation,
Anatomy & Neurobiology, and Neurological Surgery
Interim Director, Sue and Bill Gross Stem Cell Research Center



Spotlight:
Seeds of Change

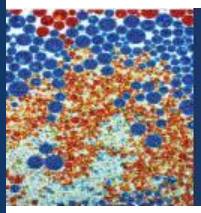
Muhammad Aslam, MD

Your support for the Stem Cell Research Center Seed Grant Program gives visionary researchers the opportunity to test new ideas, advance understanding of human disease and explore novel therapeutic or diagnostic strategies to improve human health. These seed grants make it possible to gather the data that inspires larger grants from public funding agencies and, ultimately, enables profound advances in medical practice. Without a seed grant, a study may stop, locking its potential benefits to human health in a lab forever.

Dr. Muhammad Aslam is at a critical juncture in his search for a cure for chronic lung disease (CLD). CLD is a respiratory condition that affects premature babies, causing long-term health issues, frequent hospitalizations, home health care needs and, in extreme cases, even death. Current treatment options are supportive, mostly ineffective, and can lead to undesired side effects.

Dr. Aslam and his team are working tirelessly on new treatment possibilities, looking to stem cells for a better way to treat this condition. Thanks to funding from the Susan Scott Foundation, the team has made exciting progress. Now, additional funds are needed to maintain the forward momentum. Your gift to the Stem Cell Research Center Seed Grant Program can help them achieve another milestone, bringing hope to families who know the challenges of living with CLD.

Support Dr. Aslam's Research



Spotlight:
In the News

Maksim Plikus, PhD

UCI study sheds light on regulation of hair growth across the entire body

Findings point to new ways of addressing human baldness, unwanted hair. University of California, Irvine scientists have discovered that all hairs can communicate with each other and grow in coordination across the entire body. This is regulated by a single molecular mechanism that adjusts by skin region to ensure efficient hair growth – so no bald patches form – and enable distinct hair densities in different body areas. Read More

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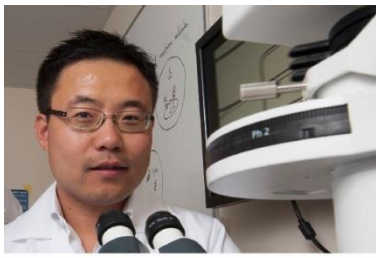

Weian Zhao, PhD

UCI stem cell therapy attacks cancer by targeting unique tissue stiffness

Study shows success in stamping our deadly metastatic cells. A stem cell-based method created by University of California, Irvine scientists can selectively target and kill cancerous tissue while preventing some of the toxic side effects of chemotherapy by treating the disease in a more localized way. Read More

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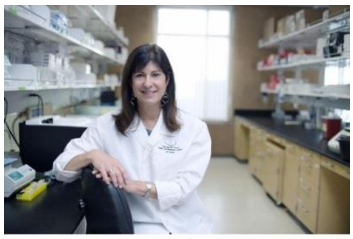

Leslie Thompson, PhD

Basis of 'leaky' brain blood vessels in Huntington's disease identified

UCI-led stem cell study points to new treatments for this fatal disorder. By using induced pluripotent stem cells to create endothelial cells that line blood vessels in the brain for the first time for a neuro-degenerative disease, University of California, Irvine neurobiologists and colleagues have learned why Huntington's disease patients have defects in the blood-brain barrier that contribute to the symptoms of this fatal disorder. Read More

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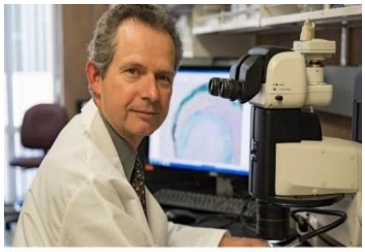

Henry Klassen, MD, PhD

jCyte receives regenerative medicine advanced therapy designation

FDA granted Regenerative Medicine Advanced Therapy (RMAT) designation for the company's developmental retinitis pigmentosa treatment, jCell. Co-founder Henry Klassen, MD, PhD, is an associate professor of ophthalmology at UCI and a member of the Sue & Bill Gross Stem Cell Research Center. Part of the 21st Century Cures Act, RMAT designation facilitates expedited reviews and approvals for stem cell and other cellular and tissue therapies that manage serious or life-threatening conditions. Read More

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Sumner Norman, PhD

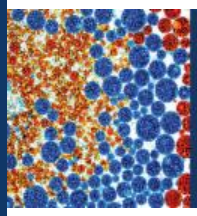
Robots lend a helping hand

Stroke victims benefit from UCI engineering research. Blame it on the movies and television, but people tend to think of robots as tireless factory workers or as soulless automatons bent on destruction. For UCI's Sumner Norman, they're all about healing and rehabilitation. The fifth year doctoral candidate in mechanical & aerospace engineering studies robotics-based therapies to help stroke victims. Read More

Mathew Blurton-Jones, PhD

Stem cells made from skin used to generate new brain cells

UCI-led study to advance understanding of the role of microglia in Alzheimer's disease. Using human skin cells, University of California, Irvine neurobiologists and their colleagues have created a method to generate one of the principle cell types of the brain called microglia, which play a key role in preserving the function of neural networks and responding to injury and disease. Read more

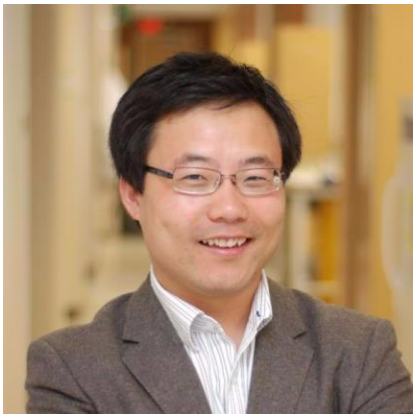


Spotlight: Awards & Grants

Henry Klassen, MD, PhD, was named in the 2nd annual Ophthalmologist Power List in the Ophthalmologist magazine as one of the 100 Most Influential People in Ophthalmology for his longstanding efforts to find new treatments for retinal diseases, including retinitis pigmentosa. Read more

Brian Cummings, PhD, was awarded a **CIRM Discovery (Quest) Award** to identify and characterize human neural stem cell lines (hNSC) for the treatment of traumatic brain injury (TBI). The award is for $1,671,231 over 2 years.

Leslie Thompson, PhD, was awarded a **CIRM Discovery (Quest) Award** to support her research of human neural stem cell lines (hNSC)-mediated delivery of ApiCCTI as a candidate for Huntington's Disease. The award is for $1,650,263 over 2 years.



Jonathan Lakey, PhD, was awarded several grants to find a cure for Type 1 diabetes. His research is focused on designing a pancreatic islet implantation device, which could eliminate the need to take lifelong anti-rejections drugs for diabetes patients. Recent funders include:

JDRF: $1.3M

Mrs. Anne Brownstein: $100K

PADRE Foundation: $25K

Weian Zhao, PhD, was awarded two grants from the **National Institutes of Health (NIH) and the United States Department of Defense (DoD)** to develop and utilize chimeric antigen receptors CAR-T cells to treat breast and colon cancer metastases, respectively. Once developed, this technology can potentially be applied to many other forms of solid cancers.

National Institutes of Health: $427,506

United States Department of Defense: $399,723

Matt Inlay, PhD, was awarded a $150K grant from the **Alzheimer's Association** to support his research on the generation of blood brain barriers from Alzheimer's disease patients iPSCs.

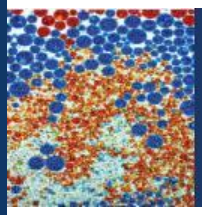
Steven Cramer, MD, was awarded a **American Heart Association Innovative Research Grant** to develop a telemedicine (remote) approach to rehabilitation therapy. The award is for $150K over 2 years.

Magdalene Seiler, PhD, was awarded a $77,472 **CIRM Discovery (Inception)** sub-contract on a USC award to support her research on a novel tissue engineering technique to repair degenerated retina.

Aileen Anderson, PhD, was awarded a $50K grant from the **Johnson Family Trust** to support her research of spinal cord injury.

Muhammad Aslam, MD, was awarded a $40K grant from the **Susan Scott Foundation** to support his investigation to find a cure using stem cells to treat infants and children with chronic lung disease.

Mathew Blurton-Jones, PhD, was awarded a $45K grant from the **Susan Scott Foundation** to support his research of Alzheimer's disease.



Spotlight:
UCI Training Program

Several years ago when California started its' great experiment in public funding of science and created the California Institute of Medicine (CIRM), one of the first grants it awarded were training grants.

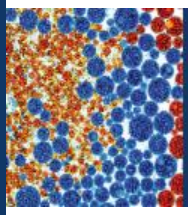
(left to right) Mathew Blurton-Jones, Kristine Freude, Munjal Acharya and Peter Donovan

At UCI, Developmental and Cell Biology Professor Peter Bryant, was awarded a grant to train graduate students and postdoctoral fellows in stem cell biology and regenerative medicine. CIRM's goals were to train the next generation of scientists in this rapidly emerging field and to develop a diverse workforce across a wide range of disciplines. Together with School of Medicine colleague, Dr. Ping Wang, Bryant developed at UCI a training program designed to address the basic science of stem cells, clinical application of the cells and the ethical and legal issues in the stem cell field.

When a few years later Bryant handed the reins of the training program to colleague Dr. Peter Donovan, the program expanded to train more grad students and postdocs and to add clinical fellows. Now some 11 years after the award of that first grant we can now see the result of all those efforts.

Recently former UCI postdoctoral fellow and a trainee on that grant visited UCI to present her most recent work. Dr. Kristine Freude, a former postdoctoral fellow in the labs of Maike Sander and Frank LaFerla, visited from Copenhagen where she is now an Associate Professor in the Group of Stem Cells and Embryology at the Institute of Clinical Veterinary and Animal Sciences of the University of Copenhagen. She described work on using stem cells from patients to study fronto-temporal dementia. Following the talk there was a small reunion of training grant alums including Freude and our own Matthew Blurton-Jones and Munjal Acharya. Blurton-jones and Acharya were also trainees on the CIRM training grant and have gone on to achieve great success. Acharya is Assistant Professor In Residence series in the Department of Radiation Oncology in the School of Medicine while Blurton-Jones was recently promoted to the rank of Associate Professor in the Ayala School of Biological Sciences. Each have established rigorous stem cell research programs thanks in part to the opportunity they had through the CIRM training grant. Acharya focuses on developing new treatments for "chemobrain", the effect caused by treating cancer patients with irradiation or chemotherapy while Blurton-Jones focuses his attention on Alzheimer's disease and other types of dementia.

Some have argued that the training programs were amongst the most successful grant programs developed by CIRM. Certainly the program at UCI has provided strong evidence to support that idea. The seeds planted here certainly seem to be growing well and it seems likely that the grand experiment started at UCI will last a long, long time.



Spotlight:
Upcoming Events

2017 Stem Cell Awareness Day Open House
Wednesday, October 11, 2017 from 11:00 am - 3:00 pm at Gross Hall

Join the Stem Cell Research Center as we open our doors for a day of education and research. Learn about the scientific advances being made and see the future of medicine at our public open house. The day includes self-guided tours and laboratory demonstrations from our researchers.

This event is free and open to the public. Registration is not required. For questions contact Andrea, andreao@uci.edu

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Stem Cell Fall 2017 Seminar Lecture Series
Seminars are from 11:00 am - 12:00 pm at Gross Hall, 4th Floor

October 20: Generation and use of iPSC-derived microglia to study Alzheimer's Disease
by Mathew Blurton-Jones, PhD of University of California, Irvine

November 17: Understanding how wound repair and scar formation are regulated at the cellular and molecular level by Lorin Olson, PhD from the Oklahoma Medical Research Foundation

December 1: Mechanisms of pancreas morphogenesis and the link between morphogenesis and differentiation by Ben Shih, PhD from City of Hope

Tour the Sue & Bill Gross Stem Cell Research Center

Next opportunity: Thursday, November 16, 2017 from 3:00 - 4:30 pm

Get a behind the scenes peek at the cutting-edge science and discoveries being made at UC Irvine that are giving millions of people hope worldwide. See first-hand how our talented scientists are changing the way medicine is practiced as they push the boundaries of what is possible in the exciting new science of regenerative medicine.

Sign up for the November tour!

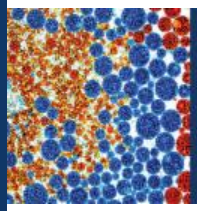
Stem Cell Symposium

Thursday, December 11, 2017 - Time & Complete Program TBA

Guest Speaker:
Elena Cattaneo, OMRI, PhD

We are thrilled to announce that Italian senator and world-renowned stem cell researcher, Elena Cattaneo, OMRI, PhD, will be our guest speaker at our Stem Cell Symposium in December at the Sue & Bill Gross Stem Cell Center. She will share her research on neural stem cells, their application, and the neurodegenerative mechanisms of Huntington's disease. She will also discuss activism to protect patients from questionable stem cell therapies.

Elena Cattaneo is the co-founding director of the University of Milan's Center for Stem Cell Research (UniStem). In 2013, she was made an Italian senator for life. She uses this position to oppose unfounded claims made by companies offering stem cell remedies. On May 18, 2017 she organized a delegation of patients and families of the Huntington community to meet Pope Frances in the Vatican. It was attended by 1700 people from 26 countries.



Spotlight:
Our Gratitude

Thank you for recognizing the importance and hope stem cell research represents for millions of people worldwide who are suffering illnesses and diseases for which there are no cures. Your support is vital in allowing our dedicated scientists and researchers to continue to push the boundaries of what is possible in regenerative medicine.

It takes a long time and great expense to advance discovery from the laboratory to clinical trials and new treatments. If you would like to support innovations in stem cell research, please consider joining our ***Stem Cells Offer Hope Society*** **.** As a member, you will receive exclusive invitations to Sue & Bill Gross Stem Cell Research Center events and access to our scientists to further your discovery and understanding of their research.

Please feel free to email me with questions regarding the Sue & Bill Gross Stem Cell Research Center or with suggestions and topics that you'd like to hear more about in our next newsletter.

Warmly,

Janice Briggs
Senior Executive Director of Development,
UC Irvine Health Advancement University of California, Irvine
UCI Health Advancement
jbriggs@uci.edu

A *special thanks* to our supporters for gifts of $5,000+ received since July 1, 2015

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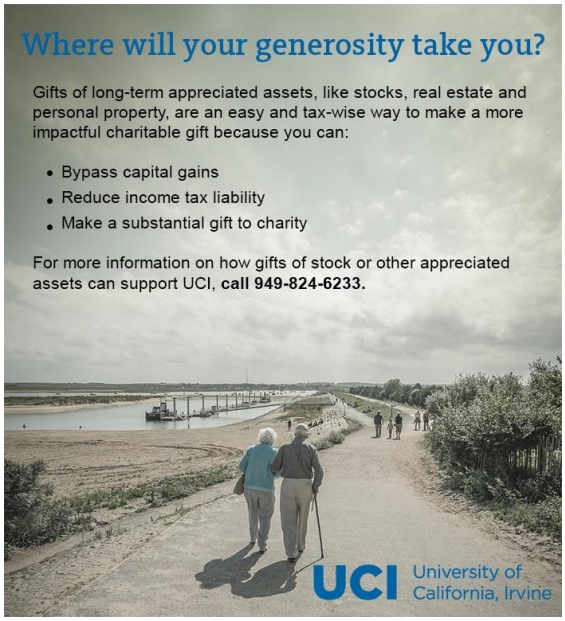

As we approach the end of the year, perhaps more than any other season, this becomes a time for reflection; a time when we look back on the year and consider the changes we have experienced in our lives. It is also a time when many review our financial affairs. A common consideration you may have as you approach year end is the concern of tax erosion.

Fortunately, charitable giving can be leveraged to not only maximize your philanthropic goals but also mitigate your tax burden. Life income gifts can also present numerous benefits while maximizing philanthropic impact.

The Office of Planned Giving at UCI can assist you to identify the planned giving options that best fit your family's goals and financial needs.

STAY CONNECTED