

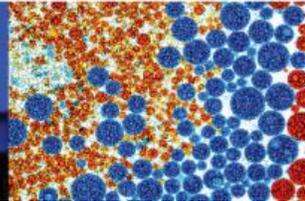
2017 WINTER
NEWSLETTER



SUE & BILL GROSS
STEM CELL RESEARCH CENTER
UNIVERSITY of CALIFORNIA • IRVINE

IMPACT

Help us Change Lives



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Spotlight:

From the Director's Desk



Feb. 2017

THOUGHTS ABOUT THE FUTURE

Stem cells make me optimistic. Stem cell research is a very new science, but it has a very clear forward trajectory. The first report of human “pluripotent” stem cells (stem cells that can develop into any other cell type) was just 20 years ago and it had an instant impact on the direction of medical research. Today, we recognize that stem cells have great potential in many areas of medicine, but harnessing that potential takes that time-honored formula of inspired creativity combined with hard work. The combination of the enormous potential of stem cells and the commitment of a very talented set of stem cell investigators here at UCI is the source of my optimism.

Another source of optimism is the wonderful support of our generous community. You have enabled us to look ahead by supporting our best new ideas in our seed grant program. These grants allow our scientists to test out innovative new ideas on how stem cells work and how we can use them. We started this program in 2014 and the first series of seven projects showed how varied the uses of stem cells are, as we supported research on melanoma skin cancers, traumatic brain injury, a devastating developmental disorder of newborns, the formation of new blood cells, Parkinson's disease, diabetes, and wound healing. Many of these projects thrived and went on to win support from highly competitive national granting agencies.

The 2017 winners of the seed grant competition are also very exciting. Two projects focus on the molecular biology of stem cells with Dr. Peter Donovan's work testing a new hypothesis on how the genes of a stem cell know when and how to direct the making of a mature cell and Dr. Medha Pathak's work on how stem cells interact with the physical environment in which they have to function. Dr. Craig Walsh's work on Multiple Sclerosis points to a potential clinical approach in this disease. Finally, our Stem Cell Research Center (SCRC) partnered with the UCI Institute for Clinical & Translational Science to provide a seed grant dedicated to rehabilitation and regenerative medicine. The winning application on this important topic went a group headed by pharmaceutical scientist Robert Spitale and SCRC member Charles Limoli who are working on the use of stem cells to aid the brain's recovery from radiation therapy.

So, the future of UCI stem cell research is very bright, as it is lit by creative studies on important topics.

In addition to the basic and clinical sciences, we will continue to pay attention to important issues in the ethical development of stem cell science. We will be telling you about some presentations during 2017 that will deal with important issues of interest to scientists and citizens. Topics will include the ethics of genetic modifications, distinguishing between real and phony science, and the role of science in policy making. Please join us for these interesting events.

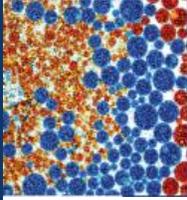
Transitions are also a time to look ahead. While I am retiring as the Director of the SCRC at the end of June, I know that the SCRC will continue to provide leadership in developing new and better ways to understand and employ stem cells. I look forward to my new role by joining you as a supporter and admirer of the UCI Sue & Bill Gross Stem Cell Research Center.

Sidney H. Golub, PhD

Director, Sue & Bill Gross Stem Cell Research Center

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Spotlight:

Research & Publications



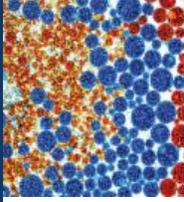
Science Magazine—Assistant Professor of Developmental and Cell Biology at UCI, Maksim Plikus, PhD and UCI graduate student, Christian F. Guerrero-Juarez, in collaboration with The University of Pennsylvania, published their study in *Science* revealing a natural process for scar-free wound healing, which could potentially work as an anti-aging treatment. [Read more >>](#)



National Geographic—Dr. Henry Klassen, an internationally-renowned stem cell scientist from UC Irvine was featured in the September 2016 cover story of *National Geographic*, *The End of Blindness: Winning the Fight to See*, for his groundbreaking work treating retinitis pigmentosa with retinal stem cells. [Read more >>](#)



ARVO Journal—Magdalene J. Seiler, PhD, a stem cell scientist from UC Irvine had a paper published on her work on vision recovery and connectivity, *Vision Recovery and Connectivity by Fetal Retinal Sheet Transplantation in an Immunodeficient Retinal Degenerate Rat Model*, which could potentially lead to advancements in *age-related* macular degeneration and other retinal degenerative diseases. [Read more >>](#)



Spotlight: Awards & Grants



Forbes Magazine—Timothy Downing, PhD, Stem Cell Research Center member and Assistant Professor of biomedical engineering at the Henry Samueli School of Engineering, was named one of the Forbes Magazines 2017 *Class of 30 Under 30: Science* for his research on extracellular signals and their influence on the final fate of cells, possibly impacting advancements in biomedical engineering and regenerative medicine. [Read more >>](#)



American Heart Association—Steven Cramer, MD, was awarded the Annual Stroke Rehabilitation Award from the American Heart Association for his continued work focused on understanding pathology, innate repair processes, and issues related to therapeutic intervention for stroke victims. [Read more >>](#)



CIRM Grant Recipient—Henry Klassen, PhD, MD was funded \$8.3M to continue support for development of a treatment for retinitis pigmentosa, a rare, blinding eye disease. Dr. Klassen is currently entering phase 2b trials. [Read more >>](#)



Oxnard Foundation Grant Recipient—Matt Inlay, PhD, was awarded \$150K to continue his investigation into treatments for ITP, a rare blood disorder, which occurs when the immune system mistakenly attacks platelets. [Read more >>](#)



CIRM Grant Recipient—Leslie Thompson PhD, was awarded \$1.8M to fund her research to better understand Huntington's disease and to translate those discoveries into new therapies. [Read more >>](#)



SCRC Seed Grant Recipient—Peter Donovan, PhD, was awarded \$35K to fund his research on brain health and the viruses within. [Read more >>](#)



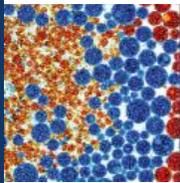
SCRC Seed Grant Recipient—Craig Walsh, PhD, was awarded \$35K on his project to understand and pursue therapies for multiple sclerosis (MS). [Read more >>](#)



SCRC Seed Grant Recipient—Medha Pathak, PhD, was awarded \$25K towards her project on neural stem cells development in the brain. [Read more >>](#)



2017 Rehabilitation & Regenerative Medicine Pilot Award Recipient, Co-sponsored by SCRC and ICTS—Charles Limoni, PhD, Co-PI with Robert Spitale, PhD were awarded this Seed Grant for their research on constructing the in-brain transcriptional landscape of transplanted stem cells during rescue of cognitive impairment due to radiotherapy damage. [Read more >>](#)



Spotlight: Upcoming Events

Stem Cell 2017 Winter Seminar Series

Join us for our free Winter Seminar Series held Fridays from 11:00 am - 12 at Gross Hall 4000, Thorp Conference Center from 11:00 am - 12:00 pm. [Learn more >>](#)

Upcoming Speakers



March 3, 2017

Anna Grosberg, PhD and Assistant Professor
University California, Irvine

Structure and function of engineered cardiac tissue.



March 10, 2017

Charles Limoli, PhD and Professor
University California, Irvine

Reversing the adverse neurocognitive side effects of cancer therapies through stem cell and pharmacologic based strategies.

Tour the Sue & Bill Gross Stem Cell Research Center!

Next Tour Opportunity: April 11, 2017 from 3:00-4:30 pm

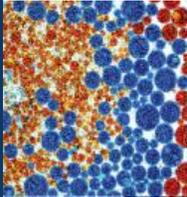


Get a behind the scenes peek at the cutting-edge science and discoveries being made at UC Irvine that are giving millions of people hope worldwide. See first-hand how our talented scientists are changing the way medicine is practiced as they push the boundaries of what is possible in the exciting new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

SoCal Flow

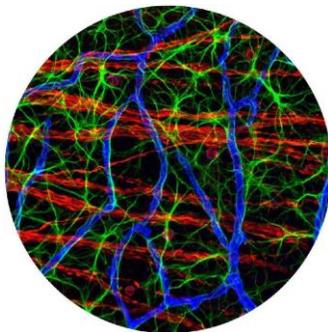
SUMMIT 2017

Listen and learn from researchers, clinical and biomedical scientists from all over Southern California.
April 24th and 25th at the Beckman Center UC Irvine
[Learn More or Register to Attend >>](#)

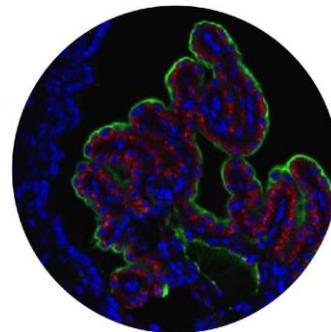


Spotlight:

Under the Microscope



A small area of a retina is seen face-on. This particular retina was undergoing degeneration and the patterns seen are studied for changes related to the underlying condition. **Klassen lab, Geoffrey Lewis, PhD / UCI**

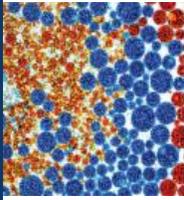


The choroid plexus is the tissue in our brain that makes a fluid called cerebrospinal, or CSF. Using stem cells, Dr. Monuki has patented the first-ever method for making choroid plexus cells using his method to develop new ways of treating brain disease. **Monuki lab, You-Hsing Sung / UCI**



High-Tech Instrumentation

Thanks to a campus-wide scientific consortium led by the Stem Cell Center, UC Irvine acquired the FLUOVIEW FV3000 Series Confocal Laser Scanning Microscope, which provides high-resolution images for fast, accurate imaging of living stem cells.



Spotlight: Our Gratitude

And finally, I'd like to take this opportunity to thank our donors for helping us build a brighter future 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.

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

Warmly,

Janice Briggs
jbriggs@uci.edu

A special thanks to our donors for gifts of \$5,000 and above received since July 1, 2015

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“We know stem cell research represents hope to millions of people, and we aspire to fully deliver on its potential.”

Dr. Peter Donovan, Sue and Bill Gross Stem Cell Research Center