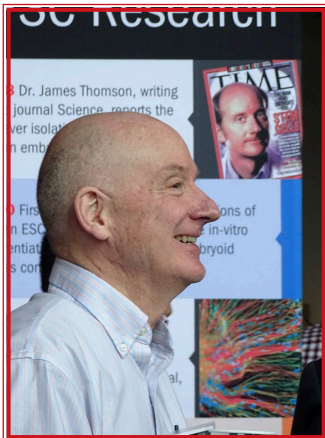




Stem Cell & Regenerative Medicine Center

UNIVERSITY OF WISCONSIN-MADISON

In case you missed the highlights of a very busy semester on our SCRMC social media sites, here is our Spring/Summer 2018 review. Have a wonderful summer, everyone!



Wisconsin Stem Cell Symposium fills the house

[“20 Years of Human Pluripotent Stem Cells: Current Clinical Trials and Regulatory Framework”](#) brought together leading researchers advancing human pluripotent stem cell products to clinical applications for a range of degenerative diseases. More than 300 people attended the 13th annual symposium April 18 at the [BTC Institute](#) in Fitchburg. We heard from so many people during the day that this was our most exciting annual stem cell symposium ever!

Congratulations to our poster contest winners:

- First place: Brett Napiwocki, Engineering Physics ([Crone lab](#)), for the poster “Engineered anisotropic cardiac tissues.” Brett N. Napiwocki, Di Lang, Ravi Vaidyanathan, Jianhua Zhang, Timothy J. Kamp, Jonathan C. Makielski, Lee L. Eckhardt, Alexey Glukhov, and Wendy C. Crone.
- Second place: Clarisse Fligor, Biology Department, Neuroscience Program ([Meyer lab](#)), Indiana University, for the poster “Extensive neurite outgrowth and target specificity from retinal ganglion cells derived from human pluripotent stem cells.” Clarisse Fligor, Kristin B. Langer, Yuan Ren, Valentin M. Sluch, Donald J. Zack, Chi Zhang, Daniel M. Suter, and Jason S. Meyer.
- Third place: Angela Xie, biomedical engineering ([Murphy lab](#)), for the poster “Nanostructured microparticles enable sustained release and protein stabilization to reduce the growth factor dosage require for human pluripotent stem cell maintenance.” Angela W. Xie, Hunter J. Johnson, Andrew S. Khalil, and William L. Murphy.

Enjoy Sue Gilbert’s symposium photo album [here](#).

Welcome new SCRMC members

We extend a warm welcome to our new SCRMC members: [Jayshree Samanta, Ph.D.](#), Assistant Professor, Comparative Biosciences, and [Kenneth Desantes, M.D.](#), Professor, Pediatric Oncology.



Congratulations to our 2018 SCRMC Training Award winners

Congratulations to our 2018 SCRMC Training Award winners and their SCRMC faculty mentors. At far left is Nisha Iyer, postdoctoral associate, with her mentor Randolph Ashton (center back), assistant professor of biomedical engineering, College of Engineering. Standing in front is Kaivalya Molugu, graduate student in biophysics. (Not pictured is her mentor Krishanu Saha, assistant professor of biomedical engineering, College of Engineering.) At center is Eileen Lynch, graduate student in cellular and molecular pathology, and on her right her mentor Masatoshi Suzuki, associate professor of comparative biosciences, School of Veterinary Medicine, also biomedical engineering, College of Engineering. At far right is Pawan Shahi, postdoctoral associate, and standing behind him is his mentor Bikash Pattnaik, assistant professor of pediatrics-neonatology, School of Medicine and Public Health. (Photo by Jordana Lenon)

The funded projects are:

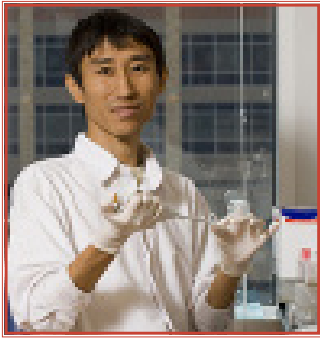
- **Kaivalya Molugu:** "Geometric Cues as Potential Regulators of Cell Metabolism in Reprogramming Human Somatic Cells."
- **Pawan Shahi:** "Blindness is caused by a compound heterozygous mutation: Where do we go from here?"
- **Nisha Iyer:** "Developing regenerative human motor neuron therapies to cure paralysis"
- **Eileen Lynch:** "In vitro modeling of skeletal muscle pathology using ALS patient iPSCs."

[The SCRMC Training Awards Program](#) was established 10 years ago to recognize and provide support for promising graduate students and postdoctoral fellows conducting stem cell and regenerative medicine research at the University of Wisconsin-Madison. The program provides unique, interdisciplinary training for future leaders in stem cell and regenerative medicine research. Additionally, this program aims to foster interdisciplinary collaborations among campus investigators.

New SCRMC focus group videos

Check out our five [new SCRMC scientific focus group videos](#) and learn more about what our researchers are working on today!

SCRMC Science and Faculty in the News



Qiang Chang, Ph.D.,
Waisman Center



Peiman Hematti, M.D.,
Medicine

- [WID researchers looking to the future with UW2020 Awards](#) (Saha, Gong, Sridharan), May 3
- [Waisman Center welcomes a center leader to director position](#) (Chang), April 5
- [Fueling hope for Rett Syndrome](#) (Chang), Feb. 26
- [New investigator program awards support innovative approaches](#) (Glukhov, Moore), Jan. 16
- [Designer molecule points to treatment for diseases caused by DNA repeats](#) (Ansari), Nov. 30
- [All-in-one repair kit makes CRISPR gene editing more precise](#) (Saha), Nov. 23
- [SCRMC recognizes 10th anniversary of iPS cells discovery](#) (Thomson, Yu), Nov. 20
- [A decade after stem cell feat, research ramps up](#) (Zhang, Thomson, Kamp), Nov. 18
- [Peiman Hematti helps steer future of cell therapy](#) (Hematti), Nov. 10
- [UW scientists create a recipe to make human blood-brain barrier](#) (Palecek, Shusta), Nov. 8

Immortal: An oral history of stem cell discovery

by Courtni Kopietz, Morgridge Institute for Research

It's rare when a single discovery ushers in a new era of science, placing a clear "before" and "after" signpost on the timeline of scientific progress.

The development of the first vaccine in 1797. The discovery of the structure of DNA in 1953. The first isolation of a human embryonic stem cell in 1998.

In November 1998, the journal Science published James Thomson's groundbreaking work on embryonic stem cells. For the first time, scientists could explore the immortal cells capable of becoming all the cells in the human body.

There has been 20 years of progress since the initial discovery spawned a new field of research, and tremendous potential exists for the future. image courtesy of Michael Schwartz of the Thomson and Murphy labs.

The discovery changed the world, and it changed Wisconsin. We reached out to the people who lived it, and they shared the experiences in their own words. [This is their story.](#)

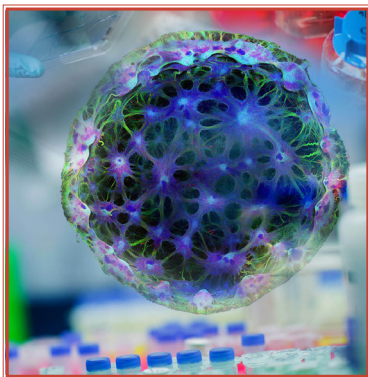


image courtesy of Michael Schwartz of the Thomson and Murphy labs.

SURF's Up Again!

This summer marks the sixth year of offering the SURF program! What is SURF? It's the [Summer Undergraduate Research Fellowship](#) organized by the [Wisconsin Stem Cell Roundtable \(WiSCR\)](#), an organization of UW-Madison graduate student and postdoctoral stem cell researchers. WiSCR, along with support from the SCRMC, is pleased to continue this highly successful program aimed at introducing talented undergraduate students to stem cell research with the help of a grad student or postdoc mentor. These undergraduate fellows have successfully pursued scientific research, including being awarded additional fellowships (e.g., Hilldale Awards, Oxford-Cambridge Scholarships) and earned acceptance into top-ranked graduate programs.

This year's selection of fellows are: Annika Madler who will be mentored by Daniel Radecki ([Samanta lab, Comparative Biosciences](#)); Patrick Kasl, mentored by Andy Brandl ([Liu lab, Surgery](#)); Jacob Rouw, mentored by Kaivalya Molugu ([Saha lab, Biomedical Engineering](#)); and Nicholas Quirini, mentored by Daniel Tremmel ([Odorico lab, Surgery](#)). Both Molugu and Tremmel are SCRMC Trainees this year (*see story on page 2.*) In addition to a stipend to support them for the summer, WiCell has added a one-time award of \$500 for WiCell services/supplies for each of the SURF trainees' labs.

Fast Fact

"In the commercial area of stem cells, from 2005 to the present, WARF has executed more than 70 commercial licenses to 47 individual entities. These entities include start-ups, some of them located here in Madison, and global pharma companies engaging in developing therapeutics."

– Carl Gulbrandsen, Ph.D., J.D., retired director of the [Wisconsin Alumni Research Foundation \(WARF\)](#), in [Immortal: An oral history of stem cell discovery](#).



Featured Researcher: Jacques Galipeau

[Learn more about Jacques Galipeau, M.D.](#), professor and assistant dean of medicine, and one of our newest SCRMC faculty members. Since his arrival in Fall 2016, Dr. Galipeau has been very active with the SCRMC, serving on our executive committee, speaking for our SCRMC campus seminar series attendees on the use of B-cells for therapy of neuroinflammatory disease, and publishing research articles on mesenchymal stromal stem cells and cancer immunotherapy, ALS, pediatric respiratory infection and more. (*Article by Susan Lampert Smith for the Department of Medicine.*)

Su-Chun Zhang accepts 2018 Regenerative Medicine Award



[Su-Chun Zhang](#), M.D., Ph.D., second from left, accepted the SCRMC Regenerative Medicine Innovator of the Year Award on May 7 at the Discovery Building. Also pictured, from the left, are SCRMC faculty member [Kris Saha](#), Ph.D., WiCell Director [Robert Drape](#), M.B.A., and SCRMC Co-Director [Bill Murphy](#), Ph.D. (Photo by Jordana Lenon)

Enjoy our 2018 Regenerative Medicine Awards Album [here](#), which includes the [SCRMC Career Enhancement Exploration Program](#) students and their spring semester internship posters.

Parting video

[Watch some of our students](#) from the Wisconsin Stem Cell Roundtable and the Student Society for Stem Cell Research bringing pipetting techniques and learning about stem cells to the public as part of UW-Madison Science Expeditions at the Health Science Learning Center on April 8.

JOIN THE SCRMC

Are you a UW-Madison faculty or staff member, or a student interested in stem cell and regenerative medicine research?

If so, the SCRMC is your central point of contact for information and education, faculty interaction, and facilitation for research and clinical development.

Operating under the [School of Medicine and Public Health](#) and the [Office of the Vice Chancellor for Research and Graduate Education](#), our center's goals are to:

- Maintain UW-Madison as leader in stem cell and regenerative medicine research and application.
- Foster increased communication about the field within campus and beyond.
- Support basic and translational research, clinical application, and sound bioethics and public policy decisions.
- Develop education, training and outreach programs.
- Enhance philanthropic support.

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Please contact [Jordana Lenon](#) if you have trouble reading this newsletter and need a more accessible format. If you supervise staff who do not have easy access to email, please print and post for all to read.

For more updates, join us on [Facebook](#), [Twitter](#), or on our [website](#).

MAKE A GIFT TO THE SCRMC

The University of Wisconsin-Madison is a leader in stem cell and regenerative medicine research, with many landmark discoveries, including the first successful isolation and culture of human pluripotent stem cells in 1998 by James Thomson and colleagues.

We are working hard to uncover the fundamental processes of human health and disease to create revolutionary new therapies for a broad range of diseases.

Won't you join us in our important mission? Thank you for reading and for your support!

Sincerely,
[Dr. Tim Kamp, Co-Director](#)

[Dr. Bill Murphy, Co-Director](#)

[Sue Gilbert, Program Administrator, Website](#)

[Jordana Lenon, Outreach, Newsletter Editor](#)

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