



# Stem Cell & Regenerative Medicine Center

UNIVERSITY OF WISCONSIN-MADISON

Welcome to our Spring/Summer 2017 newsletter. Meet our Training Award winners, listen to Kris Saha talk about stem cell engineering and gene editing research on Wisconsin Public Radio, watch David Gamm's public talk on treating blindness, enjoy photos from the 12th Annual Wisconsin Stem Cell Symposium, and catch up on more SCRMC research, faculty and students in the news!

Above all, we'd like to take this opportunity to recognize our scientists and lab members, committees, students, outreach partners, science writers, donors, patients, physicians and advocacy groups for all of your support on the [SCRMC's 10th anniversary today, May 17](#). Thanks for making it all happen!

## Congratulations to our 2017 Training Award Winners



(Photos by Jordana Lenon and Laura C Vanderploeg)

The SCRMC Education Committee, chaired by Kris Saha, assistant professor of biomedical engineering, was pleased to offer [SCRMC Training Awards](#) this year to two graduate and two postdoctoral researchers. Each award provides support for one year.

Clockwise from top left, with winners pictured on the left and their SCRMC faculty mentors on the right, are:

- **Brandon Kim**, for *iPSC derived neurovascular unit modeling of bacterial meningitis*. Mentor: Eric Shusta, professor of chemical and biological engineering.
- **ChangHwan Lee**, for *Quantitative single-molecule analyses of Notch signaling in health and disease*. Mentor: Judith Kimble, professor of biochemistry.
- **Daniel Tremmel**, for *Characterization of pancreatic extracellular matrix (ECM) and its role in  $\beta$  cell differentiation, maturation, and function*. Co-mentors: Sara Sackett, assistant scientist, surgery, and Jon Odorico, professor of surgery (transplant research and development unit).
- **Zafirah Zaidan**, for *Role of HP1 proteins and H3K9 methylation in pluripotency and differentiation*. Mentor: Rupa Sridharan, assistant professor of cell and regenerative biology and Wisconsin Institute for Discovery.

# Wisconsin Stem Cell Symposium Recap



Enjoy Sue Gilbert's symposium [photo album](#)

[“Engineering Cells and Tissues for Discovery and Therapy”](#) brought 300 people to the [BioPharmaceutical Technology Center Institute](#) for the 12th annual Wisconsin Stem Cell Symposium on April 19. More than 30 generous symposium sponsors were pleased to welcome our attendees, including [seven internationally recognized speakers](#) and 33 poster presenters. These included 10 students and trainees presenting “rapid-fire” poster talks in the auditorium.

The organizing committee included Karin Borgh and her staff from the BTC Institute, Symposium co-chairs Prof. Kris Saha and Prof. Sean Palecek, and the Directors and staff of the SCRMC.

Poster contest winners were:

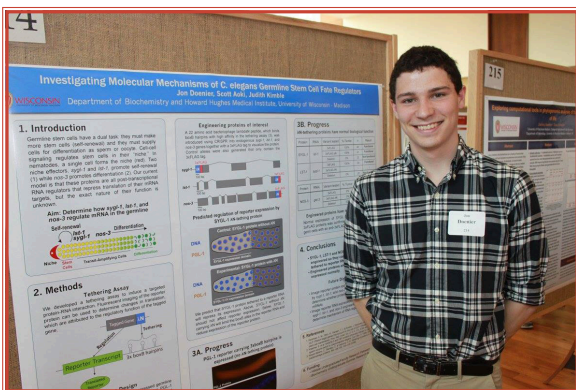
- 1st place: Erin Kropp (Biochemistry, Rebekah Gundry lab, Medical College of Wisconsin), “Metabolic shift with cardiomyocyte differentiation promotes cell survival during NAMPT inhibition: applications for eliminating unwanted cells.”
- 2nd place: Yue Li (Neuroscience, Zhao lab, UW-Madison), “MDM2 inhibition rescues neurogenic and cognitive deficits in a mouse model of fragile X syndrome.”
- 3rd place: HyunJun Kang (Pathology & Laboratory Science, Slukvin lab, UW-Madison), “GATA2 is dispensible for generation of hemogenic endothelium but acquired for endothelial-to-hematopoietic transition.”

Listen to [Kris Saha's 10-minute interview on Wisconsin Public Radio](#) to learn more about where cell and tissue engineering research is heading and what therapies are on the horizon.

## UW2020: WARF Discovery Initiative Awards

Several SCRMC faculty members are on this spring's [UW2020 grant winning research teams](#). Projects include those involving [CRISPR/Cas9 and Alzheimer's disease](#), [cardioimmunotherapy](#), [iPS cell-derived leukocytes](#), [nuclear magnetic resonance \(NMR\) instrumentation](#), and [micro-bio fabrication](#).

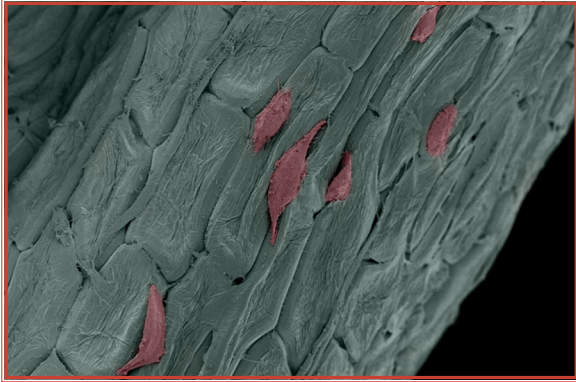
## SCRMC Labs' Students Represent



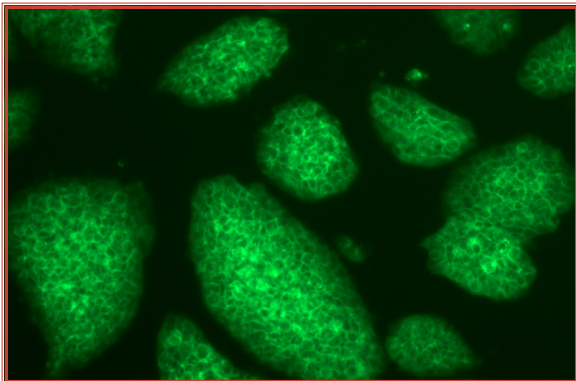
More than 30 students mentored by faculty and graduate students of the SCRMC presented posters at the Undergraduate Symposium April 13 at Union South. Pictured is Jon Doenier, a junior in Judith Kimble's lab and vice-president of the [Student Society for Stem Cell Research](#) on campus.

(Photo by Jordana Lenon)

# SCRMC Science and Faculty in the News



Human fibroblast cells, common connective tissue cells, growing on decellularized parsley. A team of UW–Madison researchers from the lab of bioengineering Professor William Murphy is exploring the use of plants to make the three-dimensional structures that may one day be used to repair bone and tissue. (Photo: Gianluca Fontana)



Micrograph of induced pluripotent stem cells generated from artificial transcription factors. The cells express green fluorescent protein after a key gene known as Oct4 is activated. (Photo: Asuka Eguchi.)

- [Hands-on work at UW lab leads high school senior to science stratosphere](#), April 24
- [UW Treats First Participant in Trial of Stem-Cell Therapy for Heart Failure](#), April 17
- [Morgridge researcher Melissa Skala scores in cancer research 'lightning round'](#), April 14
- [Cell Therapy Could Reduce Bone-Marrow Transplant, Radiation Injury Complications](#), April 13
- [Tim Kamp Appointed to Dr. Herman and Ailene Tuchman Chair in Clinical Cardiology](#), April 7
- [Susan Thibeault wins Kellett Mid-Career Award](#), March 30
- [Parsley and other plants lend form to human stem cell scaffolds](#), March 20 (Featuring Gianluca Fontana's Cool Science Images 2017 winning photo, at left)
- [With human spinal cord tissues in a dish, UW-Madison engineer aims to accelerate disease treatment](#), March 10
- [Study shows stem cells fiercely abide by innate developmental timing](#), Feb. 28
- [Darcie Moore wins Sloan Fellowship](#), Feb. 21
- [Alta Charo contributes to human gene editing report](#), Feb. 14
- [UW scientists find key cues to regulate bone-building cells](#), Feb. 2
- [JangoBio joins Madison's growing stem cell industry](#), Jan. 27
- [Watching gene editing at work to develop precision therapies](#), Jan. 24
- [Startup harnesses stem cells for new medical uses](#), Jan. 20
- [Am I a stem cell? How do I know?](#), Jan. 19
- [Immunotherapy: Harnessing Cellular Systems to Fight Deadly Diseases](#), Jan. 2
- [Designer switches of cell fate could streamline stem cell biology](#), Dec. 5 (Photo of green iPS cells at left)
- [Norman Fost Earns Prestigious National Award](#), Nov. 29
- [Darcie Moore Receives Gruber International Research Award](#), Nov. 16
- [Can artery 'banks' transform vascular medicine?](#), Nov. 9
- [First cellular atlas of DNA-binding molecule could advance precision therapies](#), Nov. 8
- [Brain cells by the billions: UW spinoff sells neural cells to drug researchers](#), Nov. 1

## Fast Fact

There are 6,079 clinical trials involving stem cells listed as going on or completed around the world right now, according to [clinicaltrials.gov](http://clinicaltrials.gov).

## First Regenerative Medicine Innovation Award



David Gamm (left) with Kris Saha, assistant professor of Biomedical Engineering (right). Enjoy Sue Gilbert's event's [photo album](#)

David Gamm, M.D., Ph.D., associate professor of ophthalmology and visual sciences, accepted the SCRMC's [Inaugural Regenerative Medicine Innovation Award](#) May 2 at the Discovery Building. Three local regenerative medicine companies — [Cellular Logistics](#) (Dr. Eric Schmuck), [JangoBio](#) (Dr. Craig Atwood), and [Stem Pharm](#) (Dr. Connie Lebakken) — were featured as Emerging Innovators. The event also included poster presentations from students in the SCRMC Career Enhancement Opportunities (CEO) Program, with a focus on contemporary topics in the regenerative medicine industry.

Thank you to [WiCell](#), [Thermofisher Scientific](#), and [Stem Cell Technologies](#) for sponsoring this event!

For more background, watch Prof. Gamm's [excellent public talk](#) on progress in stem cell research to treat blinding disorders, which he presented at Wednesday Nite @ the Lab Feb. 8.

## SURF's Up!

Stay tuned for a feature on our 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 summer marks the fifth year of offering the program!

## Save the Date!

Please save Friday, Sept. 15, for our annual Fall Conference. This year, our organizing committee is made up of the SCRMC Trainees (Brandon Kim, ChangHwan Lee, Daniel Tremmel, and Zafirah Zaidan) along with representatives from WiSCR (Fola Arowolo and Kaivalya Molugu). Dr. Omer H. Yilmaz, assistant professor of biology at MIT will be the keynote speaker.

## 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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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.

As you can read in our [SCRMC 2016 Update](#), we are working hard to uncover fundamental processes of diseases and advance better treatments.

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](#)

Stem Cell and Regenerative  
Medicine Center  
8457 WIMR II  
1111 Highland Avenue  
Madison, WI 53705-2275  
Phone: 608.263.2982