



Stem Cells @ UCR

Stem Cell Center Newsletter – March 2023, No. 9

UCR Researchers Develop “A Magneto-Responsive Hydrogel System” for the Dynamic Mechano-Modulation of Stem Cell Niche”

A team of researchers led by **Dr. Jin Nam** (Bioengineering) have demonstrated that pluripotent stem cells grow differently depending on the local stiffness of the hydrogel, resulting in the generation of different types of cells. This finding provides a new way to dynamically and non-invasively control stem cell behaviors, which could potentially lead to more effective ways to control stem cells for potential treatments of a wide range of diseases.



Dr. Jin Nam

This study is published in *Advanced Functional Materials*. [Link to article](#).

What's Inside

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Save The Date!

IESCC's Annual Symposium - Friday, **November 3rd, 2023**
Hosted by CUSM

Stem Cell Events and Activities

Annual Inland Empire Stem Cell Consortium Symposium

On November 4th, 2022, the Annual Symposium was hosted by Cal State University, San Bernardino (CSUSB). Researchers and students from Western University, UCR, Loma Linda University, CSUSB, and the California University of Science and Medicine came together to share a day of learning, networking, and discussing their latest stem cell research through podium and poster presentations.

Keynote Speakers **Dr. Ching-Ling (Ellen) Lien**, an Associate Professor from USC, spoke about “Cardiac vasculature supports heart development and regeneration,” and **Dr. Nicole Sparks**, an Assistant Professor at UCI, spoke on the “Exposure to environmental toxicants impairs hESC osteoblastogenesis”. Both delivered very interesting platform presentations.

Congratulations to the winners of the poster session at the Annual Symposium!



1st Place: Shabnam Etemadi – middle left (Mentor: Dr. Prue Talbot (right) – UCR)

2nd Place – Ann Song – middle right (Mentor: Dr. Prue Talbot – UCR)

3rd Place – Cameron Fraser – left (CSUSB Bridges Program - Dr. Aileen Anderson’s Lab - UCI)

UCR and City of Hope Winter Retreat

On January 17th the CIRM Stem Cell Training Programs from UCR and City of Hope held a Winter Retreat to engage both campuses in networking and scientific communication. All City of Hope trainees and TRANSCEND trainees from UCR presented 7-minute talks to discuss their research projects. The retreat fostered excellent discussions and has opened the door for future collaborations between the campuses.



Research & Innovation

Recent Publications!

Learn about Stem Cell Research @ UCR

Vaishali Krishnadoss, Baishali Kanjilal, Arameh Masoumi, Aihik Banerjee, Iman Dehzangi, Arash Pezhouman, Reza Ardehali, Manuela Martins-Green, Jeroen Leijten, and Iman Noshadi. **Programmable bio-ionic liquid functionalized hydrogels for in situ 3D bioprinting of electronics at the tissue interface.** *Materials Today Advances*, Volume 17, 2023, 100352. <https://doi.org/10.1016/j.mtadv.2023.100352>.

Martina M Sanchez, Isabella A Bagdasarian, William Darch, and Joshua T Morgan. **Organotypic cultures as aging associated disease models.** *Aging*. 2022 Nov 22;14(22):9338-9383. DOI: [10.18632/aging.204361](https://doi.org/10.18632/aging.204361).

Anke Dienelt, Kevin C. Keller, and Nicole I. zur Nieden (2022). **High glucose impairs osteogenic differentiation of embryonic stem cells via early diversion of beta-catenin from Forkhead box O to T cell factor interaction.** *Birth Defects Research*, 114(16), 1056– 1074. <https://doi.org/10.1002/bdr2.2085>

Ruoyu Sheng, Jing Mu, Roman V. Chernozem, Yulia R. Mukhortova, Maria A. Surmeneva, Igor O. Pariy, Tim Ludwig, Sanjay Mathur, Changlu Xu, Roman A. Surmenev, and Huinan Hannah Liu. **Fabrication and Characterization of Piezoelectric Polymer Composites and Cytocompatibility with Mesenchymal Stem Cells** *ACS Appl. Mater. Interfaces*. 2023 15 (3), 3731-3743. DOI: [10.1021/acsami.2c15802](https://doi.org/10.1021/acsami.2c15802)

Robyn Goodrich, Youyi Tai, Zuyang Ye, Yadong Yin, and Jin Nam. **A Magneto-Responsive Hydrogel System for the Dynamic Mechano-Modulation of Stem Cell Niche.** *Adv. Funct. Mater.* 2023, 2211288. <https://doi.org/10.1002/adfm.202211288>

Have an announcement for the next newsletter? Email Rachel Behar (rbeha001@ucr.edu), the Academic Coordinator of the UCR Stem Cell Core.

Spotlight – Where are they now?

Shane Sakamaki-Ching, Ph.D. Research Scientist at Kite Pharma

Received his Ph.D. from UCR in Cell,
Molecular and Developmental Biology

Mentor: Dr. Prue Talbot



From Shane: “I’m a Research Scientist at Kite Pharma in Santa Monica. I’m leading, developing, and managing a research team for the incorporation of new cellular technologies to support the process development needs for Kite Pharma’s engineered allogenic CAR T-cell therapy products.

My other duties include report writing and data analysis for the FDA’s investigational new drug approval for our new cellular therapies. I act as a matrix team lead for cross department communication, while acting as a manager to support the logistics and direction of my research team for completion of projects.”

Interested in learning more about stem cells?

CMDB 207 - Stem Cell Biology and Medicine will be offered in the Spring Quarter! This course is open to graduate students from all Inland Empire Stem Cell Consortium campuses and advanced undergraduates.

CMDB 256 – Spring Stem Cell Seminar – platform talks from stem cell researchers around the world. All are welcome to attend – ask to join our email list to receive updates.