Stem Cells Specialty Section

Newsletter

September 2025

President's Message

Dear Fellow Stem Cell Specialty Section (SCSS) Members,

I am both honored and excited to serve as President of the SCSS for the 2025–2026 term. Our members continue to make meaningful contributions to the field of toxicology through the innovative application of stem cell technologies. Thank you for the opportunity to lead and represent such a vibrant and dedicated community of professionals.

As we begin this new term, I would like to express my sincere gratitude to the SCSS Executive Committee and all members for a successful 2024–2025 term. A special thanks goes to our outgoing president, Dr. Nicole zur Nieden, for her exceptional leadership over the past year. I would also like to recognize our other departing officers for their invaluable contributions: Dr. Blake Anson (Past President) and Ms. Shabnam Etemadi (Graduate Student Representative).

I am pleased to introduce our incoming executive team: Dr. Sebastian Medina (Vice President), Dr. Xian Wu (Vice President-Elect), Dr. Rong Li (Secretary/Treasurer), Dr. Erik Tokar (Councilor), Dr. Katherine Zychowski (Councilor), Dr. Anke Tukker (Postdoctoral Representative), and Ms. Madeleine Strom (Student Representative). Together, we are committed to advancing SCSS's mission and supporting the integration of stem cell technologies into toxicology research. This year, we aim to:

- enhance communication through social media and newsletters,
- foster collaborations by cohosting webinars with other SOT Specialty Sections,
- facilitate research through the development of a stem cell resource-sharing database, and
- promote careers in stem cell toxicology by launching best publication awards for postdoctoral and graduate student members.

OFFICERS

President
Xiugong Gao, U.S. Food and Drug Administration

Vice President
Sebastian Medina, University of New Mexico

Vice President-Elect
Xian Wu, East Carolina University

Past President, Councilor
Nicole Zur Nieden, University of California, Riverside

Secretary/Treasurer
Rong Li, U.S. Food and Drug Administration

Councilors
Erik Tokar, National institute of Environmental Health Sciences
Katherine Zychowski, University of New Mexico

Postdoctoral Representative
Anke Tukker, Purdue University

Graduate Student Representative
Madeleine Strom, Purdue university

I encourage each of you to engage with these initiatives, attend our events, share your expertise, and help grow our community by inviting colleagues and friends to join SCSS. Together, we can elevate the impact of stem cell research in toxicology and drive scientific excellence.

Please don't hesitate to reach out to me or any member of our executive committee with questions, suggestions, or ideas. I look forward to working with all of you and hope to see you at the 2026 SOT Annual Meeting in San Diego, CA.

With warm regards,

Xiugong Gao, PhD

2025–2026 President, Stem Cell Specialty Section

Join the Stem Cells Specialty Section!

About the Stem Cells Specialty Section:

"The Stem Cells Specialty Section (SCSS) is a subgroup of the Society of Toxicology membership that provides a forum for SOT members interested in stem cells and stem cell toxicology. Section members will have expertise in all types of stem cell models including embryonic, fetal, progenitor, induced pluripotent, mesenchymal, and immortalized stem cell lines. SCSS is comprised of academic, government, industry, clinical, and preclinical researchers in order to relate the developments in stem cells research to the activities of SOT to stimulate interest and growth in stem cells as it relates to the general science of toxicology. At the SOT Annual Meetings, the Section sponsors Continuing Education courses and Symposia as well as awards for students and postdoctoral fellows. Elected officials consist of the President, Vice President, Vice President-Elect, three Councilors, and the Secretary/Treasurer. There also are Student and Postdoctoral Representatives."

If you work with stem cells in any way shape or form or are interested in their potential, add our specialty section to your membership when renewing this year!

We are currently updating our mission statement. Stay tuned!

Officers for 2025-2026

Meet the new SCSS Officers that started their term May 2025. Read more here

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National Postdoc Appreciation Week

From September 15 until September 19, it is National Postdoc Appreciation week! This year's theme is communicating your science and research. The SCSS wants to help postdocs with this and put them in the spotlight. Do you have a wonderful postdoc in your lab that is doing fascinating stem cell related research? Let us know by emailing our postdoctoral representative Anke Tukker and we will make sure to highlight this person during postdoc appreciation week on our LinkedIn page.

News, Research, and Reviews

2026 SOT Meeting
Get ready for the next SOT meeting! The 2026 meeting will take place from Sunday March 22 to Wednesday March 25, 2026. In contrast to previous years, this meeting will end Wednesday and there will be NO programs on Thursday. Abstracts are due November 13, 11:59 pm (US EST, UTC-5). Find more information on abstract submission here.

Postdoc Members
Find out what SOT does for postdocs by visiting the PDA's website.

Apply for the NEXT program award due September 30, 2025

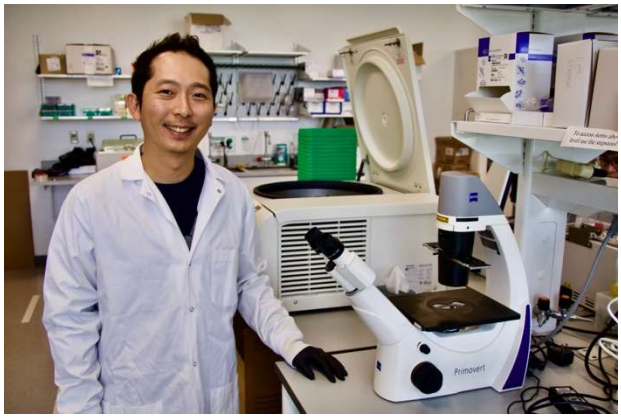
Graduate Student Members
Apply for the STEP awards due September 30, 2025

Publications
We'd love to highlight your stem cell research. Share your publications with us and we will highlight your work in this newsletter and on our social media, for example on our LinkedIn page.

Researcher Highlights

Our pick of exciting researchers in Stem Cell Toxicology for this newsletter.

Hyunjin Kim, Purdue University



My name is Hyunjin Kim, and I am a PhD candidate in the Toxicology program at Purdue University. Under the mentorship of Dr. Aaron Bowman, I am investigating the role of chronic manganese (Mn) toxicity in the etiology of Alzheimer's disease (AD). To this aim, I utilize cortical neurons and astrocytes differentiated from human induced pluripotent stem cells (hiPSCs) generated from both neurotypical and AD (familial and sporadic) patients to dissect the contribution of Mn neurotoxicity to transcriptomic and functional alterations as a function of individual AD genetic risk. As I embark on my final academic year of my PhD training, I look forward to sharing the results of my study with the broader scientific community, as well as exploring opportunities for an academic postdoctoral position.

During my PhD training, I developed a profound appreciation for human iPSC technology. From the works of Shinya Yamanaka and James Thomson, Ian Wilmut and the world's most famous sheep Dolly, characterization of hematopoietic stem cells by James Till and Ernest McCulloch, isolation of mouse embryonic stem cells by Gail Martin, Martin Evans and Matthew Kaufman, John Gurdon's reprogramming studies in amphibia, the Organizer experiment by Hans Spemann and Hilde Mangold, Hans Driesch's sea urchins, Wilhelm Roux's pricking experiment, August Weismann's germ-plasm theory, and to the very first use of the term 'stem cells' or Stammzellen by Ernst Haeckel in the 1860s; realizing that the very cells sitting in our lab's incubator are the legacy and quite literally, a culmination of more than a century's work of scientific progress instills me with a profound sense of awe and wonder. I was enthralled by the elegance with which iPSCs recapitulate *in vivo* neurodevelopment and the beautiful developmental biology principles underlying directed differentiation methods. The continued development of hiPSC technology as well as methods for generating various types and subtypes of neurons and glial cells lets me know that there are great things lying ahead and knowing that there are so many novel discoveries to be made fills me with great excitement.

My doctoral training in Dr. Bowman's Lab thus far has been nothing short of transformative and I owe him a debt of gratitude for enabling me to see the world in a new point of view, through the eyes of a scientist, and practicing the scientific method. Perhaps the best experience of my graduate career was thinking about the biological/toxicological implications of my single cell RNA-seq data and coming up with a unifying theory to make sense of all the different pathways altered and from there, conceptualizing my idea into the next hypothesis and designing experiments to validate that hypothesis to propose a mechanistic model under that framework. His mentorship catalyzed my decision to pursue an academic postdoctoral position for my next career step in 2026. For my postdoctoral career, I wish to

cultivate more expertise on stem cell models of neurodevelopment/neurodegeneration, neurons and glial models (from astrocytes, microglia, to oligodendrocytes), and become the best in utilizing this powerful model system and apply my skillset to address toxicological questions using cutting-edge tools such as multi-omics and gene-editing technology. With this, I hope to in the long-term, through commitment and dedication, contribute to our cause and purpose of advancing our knowledge on the biological underpinnings and toxicological principles surrounding neurological disorders, and contribute to our mission of promoting human health.

Finally, I am grateful for the Stem Cells Specialty Section for the opportunity to write this piece and the SOT as a whole, a Society of remarkable scientists doing extraordinary research to move us forward. Attending the annual SOT meetings is always a great pleasure and it is a privilege to be able to witness and experience the passion and commitment demonstrated by the amazing research done by all the members. I look forward to connecting and sharing science with fellow students and more senior scientists in the meetings to come.

Victoria de Leeuw, RIVM the Netherlands

My name is Victoria de Leeuw, and I am a neurotoxicologist at the National Institute for Public Health and the Environment in the Netherlands. After graduating from the University of Edinburg with a Masters in Integrative Neuroscience, I was not exactly up for a “classical” neuroscience PhD. Searching for a connection to the world at large I found a PhD position in neurotoxicology that could provide this link to our everyday life. I specialized during my PhD in the development of stem cell-based models for developmental neurotoxicity testing, specifically focusing on neuronal differentiation as an endpoint and omics technologies. My PhD project was sponsored by the animal welfare NGO Sichting Proefdiervrij. This funding, donated by people that want to support animal-free innovations, strengthened me in making the most of my project and actively disseminate to the general public about this topic.

In my current job, I continue my research on the use of stem cells in developmental neurotoxicity testing, as well as extending my work into the field of neurodegeneration, with a special focus on Parkinson’s disease. Additionally, I also work on the regulatory application of New Approach Methodologies (NAMs) for New Generation Risk Assessment (NGRA), taking a bird’s eye view on the implementation of animal-free innovations in the regulatory context. What I really like about my job is that I have the opportunity to work on the technology as well as thinking about how to get these innovations further and how to communicate about them, a true holistic approach. In this same spirit, I co-founded Young TPI (Transition Programme for Innovation without the use of animals), a network of young people that aims to make the next scientific generation to go animal testing free. The network is open to any young person who is interested in the topic, whether you are working on animal-free innovation and/or animals. To make the transition, we need everyone!