March 2014

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President's Message

Greetings and thanks for reading (at least the first line anyway) the Newsletter for the Stem Cells Specialty Section!

If you are like me and have spent the winter months endlessly shoveling snow, in some sort of outtake from the snow maze scene in the movie, "the Shining", you are probably ready for the SOT annual meeting and its desert-like local of Phoenix. All work and no play definitely make Jack a dull boy. There, in the hot sun, we can at length discuss how dry heat is to heat, what dry heaves are to emesis.

Kidding aside, this year's annual meeting is shaping up to be a banner day for this section's area of interest. In a clear demonstration of the eminence of our topic, "Stem Cell Models in Integrated Biology" is one of the scientific themes of the annual meeting. I am looking forward to hearing the opening plenary lecture by Sir John B. Gurdon, one of the recipients of the 2012 Nobel Prize in Physiology or Medicine. His fundamental work on somatic cell nuclear transplant in frogs was one of the big moments in learning that mature cells can be reprogrammed to become pluripotent. The list of stem cell related presentations are elsewhere in this newsletter, but one of particular interest is the continuing education course on stem cells that includes, the past, current and future presidents of the stem cells specialty section. Although it likely won't be carried on C-SPAN, the presentations will be webcast and recorded for those who would rather sunbathe and watch the talks on their own time later on.

In conclusion, it has been a great year for stem cells and for our specialty section. Not only are we seeing increased incorporation of stem cell biology into the mainstream of mechanistic and descriptive toxicology, we are also growing as a specialty section. With 121 members now, we've grown past the early, fragile years that can doom a specialty section and can now boldly look towards the future and set lofty goals. To this point, I'd like to recognize Erik Tokar who's unwavering support from his role secretary-treasurer and soon to be VP-elect has provided a steady hand through these early years of this section. I also look forward to seeing the section continue to prosper under next year's President Jingbo Pi.

I thank you for reading all the way through the president's message and look forward to talking with many of you at our specialty section meeting on Tuesday night in the Estrella room in the Sheraton.

Safe Travels

Kyle L. Kolaja, PhD, DABT, Fellow ATS
President, Stem Cells in Toxicology Specialty Section

Officers

President
Kyle Kolaja

Vice President
Jingbo Pi

Vice President-Elect
Alex Merrick

Secretary/Treasurer
Erik Tokar

Councilors
Lamia Benbrahim-Tallaa
Charles Lindamood III
Mike Waalkes (Past President)

Postdoctoral Representative
Olive Ngalame

Student Representative
Justin A. Colacino

Newsletter Editor
Erik J. Tokar

Website Liaisons
Olive Ngalame
Justin A. Colacino

Renew Your Stem Cells Specialty Section Membership

Students and Postdocs get one FREE specialty section membership with their SOT membership.

When renewing your SOT membership dues, do not forget to renew your membership in the Stem Cells Specialty Section (SCSS). Also important to keeping our membership growing and supporting the future of this developing Section is to recruit as many new members as possible. The more members that we have, the more financial support we get from SOT. Mentors, encourage your Students and Postdoctoral Fellows to join the Section. Students and Postdocs, remember that you get one FREE specialty section membership with your SOT membership.

Student Award Results and Announcements

Congratulations to the Recipients of the 2013 SCSS Awards for Research Excellence

Postdoctoral Award Recipients
1st Place—Ntube N. O. Ngalame, National Toxicology Program Laboratory, DNTP, NIEHS
"Aberrant microRNA Expression Correlates with RAS Activation in Malignant Transformation of Human Prostate Epithelial and Stem Cells by Arsenic "
Mentor—Michael Waalkes, PhD

2nd Place—Jayanta K. Das, Center for Molecular Toxicology and Carcinogenesis, Penn State University
"Vascular Endothelial Cells Exposed to PCB 153 Show Increased Expression of Stem Cell Markers"
Mentor—Quentin Felty, PhD

Student Award Recipients
1st Place—Eric Beier, Department of Environmental Medicine, University of Rochester
"Removal of the Sclerostin Gene Protects Against Lead-induced Reduction of Vertebral Bone Mass and Strength"
Mentor—J. Edward Puzas, PhD

2nd Place—Surendra Singh, Department of Pharmaceutical Sciences, University of Colorado AMC
"Expression and Role of ALDH1B1 in Pancreatic Cancer"
Mentor—Vasilis Vasiliou, PhD

Continued on Page 3

And The 2014 Awards Go To…

The Stem Cells Specialty Section is proud to announce that this year it received a record number of applications for its Student and Postdoctoral Fellow Awards for Research Excellence in Stem Cell Toxicology. Applicants were asked to submit an extended abstract of the work they will be presenting at this year's Annual Meeting and a letter of support from their advisors. The quality of abstracts was very high with each submission containing exciting new research being conducted by the Section's younger members. This high level of research is promising for a bright future for the Stem Cells Specialty Section. Reviewing the submissions was not an easy task for the judges; they had to make some tough decisions. The results were very close! One 1st Place and one 2nd Place awardee were selected for both the Graduate Student and the Postdoctoral categories. Awardees will receive a monetary award and a certificate of recognition. This year's awardees are…going to be announced at the Section's reception on Tuesday, March 25th, 6pm in the Estrella Room of the Sheraton.

The Stem Cells SS received a record number of Award applications this year.

Membership News

Membership in the Stem Cells Specialty Section has continued to grow steadily since its creation in 2011. This past year was no exception with another impressive increase in membership of 24%!! Such numbers are indeed encouraging, but it is still important to support the future of the Section. Therefore, we would like to encourage all Section members to remind their colleagues, co-workers, friends, etc. to join the Stem Cells Specialty Section. Students and Postdoctoral Fellows are important resources and are instrumental to the growth and future success of this dynamic Section and of the SOT. We encourage all interested Students and Postdoctoral Fellows to become members of the Stem Cells Specialty Section. Remember, Students and Postdoctoral Fellows are eligible to join one Specialty Section FREE with membership in SOT. Why not make that Section the Stem Cells Specialty Section?!?

The SCSS membership has continued to grow in each year of its existence!!

Sponsored Sessions at the 2014 Annual Meeting

The SCSS is sponsoring 6 sessions at the 2014 Annual Meeting in Phoenix.

The Stem Cells Specialty Section is sponsoring several sessions at the 2014 Annual Meeting in Phoenix. This year the Section is sponsoring 1 Continuing Education course, 3 Symposia, and 2 Workshops. Several Section members and officers are serving as chairpersons and/or speakers in many of these sessions. The courses are listed below. Thank you to those Section members who helped to organize and submit proposals for the 2014 Annual Meeting! Please make plans to attend these sessions.

Continuing Education

PM12: Stem Cells in Toxicology
Chairs: Erik Tokar and Mike Waalkes

Speakers and Titles:
Erik Tokar – The Concepts and Methods for Stem Cells

Mike Waalkes – Stem Cells in Carcinogenesis

Aaron B. Bowman – Application of Stem Cells in Toxicology and Regenerative Medicine

Kyle Kolaja – Stem Cells in Safety Testing

Symposia

Induced Pluripotent Stem Cells and Their Differentiated Progeny Cells: Implementation in Toxicity Testing
Chairs: Kyle Kolaja and Blake Anson

Speakers and Titles:
Salman Khetani – Engineering the Microscale Environment around iPSC-derived Human Hepatocytes *In Vitro*.

Paul Watkins – iPSC-Derived Liver Cultures to Study Mechanisms Underlying Idiosynchratic Hepatotoxicity

Ingrid Druwe – Induced Pluripotent Stem Cell-Derived Neurons as a Human Model for Testing Environmentally-Induced Developmental Neurotoxcity

Hong Shi – Improved Translation from Preclinical to Clinical outcomes Using Human iPSC-Derived Cardiomyocytes

Use of Stem Cells in Toxicity Testing – From Basic Research to Personalized Toxicology

Chairs: Stephanie Dhalluin and Yvonne Will

Speakers and Titles:
James Thomson – Human Pluripotent Stem Cells as Tools for Safety Toxicology

Chris Goldring – The Applications of Stem Cell-Derived Hepatocytes in Mechanism-Based Drug Safety Assessment

Joseph Wu – iPSCs for Cardiac Drug Testing

Daniele Zink – In Vitro Models for the Prediction of Nephrotoxicity in Humans

The Role of the AHR in Stem Cell Development and Lineage Specification
Chairs: David Sherr and Alvaro Puga

Speakers and Titles:
Alvaro Puga: The AHR Modulate Cardiomyogenesis in Embryonic Stem Cells

Thomas Gasiewicz – The AHR is a Key Factor in the Regulation of Hematopoietic Stem Cells and Their Protection from Premature Exhaustion, Stress, and Hematopoietic Disease

Eleftherios Papoutsakis – A Role for the Aryl Hydrocarbon Receptor (AHR) on Platelet Function

George Murphy – The AHR Regulates the Production and Specification of Bipotential Hematopoietic Progenitor Cells

David Sherr – The AHR Controls Breast Cancer Stem Cell Development and Function

Workshops

Stem Cell-Derived Cardiomyocytes: An Alternative Cardiac Toxicity Model for Assessing Drug Safety and Chemical Health Risk
Chairs: Syril Pettit and Kevin Dreher

Speakers and Titles:
Syril Pettit – Transitioning Cardiac Stem Cells from Research Platforms to Predictive Tools

Huge Vargas – Stem Cells-Derived “Cardiomyocytes” and Their Application to Cardiac Safety Assessement: Ready for Primetime?

Mark Mercola – Stem Cell-Derived Cardiac Cells in High-Throughput Screens for Modulators of Contractility

Nick Thomas – High Content Screening of Bioenergetic Modulation of Kinase Inhibitor Mitochondrial Toxicity in Human Stem Cell-Derived Cardiomyocytes

Edward Hunter – Evaluating Chemical Safety, Molecular Targets, and Toxicity Pathways in Mouse Embryonic Stem Cell Differentiation to Cardiomyocytes

Somatic Cell Therapy – Paradigms for Investigational new Drug (IND)-Enabling Programs, Scientific and Regulatory Considerations, and Clinical Translation

Chairs: Charles Lindamood and Jason Hamilton

Speakers and Titles:
Patrick Au – Developing Cell Therapy Products: US FDA Preclinical Regulatory Considerations

Lauren Black – The Shaky Bridge: Animal Model Translation for Cell Therapies and Impact on Clinical Success

Joy Cavagnaro – Considerations in Dose Extrapolation of Stem Cell-Based Therapies: Optimizing First in Human Trial Design

Jason Hamilton – Intravenous Administration of Human Bone Marrow-Derived MultiStem® Cells after Ischemic Stroke: Preclinical Safety, Efficacy, and Mechanisms of Action Studies to Support IND Submission and Clinical Trial Design

John Ludlow – Regeneration of Native-Like Neo-Urinary Tissue from Nonbladder Cell Sources – Development of the Neo-Urinary Conduit ™

Clifford Sachs – Nonclinical Development of Human Umbilical Tissue-Derived Cells (hUTC) for Degenerative Retinal Disease

SOT 2015 Program

It's never too early to start preparing for the 2015 Annual Meeting. Submit proposals for Workshops, Continuing Education Courses, Symposia, Informational Sessions, and/or Roundtables to Erik Tokar (tokare@niehs.nih.gov). Alternatively, bring your ideas to the Stem Cells reception to be discussed during the business meeting. The Stem Cells Specialty Section can also help you develop your ideas for proposals by offering advice on putting together a competitive proposal, potential speakers for your proposal idea, etc. Participating in sessions at the Annual Meeting is a great way to help develop your career. Deadline for proposal submissions is fast approaching!! **The deadline for submissions is April 30, 2014**. For more information, visit www.toxicology.org/ms/SciSess_proposal.asp

Stem Cells Specialty Section Website

Check out the newly updated Stem Cells Specialty Section website by visiting http://www.toxicology.org/isot/ss/scss/index.asp. The website is an excellent source to find out all about the Section, including information on Awards, Specialty Section Officers, By-Laws, Membership and Joining the SCSS, News and Events, and the Annual Report.

Newly-Elected Officers

The Stem Cells Section held elections in January for a new VP-Elect, Junior Councilor, Secretary/Treasurer, and Student Rep. Please join us in welcoming the new officers: Erik Tokar (VP-Elect), Colleen Hegg (Secretary/Treasurer), Anna Vetrano (Junior Councilor), and Sanket Gadhia (Student Rep). Like all Specialty Sections, the SCSS runs on volunteer power. The more active our volunteers, the more exciting and valuable the Specialty Section is, and the larger an impact it makes to the overall Society. The Section thanks the incoming officers for volunteering their time to the Section and the Society.

SOT CCT Meetings Eligible for Seed Money and Profit Sharing

SOT Sponsors two types of meetings outside of the SOT Annual Meeting: Contemporary Concepts in Toxicology (CCT) and Non-SOT meetings. CCT meetings are one- to two-day focused, open registration, scientific meetings in contemporary and rapidly progressing areas of toxicological sciences. Non-SOT meetings are sponsored by other not-for-profit organizations and SOT will either endorse or provide sponsorship money to toxicology-related meetings.

CCT meetings could provide seed money and profit sharing for things like the Stem Cells Specialty Section endowment

The Society will underwrite all the liabilities of the CCT meeting with the expectation that the meeting will at least break even financially. The goal of providing $25,000 seed funds is to stimulate the creation of CCT meeting proposals.

For more information about CCT meetings, please visit the SOT Web site.

Stem Cells Specialty Section Logo

The Stem Cells Specialty Section needs a logo. If you have ideas or suggestions for a logo, please send them to Erik Tokar (tokare@niehs.nih.gov).