



## **President's Message**

The Stem Cells Specialty Section (SCSS) held its reception at the Annual Meeting in San Francisco, with approximately 40 members in attendance. The SCSS acts as the focal point for the interaction of SOT members working with stem cells and stem cell toxicology. Section members have expertise in all types of stem cell models including embryonic, fetal, progenitor, induced pluripotent, mesenchymal, and immortalized stem cell lines. The SCSS is composed of academic, government, industry, clinical, and preclinical researchers and was conceived in order to integrate developments in stem cell research to the activities of SOT and to stimulate interest and growth in stem cells as they relate to toxicology. The Section serves as a focus for proposing sessions for future Annual Meetings, exchanging information *via* newsletters, presenting awards, hosting meetings, and participating in other scientific activities. At the upcoming SOT Annual Meetings, the Section will sponsor or endorse symposia, workshops, and continuing education courses. In fact, at the 2013 Annual Meeting the SCSS is endorsing the continuing education courses "The Practice and Implementation of Neural Stem Cell Based Approaches to Neurotoxicology" and "Toxic Effects of Metals." We are looking for additional ideas for sessions for the 2014 Annual Meeting.

We remain a fledgling group and it would be very valuable if you would tell your co-workers in the area of stem cell research about us. It would also be of great value to help organize a Contemporary Concepts in Toxicology meeting (see pg. 5) with SCSS sponsorship to help ensure our fiscal future. We are in need of persons willing to run for elected positions this next year, so nominate your co-workers, who are members, to any of the positions in the SCSS leadership ranks. Self-nominations are welcome (see pg. 3). A special thanks to Elsevier Life Sciences for providing funds for our student awards last year. Thank you all for your help in getting the SCSS off to a great start, and see you in San Antonio.

Mike Waalkes

President – Stem Cells Specialty Section

## **Officers**

### **President**

Michael P. Waalkes

### **Vice President**

Kyle Kolaja

### **Vice President-Elect**

Jingbo Pi

### **Secretary/Treasurer**

Erik J. Tokar

### **Councilors**

Aaron Bowman

Lamia Benbrahim-Tallaa

### **Postdoctoral Representative**

Amy M. Skinner

### **Student Representative**

Justin A. Colacino

### **Newsletter Editor**

Erik J. Tokar

### **Website Liaison**

Amy M. Skinner

Justin A. Colacino

### **Award Contact**

Erik J. Tokar

## **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 Winners of the 2012 SCSS Awards for Research Excellence**

#### **Postdoctoral Winners**

**1st Place—Yuanyuan Xu, National Toxicology Program Laboratory, DNTP, NIEHS**

“Oncogenic Transformation of Normal Stem Cells by Non-contiguous Arsenic-Transformed Malignant Epithelia Potentially Involves Interleukin-6”

Mentor—Michael Waalkes, PhD

**2nd Place—Fengming Chen, Center for Molecular Toxicology and Carcinogenesis, Penn State University**

“A Novel Role of the Constitutive Androstane Receptor in Human Hepatic Differentiation”

Mentor—Curtis Omiecinski, PhD, ATS

#### **Student Winners**

**1st Place—Lijuan Zhan, The Hamner Institutes for Health Sciences**

“Regulatory Role of NRF2 and KEAP1 in PPAR $\gamma$  Expression and Chemoresistance in Human Non-small-cell Lung Carcinoma Cells”

Mentor—Jingbo Pi, MD, PhD

**2nd Place—Surendra Singh, Department of Pharmaceutical Sciences, University of Colorado AMC**

“The Role of ALDH1B1 in Alcohol Metabolism and Colon Cancer”

Mentor—Vasilis Vasiliou, PhD

The SCSS thanks Elsevier Life Sciences for sponsoring the 2012 SCSS Student and Postdoctoral Awards!

The Stem Cells Specialty Section is pleased to announce that it will again be holding competitions for Graduate Student and Postdoctoral Fellow Awards for Research Excellence in Stem Cell Toxicology at the 2013 Annual Meeting in San Antonio. All Student and Postdoctoral members of the SCSS are encouraged to apply. To qualify, you must be a SCSS member or have an application pending for SOT membership, with intention to join SCSS, and your work must be related to the field of stem cell toxicology. Submission requirements are: (1) An extended abstract of the work to be presented at the Annual Meeting, no more than two single-spaced pages in length, including figures and figure legends; (2) A letter from the Student's/Fellow's advisor stating that the research was performed while the applicant was a Student/Fellow and detailing the role of the Student/Fellow in the research project; (3) The applicant must be first author on the abstract; and (4) submission of the same work to more than one Specialty Section is not allowed. One 1<sup>st</sup> Place and one 2<sup>nd</sup> Place awardee will be selected for both the Graduate Student and the Postdoctoral categories. Awardees will receive a monetary award and a certificate of recognition. Award amounts will be announced at a later date. Due date is **January 31<sup>st</sup>, 2013**, to Dr. Erik J. Tokar ([tokare@niehs.nih.gov](mailto:tokare@niehs.nih.gov)).

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*All Student and Postdoctoral members are encouraged to apply for the SCSS Research Awards.*

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### **Membership News**

Membership in the SCSS continues to grow! In the 6 months since the 2012 Annual Meeting in San Francisco membership in the Section has already increased approximately 20%! This is the second year in a row that the SCSS has shown promising growth in membership. This is very encouraging in that the Section has steadily grown during both years of its existence. However, it is still important to support the future of the Section. Therefore, we would like to encourage all SCSS members to remind their colleagues, co-workers, friends, etc. to join the SCSS. Students and Postdoctoral Fellows are important resources and are instrumental to the growth and future success of this dynamic new Section and of the SOT. We encourage all interested Students and Postdoctoral Fellows to become members of the SCSS. Remember, all Students/Fellows are eligible to join one Specialty Section FREE with membership in SOT.

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*The SCSS membership has grown ~20% in only 6 months since the 2012 Annual Meeting!*

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### **Stem Cells Specialty Section Sponsored and Endorsed Sessions**

The SCSS sponsored a Continuing Education Course, *Stem Cells in Toxicology*, at the 2012 Annual Meeting in San Francisco. The course was very well-attended and well-received.

*The SCSS endorsed two Continuing Education Courses for the 2013 Annual Meeting in San Antonio.*

Again this year, the SCSS was asked to sponsor or endorse several session proposals for the 2013 Annual Meeting in San Antonio. Two of the Continuing Education Courses that the SCSS was asked to endorse were accepted. Several members of the SCSS will be chairpersons and/or speakers in these courses. The courses are listed below and for more information visit

<http://www.toxicology.org/AI/MEET/AM2013/ce.asp#AM07>. Thank you to those SCSS members who helped to organize and submit proposals for the 2013 Annual Meeting in San Antonio! Please make plans to attend these sessions in March.

#### **AM06: The Practice and Implementation of Neural Stem Cell Based Approaches to Neurotoxicology**

**Chairs:** Aaron Bowman (SCSS member) and Timothy Shafer

**Speakers and Titles:**

Steven L Stice – Cultural and Neural Differentiation of Human ESC-Derived Neural Cells

Ellen Fritsche – Neurospheres as 3D Cultures for Developmental Neurotoxicity Testing

Aaron B. Bowman – Culture and Differentiation of hPSC-Derived Neurons and the Promise of Personalized Toxicology

Timothy J. Shafer – Neurotoxicity Test Development and Mechanistic-Based Toxicology Using hNSC

#### **AM07: Toxic Effects of Metals**

**Chairs:** Michael Waalkes (SCSS member) and Michael Hughes

**Speakers and Titles:**

Michael P. Waalkes – Introduction

Michael F. Hughes – Essentials of Metals Toxicology

Wei Zheng – Metal-Induced Organ Systems Toxicities

Max Costa – Mode of Metals Toxicities: Example of Epigenetics

Erik J. Tokar (SCSS member) – Metals in Carcinogenesis and Developmental Origins of Adult Disorders

### **Call for Officer Nominations**

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. Now's your chance to get involved, to make an impact, and to network with other stem cell experts! The SCSS is currently accepting nominations for Vice President-Elect and for Junior Councilor. It is not too early for nominations for these positions. If you would like to nominate someone, please contact Erik J. Tokar ([tokare@niehs.nih.gov](mailto:tokare@niehs.nih.gov)). Self-nominations are welcome. Please note that the Presidential chain is a commitment of four years and requires Full, Associate, Retired, or Emeritus SOT membership. The Councilor position is a two year commitment. Candidates will submit a brief biosketch which will be posted during the election process. The nomination deadline and formal elections will both be in early 2013. Newly elected leadership will be announced at the SCSS reception at the Annual Meeting and will take office starting May 1<sup>st</sup>, 2013.

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*Serving as a Specialty  
Section Officer is an  
excellent way to help  
develop and advance  
your career!*

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### **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.

### **Stem Cells Specialty Section Logo**

The SCSS needs a logo. If you have ideas or suggestions for a new SCSS logo, please send them to Erik Tokar ([Tokar@niehs.nih.gov](mailto:Tokar@niehs.nih.gov)).

### **SOT 2014 Program**

It's never too early to start preparing for the 2014 Annual Meeting. Submit proposals for Workshops, Continuing Education Courses, Symposia, Informational Sessions, and/or Roundtables to Erik Tokar ([tokare@niehs.nih.gov](mailto:tokare@niehs.nih.gov)). Alternatively, bring your ideas to the SCSS mixer to be discussed during the business meeting. The SCSS 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 April 30<sup>th</sup>, 2013. For more information, visit [www.toxicology.org/ms/SciSess\\_proposal.asp](http://www.toxicology.org/ms/SciSess_proposal.asp).

**Recent Publications by Section Members**

- Kumar KK, Aboud AA, Bowman AB. The potential of induced pluripotent stem cells as a translational model of neurotoxicological risk. 2012. *NeuroToxicology*. 33(3): 518-529.
- Neely MD, Litt MJ, Tidball AM, *et al.* DMH1, a highly selective small molecule BMP inhibitor promotes neurogenesis of hiPSCs: Comparison of PAX6 and SOX1 expression during neural induction. 2012. *ACS Chem Neurosci*. 3(6): 482-491.
- Xu Y, Tokar EJ, Sun Y *et al.* Arsenic-transformed malignant prostate epithelia can convert noncontiguous normal stem cells into an oncogenic phenotype. 2012. *Environ Health Perspect*. 120(6):865-871.
- N'jai AU, Kemp MQ, Metzger BT, *et al.* Spanish black radish (*Raphanus Sativus* L. Var. *niger*) diet enhances clearance of DMBA and diminishes toxic effects on bone marrow progenitor cells. 2012. *Nutr Cancer*. 64(7):1038-1048.
- Wang J, Chen L, Ko CI, *et al.* Distinct signaling properties of mitogen-activated protein kinase kinases 4 (MKK4) and 7 (MKK7) in embryonic stem cell (ESC) differentiation. 2012. *J Biol Chem*. 287(4):2787-2797.
- Haberzettl P, Lee J, Duggineni D, *et al.* Exposure to ambient air fine particulate matter prevents VEGF-induced mobilization of endothelial progenitor cells from the bone marrow. 2012. *Environ Health Perspect*. 120(6):848-856.
- Sharpe M, Morton D, and Rossi A. Nonclinical safety strategies for stem cell therapies. 2012. *Toxicol Appl Pharmacol*. 262:223-231.
- Li S, Park H, Trempus CS, *et al.* A keratin 15 containing stem cell population from the hair follicle contributes to squamous papilloma development in the mouse. 2012. *Mol Carcinog*. doi: 10.1002/mc.21896.
- Qu W, Tokar EJ, Kim AJ, *et al.* Chronic cadmium exposure in vitro causes acquisition of multiple tumor cell characteristics in human pancreatic epithelial cells. 2012. *Environ Health Perspect*. 120(9):1265-1271.
- Casado FL, Singh KP and Gasiewicz TA. Aryl hydrocarbon receptor activation in hematopoietic stem/progenitor cells alters cell function and pathway-specific gene modulation reflecting changes in cellular trafficking and migration. 2011. *Mol Pharmacol*. 80(4):673-682.
- Saw YT, Yang J, Ng SK, *et al.* Characterization of aldehyde dehydrogenase isozymes in ovarian cancer tissues and sphere cultures. 2012. *BMC Cancer*. 12:329.
- Sun Y, Tokar EJ, Waalkes MP. Overabundance of putative cancer stem cells in human skin keratinocyte cells malignantly transformed by arsenic. 2012 *Toxicol Sci*.125(1):20-29.
- Zhan L, Zhang H, Zhang Q, *et al.* Regulatory role of KEAP1 and NRF2 in PPAR $\gamma$  expression and chemoresistance in human non-small-cell lung carcinoma cells. 2012. *Free Radic Biol Med*. 2012. 53(4):758-768.



### **Upcoming Meetings of Interest**

Stem Cells, Small Molecules and Therapeutics, November 14, 2012, New York, NY  
<http://www.nyas.org/Events/Detail.aspx?cid=fa6d9d7d-d544-46b1-a730-af26394cab74>

World Stem Cell Summit 2012, December 3-5, West Palm Beach, FL  
<http://www.worldstemcellsummit.com/>

Keystone Symposia: Stem Cell Regulation in Homeostasis and Disease, February 24 - March 1, 2013, Banff, AB Canada  
<http://www.keystonesymposia.org/13B7>

AACR Annual Meeting, April 6-10, 2013, Washington, DC  
<http://www.aacr.org/home/scientists/meetings--workshops/aacr-annual-meeting-2013.aspx>

International Society for Stem Cell Research, 11th Annual Meeting, June 12 - 15, 2013  
Boston, MA USA  
[http://www.isscr.org/Past\\_Future\\_Meetings/4787.htm](http://www.isscr.org/Past_Future_Meetings/4787.htm)

**For more meetings visit:** <http://www.isscr.org/source/calendar/meetings.cfm>

### **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.

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](#).

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

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