President’s Message

Dear OTSS members,

I am truly honored to have the opportunity to serve OTSS this coming year, following the great leadership examples of Jim, Brian, JoAnn, Mark, and Margaret, as demonstrated in increasing membership and providing scientific sessions at SOT. I would like to extend the warmest welcome to Leandro, Jon and Russell, as voting members of the executive committee and to Adele, as a non-voting student representative. I look forward to working with them. I am delighted to share the good news that the workshop proposal, entitled “Deciphering clinical and experimental retinal toxicology: an eye on the present and future”, has been tentatively accepted by SOT for 2015’s annual conference. It is an exciting outcome for OTSS since only about 20% of the proposals are typically accepted by SOT each year.

Looking ahead further, the program committee, now under the leadership of Evan, is continuing to work on a proposal for a 2-day mini-conference on “Ocular Toxicology” for 2016. We expect to submit a full proposal to SOT’s committee for evaluating these “Contemporary Concepts in Toxicology” (CCT) proposals by the end of this year since it will take a lot of time to work out the details with SOT. While it is a significant challenge since it is the first time we are attempting something of this scale, the rapid technological development and explosion of market for ocular therapy are clear indications that the timing is right for planning such a conference. The program committee will select 6-8 main topics to highlight during the conference and identify 4 to 6 speakers for each of them. We are encouraged by the considerable interest from our Japanese members who have contacts in the network of the Japanese Society of Comparative and Veterinary Ophthalmology (JSCVO), a group that has about 500 members, to participate in this. We also look forward to receiving suggestions from other members on specific subtopics and speakers for this CCT mini-conference.

(Continued on page 2)
Possible main topics for the “Ocular Toxicology” mini-conference:

• Toxicology assessment of slow release formulations for the eye
• Ocular immunotoxicology
• Toxicology of gene and stem cell therapy in the eye
• Toxicology of protein-based therapy (including monoclonal antibodies) for the eye
• Advances in cell culture systems to assess ocular toxicity
• New biomarkers and imaging tools to assess ocular injury
• Advances in PK understanding for ocular delivery
• Translational and clinical considerations for ocular therapy
• Regulatory challenge for developing novel ocular therapy
• Nanotechnology related ocular toxicity
• Ocular device safety
• Ocular phototoxicity

We would also like to encourage everyone to invite your colleagues to join OTSS and help us pass the 100-member marker (we are currently at 99). This is going to be another great year for OTSS. I look forward to working with you all to promote the science of ocular toxicology.

Edward Chow

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**Treasurer’s Report**

The numbers! Thanks for the generous gifts of our sponsors!!

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<thead>
<tr>
<th></th>
<th>April 2013</th>
<th>April 2014</th>
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<tbody>
<tr>
<td><strong>Ordinary Income/Expense</strong></td>
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<td>Interest</td>
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The reception for the Ocular Toxicology Specialty Section was held on Tuesday, March 25, 2014 from 6:00 pm to 7:30 pm at the Sheraton Phoenix Downtown Hotel. It began by acknowledging the sponsors of the OTSS which included: Charles River, Covance, Ocular Services On Demand(OSOD), Regeneron, Novartis, Genentech, Veterinary Pathology Services and NAMSA. Next, Drs. Shoji Sasaki and Ikuyo Atsumi discussed the Japanese Society of Comparative and Veterinary Ophthalmology, which was followed by an introduction of the current officers of the OTSS. New officers for the 2014-2015 term were announced.

New officers include: Dr. Chris Somps (Vice President-Elect), Dr. Russell Eyre (first year Councilor), Dr. Jon Popke (Treasurer), and Dr. Leandro Teixeira (Communications Officer). Officers completing their terms on the OTSS Executive Committee included: Dr. Linval DePass (second year councilor), Dr. Brian Christian (past-president), Dr. Marina Seme-Nelson (treasurer), and Dr. Chris Somps (communications officer).

After introductions, the treasurer and chairpersons of various OTSS committees presented updates. Dr. Marina Seme-Nelson indicated that the OTSS was doing well, financially, with a balance of $19,838 as of January 31, 2014. Dr. Edward Chow acknowledged the members of the Program Planning Committee who included the following: Drs. Brian Christian, Craig Crosson, Don Fox, Melva Rios Blanco, JoAnn Schuh and Evan Thackaberry. In addition to the two-day “Contemporary Concepts in Toxicology” mini-conference described above, plans were being finalized for a symposium proposal submission on “Retinal Toxicology” for the 2015 SOT meeting.
Subjects of the proposed symposium include: mammalian retinal anatomy and physiology, pharmacokinetic factors affecting retinal toxicity, mechanisms of toxicity for retinal pigment epithelium, mechanisms for toxicity for photoreceptor cells, and stem cells in retina repair and regeneration. Potential topics for future educational presentations (symposia or continuing educational courses) include “In Vitro Methods for Evaluating Ocular Toxicity” and “Biomarkers of Ocular Injury”. The chairperson of the Communications Committee, Dr. Chris Somps, introduced the members of the committee who included Drs. Ryan Hamilton, Leandro Teixeira, Rose Verhoeven and James Render.

Of the various committee activities, the principal activity is the OTSS Newsletter, which is always in need of information to share with the members of the OTSS. Next was an update on the Membership Committee, chaired by Dr. Evan Thackaberry, which was followed by awards.

Members of the Membership Committee included Drs. Edward Chow, JoAnn Schuh, Diana Auyeung-Kim, and Russel Eyre. At the time of the meeting, there were 96 members of the OTSS. This number appears to be gradually increasing, but there is room for many more, especially for students and postdocs! There were three awards presented at the annual OTSS reception. They include the 2014 Informa “Ocular Paper of the Year”, “Covance-OSOD Student/Postdoctorate Award” and the “Career Achievement Award”. You can read about the award winners of the section bellow. The awards committee was composed of Drs. Nancy Bordelon, Amy Kim, Kathleen Krenser, Tim Lam, and Diana Auyeung-Kim.

The reception was concluded by a presentation by Ms. Margaret Collins, the winner of the “Career Achievement Award”, who shared lessons learned over her career and the role of a CRO in ocular drug development.

Congratulations to Ms. Margaret Collins on all of her achievements.

Jim Render
Career Achievement Award

Congratulations to this year’s recipient, Ms. Margaret E. Collins!!

Ms. Collins is currently the Associate Director of Research and Program Director specializing in Ocular Toxicology at Charles River Laboratories in Reno, NV. She was nominated for this award based on her scientific contributions in advancing ocular toxicity assessment and her contributions in establishing the OTSS. Ms. Collin’s career has seen her steadily refine and expand her capabilities and publish on ocular assessments and models of ocular diseases. She has used her knowledge and skills to guide and train others, including her colleagues, clients to her CRO and also as a co-chair of the first continuing education course in ocular toxicology offered by the OTSS. This course became the basis of the reference book “Assessing Ocular Toxicology in Laboratory Animals, published in 2012 by Weir and Collins. Another important aspect to Ms. Collin’s career was her early involvement in establishment of the OTSS. While she was only one of several people who met to cofound the OTSS, she brought a lot of passion to this venture by immediately serving as the Interim President (2008-2009), as the first President of the OTSS (2009-2010), as a Councilor (2010-2011) and Newsletter editor (2010-2012). Without her willingness to provide early leadership in the OTSS, this small but dedicated community might have not have survived the early stages of formation to become an established specialty section.

About the Award:
The award nominees are selected based on the depth and breadth of scientific contributions and significance of contributions for advancing the field of ocular toxicology. Among the factors included are the education/training/mentorship of young scientists, influence on regulatory and risk/safety assessment decisions related to ocular toxicology, and leadership and service to the ocular toxicology field.

2014 Informa “Paper of the year”

Sulfur mustard (2-2’-dichlorodiethyl sulfide; SM) is a carcinogenic, mutagenic and cytotoxic chemical warfare agent (CWA) with well-known vesicant action as seen on the battlefield. Ocular exposure to SM results in alternations of the basement membrane zone causing the separation of the corneal epithelium from the stroma. The loss of limbal stem cells can occur if damage is severe causing the failure of the corneal epithelium to re-epithelize requiring a corneal transplant. SM also leads to corneal swelling, decreased vision, pain, inflammation, vascularization of the cornea, mustard gas keratopathy and possible blindness. While many of the toxic manifestations that follow SM exposure to the eye have been described, few therapeutic measures are available. To treat the corneal damage, a need exists to identify countermeasures. I used a rabbit corneal organ culture model to test compounds to facilitate corneal wound healing following nitrogen mustard (NM) exposure. Rabbit eyes were obtained from PelFreez (Rogers, AR) and corneas were dissected leaving approximately 2mm of scleral rim. The endothelial side of the corneas was filled with 1.5% agar in DMEM and the cornea was placed epithelial side up in culture dishes. Compounds (including doxycycline, tetracycline, N-Hydroxy-octylhomovanillamide and melatonin) were applied topically to the corneal surface following a 2 hour exposure to 100 nmol nitrogen mustard (NM). We hypothesize that these compounds maintain the epithelial-stromal junction of the cornea by affecting the basement membrane via ADAM 17 and MMP expression. Using histological H&E staining, the extent of corneal injury was assessed and the percent epithelial-stromal separation was calculated. Samples were also analyzed for RNA to evaluate levels of MMP-9 and IL-1α. Future experiments will involve the examination of changes of cell signaling pathways, protein alterations and the use of lissamine green and other common ophthalmologic diagnostic dyes during the wound healing process post therapeutic treatment.
2014 OTSS Symposium at the SOT

Synopsis provided by JoAnn Schuh and Brian Christian

The OTSS, in conjunction with the Immunotoxicology SS, co-sponsored a symposium entitled “Ocular Immunotoxicology: A Privileged View” on Tuesday morning, March 25th at the recent 53rd annual meeting of the Society of Toxicology, in Phoenix, AZ. This symposium was co-chaired by Brian Christian (Covance Inc., Madison, WI) and JoAnn Schuh (JCL Schuh, PLLC, Bainbridge Island, WA) and there were 5 presentations. The primary focus was on nonclinical immunotoxicology, starting with a general overview of ocular immunology and mechanisms of immune privilege in the eye (Ocular Oversight: Immune Privilege and Immune Regulation and Dysregulation. J. Schuh. JCL Schuh, PLLC, Bainbridge Island, WA.). The subsequent 3 speakers presented more detailed features of mucosal and internal ocular immunology and toxicology. Dr. Brian Gilger (Department of Clinical Sciences, North Carolina State University, Raleigh, NC.) talked about the Innate and Adaptive Immune Responses to Ocular Insult. Damon Demady (Preclinical Science, Novartis Institute for Biomedical Research, Cambridge, MA.) talked about the role of complement and immunotoxicology of anti-complement therapeutics in the eye. Dr. Curtis Brandt (Dept. Ophthalmology and Visual Sciences, University of Wisconsin School of Medicine and Public Health) talked about the Innate and Acquired Immune Responses to Ocular Viral Gene Delivery Vectors in Primate Eyes. The final presenter, Dr. Fritz Fraunfelder (Casey Eye Institute, Oregon Health and Science University, Portland, OR.) discussed adverse immune reactions associated with marketed vaccines and drugs that have been identified in human patients. If you were unable to attend this session, the presenters will be writing a summary of the symposium content that will be submitted to the International Journal of Toxicology for publication. These presentations were well received and with the encouragement of the SOT education committee, this symposium was submitted as an SOT-sponsored symposium proposal for the 2015 American Association for the Advancement of Science meeting (Feb 12-16, San Jose, CA).

Call for Nominations from the Awards Committee

Ocular Toxicology SS Career Achievement Award

Each year, the OTSS recognizes one of its members for lifetime achievement or for contribution of a particularly influential body of work to the field of ocular toxicology. The nominees are evaluated with respect to the following criteria:

1) Contribution to the field of ocular toxicology—depth and breadth of scientific contributions and significance of contributions for advancing the field.
2) Major influence in the education/training/mentorship of young scientists in the field of ocular toxicology including training in government, industry, or academia.
3) Leadership and service to the ocular toxicology field including involvement in the Specialty Section or other meetings/organizations related to ocular toxicology.
4) Influence on regulatory and risk/safety assessment decisions related to ocular toxicology. Nominations of candidates not selected will be considered for two additional years unless the nomination is withdrawn by the sponsor.

Nominations: The nominator should provide a discussion of the role that the individual's work has played in advancing the field of ocular toxicology and the safety assessment of ocular products. A curriculum vitae and bibliography should also be included. A second letter of recommendation from another investigator in the field would be helpful.

Submit nominations to: Diana Auyeung-Kim
Deadine: December 31

Ocular Toxicology SS Ocular Toxicology Specialty Section Covance-OSOD Graduate Student/Postdoctoral Fellow Research Award

Each year, OTSS recognizes outstanding student/postdoctoral candidates for their contribution to advancing the understanding of ocular toxicology and pharmacology. The award recipient will receive a certificate and monetary award of up to $500, funded by generous contributions from Covance and OSOD.

The requirements/criteria for the award include that the Applicant:
1) must be a graduate student or postdoctoral fellow as of October 1 the year prior to the annual meeting;
2) preferred to be a SOT and OTSS member;
3) must have an accepted abstract at the next upcoming SOT annual meeting;
4) must attend the SOT meeting and attend the OTSS reception;
5) must not have received an OTSS award the previous year;
6) abstract must be related to ocular toxicology and/or pharmacology.

Submission of:
1) Abstract, including SOT Abstract Number.
2) Letter of support from applicant’s Sponsor indicating the role of the applicant and independence conducting the research.
3) Narrative describing their research hypothesis, background and significance (up to 2 pages). The winners will present a 5-minute synopsis of his/her research at the Annual OTSS meeting.

Submit nominations to: Diana Auyeung-Kim
Deadline: December 15

Ocular Toxicology SS Annual “Paper of the Year” Award

The Informa Healthcare Award is presented annually to recognize the best paper in ocular toxicology published in the Journal of Cutaneous and Ocular Toxicology. The winner receives a certificate of recognition and a subscription to the Journal of Cutaneous and Ocular Toxicology. The winner will be selected by Informa Healthcare from articles published between January 1 and December 31 of the year preceding the SOT Annual Meeting.

Nominations from the membership will not be solicited. The award will be announced at the Annual Meeting of the Ocular Toxicology Specialty Section at the Society of Toxicology Annual Meeting.

Deadline: December 31
Call for SOT Nominating Committee, Vice President Elect, Councilor and Postdoctoral Representatives

There is an open position for a Full Member of SOT (and an OTSS member) to be the representative from the OTSS on the 2015 SOT Nominating Committee. Nominations are open until September 1st and at that time there will be an election among the OTSS Executive Committee members to decide the representative.

There will be two open positions on the OTSS Executive Committee that will need to be filled. One is Councilor which is a 2 year term and the other is Vice President Elect which automatically becomes Vice President after a year, then President for a year, and finally Immediate Past President for a year (total commitment = 4 years). The terms begin May 1, 2015. Names and e-mail addresses of nominees and interested OTSS members will be received until Friday, December 19, 2014. OTSS members will vote in January, 2015. There is also a 2-year position for a Postdoctoral representative for OTSS student members.

If interested in any of these positions, please contact Jim Render, OTSS Immediate Past President at jrender@namsa.com

Meeting Announcement

2nd Annual Meeting of C.O.P.S. (the Comparative Ocular Pathology Society)

Fort Collins, CO
September 18-20, 2014
Registration: May 7 - August 1, 2014
Click here for more information
Sponsorship

We sincerely thank our sponsors for their generous support!!

2013 – 2014 Sponsors