President’s Message

Dear OTSS Members,

This has been an exciting and active year so far for the OTSS. Our Program Committee, currently under the leadership of Mercedes Salvador-Silva, has been very active developing cutting-edge workshops and symposia for our membership and the ocular toxicology community.

As part of the 2016 SOT Annual Meeting in New Orleans, OTSS sponsored a workshop entitled Nanotoxicology and ocular drug delivery: one size does not fit all. The session was well received and well attended (estimates of 125-150 attendees) and was co-sponsored by the Nanotoxicology and Neurotoxicology Specialty Sections. It featured speakers from academia, industry, and government, including presentations by SOT members Nigel Walker (NIEHS) and William Boyes (US EPA), among others. Additionally, at this year’s OTSS reception, we celebrated the Career Achievement Award given to Dr. Richard Dubielzig (DVM and Professor Emeritus, Univ. Wisconsin) who gave an excellent lecture entitled Society of Toxicology (SOT) Ocular Toxicology Specialty Section (OTSS): Thankful Remarks. This year’s Covance/OSOD student award recipient Cate Lockhardt (University of Washington) presented her work entitled Screening for miRNA Regulation of Cytochrome P450 4V2, the Gene Associated With Bietti’s Crystalline Dystrophy, and Dr. Wally Hayes (Editor in Chief of Cutaneous and Ocular Toxicology) awarded the journal’s best ocular paper of the year to David J. McCanna, Aurore V. Barthod-Malat and Maud B. Borbet for their paper entitled In vitro methods of assessing ocular biocompatibility using THP-1-derived macrophages, Cutaneous and Ocular Toxicology 34 [2] 89-100. 2015.

In June, we held a 2-Day, OTSS-organized Current Concepts in Toxicology Meeting entitled Ocular Toxicology, Pharmacology, and Drug Delivery: An Eye on the Future on the Genentech campus in South San Francisco on June 27/28. The meeting was a great success with 165 attendees, 22 sponsors, and 23 speakers. The meeting also raised awareness of SOT and the OTSS for many of the attendees and will likely result in increased OTSS membership in the future.

For 2017, the Program Committee has been working on a proposal for a symposium entitled In Vitro and Alternative Methods in Ocular Toxicology: The Eyes Have It. The session has been tentatively accepted as a symposium for the 2017 SOT Annual Meeting and efforts are underway to address SOT comments. Planning for 2018 and beyond is underway and any ideas for future session topics from membership should be communicated to Mercedes Salvador-Silva.

Thanks to the efforts of OTSS leadership, our members and our generous supporters our Specialty Section continues to grow and have an increasing impact on the field of ocular drug delivery, safety assessment and ocular toxicity. Our current membership is stands at 109. We now have two Student focused awards; the Covance/OSOD Research Award and a Travel award to further encourage student participation in the SOT Annual Meeting and potential careers in ocular toxicology.

Sincerely,

Chris Somps, Ph.D.
The reception for the Ocular Toxicology Specialty Section was held on Tuesday, March 15, 2016 from 6:00 pm to 7:30 pm at the Hilton Riverside Grand Salon 12. It began by acknowledging the supporters of the OTSS which included: Charles River, Covance, Ocular Services On Demand (OSOD), Regeneron, Novartis, Genentech, and Veterinary Pathology Services. Attendees of the meeting also got to enjoy a presentation involving the Japanese Society of Comparative and Veterinary Ophthalmology.

An introduction of the current officers of the OTSS and new officers for the 2016-2017 term were announced. New officers include: Vas Anand (Vice President-Elect), Vlad Bantseev (first year Councilor), Russell Eyre (Treasurer), and Marcus Terneus (Communications Officer). Officers completing their terms on the OTSS Executive Committee included: Manlong Xu (Postdoctoral Representative), Edward Chow (Past-President), Russell Eyre (Councilor), Leandro Teixeira (Communications Officer), and Jon Popke (Treasurer). After introductions, the chairpersons of various OTSS committees presented updates.

Chris Somps (chair) of the Program Planning Committee acknowledged members of the committee including: Vlad Bantseev, Brian Christian, Ed Chow, Don Fox, Alan Katz, Ron Newton, Melva Rios-Blanco, Mercedes Salvador-Silva, JoAnn Schuh, and Evan Thackaberry. Chris then provided a reminder about the 2016 Contemporary Concepts in Toxicology (CCT) meeting entitled *Ocular Toxicology, Pharmacology, and Drug Delivery: An Eye on the Future*. You can read more about the CCT meeting below. Additional updates included the 2016 workshop, “Nanotoxicology and Ocular Drug Delivery: One Size Does Not Fit All”, endorsed by Nanotoxicology and Neurotoxicology Specialty Sections and a 2017 Symposium Proposal, “*In Vitro* and Alternative Methods in Ocular Toxicology: The “Eyes” Have It.”
The chairperson of the Communications Committee, Leandro Teixeira, introduced the members of the committee who included Ryan Hamilton, Jim Render, Chris Somps and Rose Verhoeven. Of the various committee activities, the principal activities are focused on the OTSS Newsletter, Websites/Sharepoints, and OTSS Poster, 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 Mercedes Salvador-Silva. Members of the Membership Committee included Chris Somps, Russel Eyre and Manlong Xu. At the time of the meeting, there were 100 members of the OTSS. Of the 100 members, 15% represent Industry, 6% Students, and the remainder are part of Academic/Government. This number appears to be gradually increasing (up from 91 in 2015), but there is room for many more, especially for students and postdocs!

Next was an update on OTSS financials, which was followed by awards. Jon Popke indicated that the OTSS was doing well financially, with a balance of $39,435 as of December 31, 2015, representing a net gain of $10,430 year-over-year.

There were three awards presented at the annual OTSS reception. They included the Informa “Ocular Paper of the Year” Award, the “Covance-OSOD Student/Postdoctorate Award” and the “Career Achievement Award”. You can read about the award recipients on the section below.

The Awards Committee was composed of Brian Gilger, Jim Render, and Chris Somps. The reception was concluded by a presentation by Dr. Richard Dubielzig, the recipient of the “Career Achievement Award”.
The CCT meeting “Ocular Toxicology, Pharmacology, and Drug Delivery: An Eye on the Future” was held on the Genentech campus in South San Francisco on June 27/28. The meeting was a great success, with 165 attendees, 22 sponsors, and 23 speakers. Presentation topics included development strategies for protein-based intravitreal therapeutics, drug and toxicant-induced retinal toxicity, and the safety assessment of novel drug delivery, cell, and gene-based therapies.

Additionally, roundtable discussions were held on each day featuring the speakers and moderated by the organizing committee. These sessions focused on the regulatory and scientific challenges associated with immunogenicity of protein-based therapeutics and novel ocular delivery technologies. The roundtables were well attended and provided all involved with insight into the current science of ocular toxicology as well as the regulatory environment governing the development of novel ocular therapeutics.

A survey of attendees has been circulated to gauge value of the meeting to attendees and to follow-up on suggestions for future workshops focused on ocular drug delivery and toxicity. As a consequence of this meeting a number of attendees expressed interest in joining SOT and the Ocular Toxicity Specialty Section.

Evan Thackaberry & Chris Somps, CCT Co-Chairs
Award Announcements

Career Achievement Award

Congratulations to this year’s recipient, Dr. Richard Dubielzig

Dr. Dubielzig is a founder and former managing member of COPLOW, CORL, and OSOD, and currently provides consulting on ocular pathology for OSOD.

Dr. Dubielzig is a Board Certified Veterinary Pathologist, and Professor of Pathology, School of Veterinary Medicine, University of Wisconsin-Madison. He is primarily interested in comparative ocular pathology, but has written and lectured widely on diverse topics concerning veterinary ophthalmic pathology, laboratory animal ocular pathology and comparative ocular morphology.

Dr. Dubielzig has authored more than 200 publications, and is recognized for his ground-breaking observations of the spontaneous ocular diseases of animals. He runs an active mail-in ocular pathology service that processes more than 3000 specimens annually. He also provides consulting to industries on the development of ocular lesions.

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.

2016 Informa “Ocular Paper of the Year” Award

Bietti’s Crystalline Dystrophy (BCD) is a rare, degenerative eye disease caused by mutations in the cytochrome P450 4V2 (CYP4V2) gene. The disease is characterized by yellow-white crystalline deposits on the cornea and retina, and patients will eventually become completely blind. Beyond BCD, we are interested in the function of CYP4V2 and the potential for interindividual variation in normal physiology. Given the size of the mRNA 3’UTR (2.8kb), we are exploring the potential for epigenetic regulation by micro RNA (miRNA). Microarray analysis of the University of Washington School of Pharmacy Human Liver Bank was conducted to identify miRNA candidates with potential to regulate CYP4V2. Tissues with known high and low expression of CYP4V2 mRNA were screened to identify potential miRNAs and determine regulatory associations. To evaluate the mechanism of miRNA regulation in vitro, HepG2 cells were stably transfected with a luciferase reporter vector containing the entire human CYP4V2 mRNA 3’UTR or a negative control vector. Four clones from each construct have been stably transfected with clones to either over-express or inhibit miR-146b. Luciferase was measured and compared to baseline measurements. We demonstrated an association between miR-146b-5p, CYP4V2 mRNA levels, and protein expression. The availability of stably transfected reporter cell lines will allow testing of the function of miR-146b-5p via targeted over-expression or repression of this miRNA. To validate results from transfected HepG2 cells, mRNA and protein expression will be analyzed in cryopreserved primary human hepatocytes under the same experimental conditions. Absolute quantitation will be done in silico using validated LC-MS methods.

The recipient of the 2015 Student/Postdoctorate Award, which was sponsored by Covance and Ocular Services On Demand (OSOD), was Cate Lockhart, a graduate student of Dr. Edward Kelly from the University of Washington. Cate’s research topic was entitled: “Screening for miRNA Regulation of Cytochrome P450 4V2, the Gene Associated With Bietti’s Crystalline Dystrophy” which was briefly presented at the OTSS reception and presented as a poster during the SOT poster session. Below you can read a brief description of her work.
**Workshop at the 2016 SOT**
“Nanotoxicology and Ocular Drug Delivery: One Size Does Not Fit All”

Synopsis provided by co-chairs, Chris Somps and Donald Fox

This Workshop, co-sponsored by the Ocular Toxicology, Nanotoxicology and Neurotoxicology Specialty Sections, was focused on nanomaterial-enabled ocular drug delivery and toxicity. Nanomaterials, due to their small size and potential to control surface properties and targeting, hold significant promise for improving delivery of therapeutic agents to specific ocular compartments. However, the potential ocular toxicity of these nanomaterials is largely unknown. The goal of this workshop was to bring together academic and industry researchers, as well as government regulators, to further define and understand the unique safety issues confronting those that are developing and/or using nanoparticles for improved ocular drug delivery. The session started with a broad overview of nanotoxicology and strategies for assessing the safety of nanoscale materials provided by Nigel Walker (NIEHS-NTP). Jerry Lutty (Johns Hopkins) focused on the current use of nanomaterials for enhanced delivery of ocular therapeutics. Muna Naash (University of Houston) described the use of DNA nanoparticles for the treatment of different ocular diseases, particularly diseases of the retina and retinal pigment epithelium. Will Boyes (EPA) discussed the retinotoxicity of current and proposed nanomaterials. Wiley Chambers (FDA) wrapped up the workshop with an FDA perspective and an overview of sponsor and FDA roles in assuring the safety of nanomaterials used for ocular drug delivery. The Workshop was well received with 125-150 people attending throughout the session.

**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: Brian Gilger

**Deadline: December 31, 2016**
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 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: Brian Gilger

Deadline: December 15, 2016

Ocular Toxicology SS Trainee Travel Award

The Ocular Toxicology Specialty Section (OTSS) of the Society of Toxicology (SOT) is now accepting applications for a Graduate Student and Postdoctoral Fellow Trainee Travel Award. The purpose of these awards is to recognize outstanding contributions of graduate students and postdoctoral fellows to the 2016 SOT Annual Meeting in the area of ocular toxicology. The award is specifically intended to support the travel of graduate students and postdoctoral fellows to the Annual Meeting of the Society of Toxicology. Both need and abstract merit will be considered as criteria for this award.

Eligibility is limited to graduate students and postdoctoral fellows who meet the following criteria:
1) must be graduate student or postdoctoral fellow as of October 1 the year prior to the annual meeting;
2) must have an accepted abstract at the next upcoming SOT annual meeting;
3) must attend the SOT meeting and attend the OTSS reception;
4) must not have received the OTSS award the previous year;
5) abstract must be related to ocular toxicology and/or pharmacology.

The application should include the following items:
1. Cover letter from the trainee indicating his/her intent to apply for this award and interest in attending the Annual Meeting
2. Current CV
3. Copy of abstract for platform or poster presentation at the 2016 SOT
4. Letter from advisor or mentor indicating the trainee’s merit, as well as confirmation of need for funding to enable travel

Awards will be conferred to one (1) graduate student and/or one (1) postdoctoral fellow. The recipients will each receive an achievement plaque and a $500 cash award. The awardees will be acknowledged at the 2016 OTSS Reception.

All applications should be submitted to OTSS Awards Committee Chairperson Brian Gilger.

Deadline: December 15, 2016
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, 2016

Call for SOT Student and Postdoctoral Representatives

There is an opening for a 2-year position for a Student representative and a Postdoctoral representative for OTSS student members. Interested individuals should contact Vas Anand.

Renew your membership!

It is that time of the year when people are planning to register for the meeting and to renew their SOT membership so we wanted to remind you to re-register as an OTSS member.

Click here for a direct link

OTSS Officer Nominations

Please consider supporting your Specialty Section by helping out on the OTSS Executive Committee. Each year there is a call for Nominations. Please consider self-nominating or nominating a fellow OTSS member. The following positions will become available in 2017: VP Elect and Councilor. See link below for a description of these officer positions and send nomination suggestions to Vlad Bantseev.

Officer Position Descriptions
Supporters

We sincerely thank you for your generous support!!

2016 – 2017 Supporters