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The President's Message

Dear Dermal Toxicology Specialty Section Members and Potential Members,

This issue of the newsletter introduces you to the new officers of the Section, upcoming events, solicitations for submissions for our awards, and developments regarding the re-design of the Section web site. I thank all of our officers, our sponsors and you, our membership, for your continued support of dermal toxicology and the SOT. The next newsletter, estimated to be out in February, will provide even more information on the web site and other section developments. It is never too late to be thinking of 2018 program ideas, as these will be solicited shortly after the SOT meeting. And continue to provide us with your ideas, feedback and constructive criticisms. We represent you, the members, and want to ensure that the section represents your views, ideas and goals. I hope to see you in Baltimore at our reception and look forward to seeing the science being done by our members. Thanks for all you do.

Douglas B. Learn
DTSS President

Dermal Toxicology

Specialty Section

Executive Council Cont'd

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The Mission of DTSS

The objectives of the Dermal Toxicology Specialty Section (DTSS) are to provide a forum for the interaction of individuals involved in risk assessment, pharmacokinetics, dermal penetration/absorption, hypersensitivity and dermal toxicity, regulatory issues, basic skin biology and other professionals working in the field of dermal research. Members who wish to receive more information on the specialty section should contact Doug Learn or any of the other Officers by e-mail.

DTSS Activities include:

- Presents/sponsors programs and educational activities;
- Acts as a resource to the SOT in dermal toxicology;
- Relates developments in dermal toxicology to SOT activities; and
- Stimulates growth in the science of dermal toxicology.

Upcoming Conferences & Events

March 3-7, 2017: American Academy of Dermatology 75th Annual Meeting,
Orlando, FL
(<https://www.aad.org/meetings/annual-meeting>)

March 12-16, 2017: The Society of Toxicology 56th Annual Meeting and ToxExpo,
Baltimore, MD. (<http://www.toxicology.org/events/am/AM2017/index.asp#>)
Early Bird Registration: January 13, 2017

April 26-29, 2017: Society of Investigative Dermatology (SID) 2017 Annual Meeting,
Portland, OR, USA
(<http://www.sidnet.org/events/EventDetails.aspx?id=853557>)

The logo for the Society of Toxicology (SOT) 56th Annual Meeting and ToxExpo. It features the letters 'SOT' in a large, white, serif font. The letter 'O' is replaced by a white circle containing a black compass rose with a white 'B' in the center. To the right of 'SOT', the text '56th Annual Meeting and ToxExpo™' is written in a white, sans-serif font. The background is a dark blue gradient with a faint, light blue compass rose graphic.

**Baltimore,
Maryland**
March 12-16, 2017

2018 Annual DTSS Meeting

While the 2017 annual meeting seems to be far away, now is the time to begin to develop submissions for the 2018 program (symposia, workshops, continuing education courses). There are many areas of research, safety evaluation, and regulatory interest covered by the DTSS members that are applicable to submissions to the 2018 SOT Annual Meeting program. Right now we need a broad concept or idea, and the SOT office and the DTSS Officers can provide assistance in fleshing out those ideas. Collaboration with other specialty sections and integrative sessions are particularly sought out and increase the probability of successful acceptance (and spreads out the responsibilities). Please send your thoughts and suggestions to any of the **DTSS officers** (contact information in the newsletter and on the web site). We would love to have several to discuss at the DTSS reception and meeting, and we can also meet in Baltimore outside of the reception to further discuss your ideas.

On behalf of the DTSS Officers and the members, thanks. We look forward to your suggestions and comments.



The Society of Toxicology is committed to creating a safer and healthier world by advancing the science of toxicology.

Membership and Award Opportunities

DTSS Members – Would you like to become more active in DTSS?

If you have any suggestions or recommendations on how to make our specialty section better or better able to serve your needs, please email your suggestions to Doug Learn at:

doug.learn@crl.com

Membership Drive and Award Opportunities

As always, we encourage you to apply for membership at this website: <http://www.toxicology.org/ISOT/SS/dtss/membership.html>. DTSS members have the opportunity to apply for a number of DTSS sponsored awards. The Best Paper Award is awarded in recognition of an exceptional recent peer-reviewed publication in the field of dermal toxicology and pharmacology. The Stratacor Postdoctoral Abstract Award recognizes a postdoctoral candidate for his/her contribution to dermal toxicology. Battelle Student Research Award is awarded to a graduate student for use in research projects involving dermal toxicology. The Informa Healthcare Award is presented for the best paper in dermal toxicology published in the Journal of Cutaneous and Ocular Toxicology. The DTSS 2016 award winners will be announced at the 2017 SOT Annual Meeting in Baltimore, MD. Also, Charles River will sponsor \$500 each towards travel grant for two students and one postdoctoral scholar to attend the Society of Toxicology Annual Meeting.

Thank you to our sponsors:

Battelle

The Business of Innovation



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SOT | Society of Toxicology

The Society of Toxicology is committed to creating a safer and healthier world by advancing the science of toxicology.

DTSS Financial Report:

Society of Toxicology TOTAL SECTIONS For the Three Months Ending September 30, 2016	
	Dermal Toxicology <u>70-812-0</u>
Ordinary Income/Expense	
Income	
Contributions	1,500
CCT Mtg:MiRNA	-
CCT Mtg:Ocular	-
Membership Dues	-
Misc.Income/Other	-
Registration	-
Interest	-

Total Income	1,500

Expense	
Awards - Sections	-
Plaques	-
Contributions	-
CCT Mtg:Ocular	-
Executive Meetings	-
Mentoring Activities	-
Miscellaneous	-
Newsletter	-
Reception	-
Symposia	-
Travel	-
Web Development	-

Total Expense	-

Excess (Deficiency) of	
Revenue over Expenses	1,500

Net Assets Beginning of year	10,404
Transfers from General Fund	-
Net Assets After Transfers	10,404

Net Assets End of Year	11,904
	=====

The net DTSS assets as of September 2016 are \$11,904. This amount includes our budget after clearing all expenses from the 2016 Annual Meeting. The cost of the DTSS reception and Officer's meeting at the 2016 Annual Meeting was \$4,202.00. The cost of the 2015 awards and plaques was \$1,969.00.

Dermal Toxicology

Specialty Section

2016 Awards

The **Sinclair Student Award** went to **Yoke-Chen Chang** (Rutgers University, Piscataway, NJ) for her study on sulfur mustard published in the journal *Toxicology and Applied Pharmacology*.

The **DTSS Best Paper of the Year** award was given to **Thomas H. Snider** (Battelle, Columbus, OH) for the work: 'Assessing the therapeutic efficacy of oxime therapies against percutaneous organophosphorus pesticide and nerve agent challenges in the Hartley guinea pig'.

The **Stratacor Postdoctoral Award** went to **Hanjiang Zhu** (University of California, San Diego, San Diego, CA) for the work: 'Effects of Soap-water Wash on Human Epidermal Penetration'.

The **Battelle Research Award** went to **Nicole Panstingel** (Wright State University, Dayton, OH) for the work 'The Effect of Silver Nanoparticles on Human Integument Post Thermal Injury'.

The **Informa Healthcare Award** went to **Margaret Kraeling** (US FDA) for the work '*In vitro* skin penetration of acetyl hexapeptide-8 from a cosmetic formulation'.

The **Dermal Toxicology Specialty Section Postdoctoral Travel Award** went to **Hanjiang Zhu** (University of California, San Diego, San Diego, CA) for the work: 'Effects of Soap-water Wash on Human Epidermal Penetration'.

The **Charles River Student Travel Awards** went to **Douglas Ralph** (The Pennsylvania State University, University Park, PA) for the work 'Peroxisome Proliferator-activated Receptor- β/δ (PPAR β/δ)-dependent Inhibition of UVB-induced Skin Carcinogenesis: Targeting p53 Mutant Cells' and to **Carrie Long** (CDC-NIOSH, Morgantown, WV) for the work 'The immunomodulatory potential of microRNA 210 and regulatory t cells in a murine model of chemical sensitization'.

In addition, a **Kindle Fire HD** was awarded as a door prize from contact information submitted during the 2016 Student-Postdoc Mixer. This prize was sponsored by MB Research Labs.


Dermal Toxicology Specialty Section

2016 Awards continued

Please visit the Dermal Toxicology Specialty Section website for information about awards and travel grants available for 2017:

- Dermal Toxicology Specialty Section Annual “Paper of the Year” Award
- Dermal Toxicology Specialty Section Informa Healthcare Award
- Dermal Toxicology Specialty Section Battelle Student Research Award
- Dermal Toxicology Specialty Section Stratacor Postdoctoral Award
- Dermal Toxicology Specialty Section Charles River Sponsored Student and Postdoctoral Travel Grants

Further information can be obtained from DTSS Senior Councilor, **Margaret Kraeling**, and applications for all awards should be sent to margaret.kraeling@fda.hhs.gov. The deadline for all applications is January 15, 2017.



**Please forward this
newsletter to your
colleagues that might be
interested in becoming a
member of DTSS!**

DTSS Student Newsletter Section

Hello student and postdoctoral members! We hope that you are all having a great year.

Kicking off a successful 2016 Annual Meeting, the Graduate Student Leadership Committee (GSLC) hosted the Student/Postdoc Mixer on Sunday evening at the SOT Annual Meeting in New Orleans. This event is held annually and is a great way for students and postdocs to socialize with friends (both old and new), learn about SOT activities and organizations, and network. The Dermal Toxicology Specialty Section (DTSS) displayed a poster at the mixer and graduate student representatives Carrie Long and Laila Al-Eryani interacted with many interested trainees. This event gave our specialty section great visibility within SOT. Many attendees inquired about the work of a dermal toxicologist, the activities of our specialty section, and our officers. This event was one of many at the 2016 Annual Meeting, including the DTSS reception. We had great attendance and were able to award a lucky trainee member an iPad mini along with several student and postdoc awards all thanks to our generous sponsors.

We look forward to seeing all DTSS and SOT members at the 2017 meeting in Baltimore. Graduate students and postdocs – don't forget to request a free ticket when registering for the meeting and attend the mixer on Sunday night! Not only can you stop by our poster and learn more about the specialty section, but you also have a chance to win various prizes and eat delicious food. Additional trainee opportunities at the Annual Meeting include: the Chat with an Expert sessions, Poster Tours for Trainees, Trainee Discussions with Speakers, and the ToxShowDown, a game show-style event. Information for all these opportunities will be posted on the annual meeting website soon. Also, keep an eye out for award deadlines and don't forget to apply!

We are excited to serve as your representatives and we are eager to receive any comments/concerns/suggestions regarding our service of the specialty section and our postdoctoral and student members. See you in Baltimore!

-Carrie Long and Laila Al-Eryani, and Gabriella Composto
Postdoctoral, Graduate Student, and Vice-Graduate Student DTSS Representatives

Recent DTSS Member Publications

The following is a list of publications self-reported by DTSS members that were published in 2016:

Composto GM, **Laskin JD, Laskin DL**, Gerecke DR, Casillas RP, Heindel ND, Joseph LB, **Heck DE**. Mitigation of nitrogen mustard mediated skin injury by a novel indomethacin bifunctional prodrug. *Exp Mol Pathol.* 100(3):522-531, 2016.

Dalton, C.H., Graham, S.J., and Jenner, J. "Effect of exposure area on nerve agent absorption through skin *in vitro*" *Toxicology In Vitro* 30 (1) 454-461 DOI: 10.1016/j.tiv.2015.09.016 (2015)

Dalton, C.H., Hall, C.A., Lydon, H.L., Chipman, J.K., Graham, J.S, Jenner, J. and Chilcott, R.P. "Development of haemostatic decontaminants for treatment of wounds contaminated with chemical warfare agents. 2: Evaluation of *in vitro* topical decontamination efficacy using undamaged skin" *Journal of Applied Toxicology* 35 (5): 543 - 550 (2015)

Bianca Ferruccio, Manoela Tiago, Richard D. Fannin, Liwen Liu, Kevin Gerrish, Silvy Stuchi Maria-Engler, Richard S. Paules, **Silvia B.M. Barros**. Molecular effects of 1-naphthyl-methylcarbamate and solar radiation exposures on human melanocytes. *Toxicology in Vitro* 38C (2017) pp. 67-76

Hughes, M.F. and Edwards, B.C. (2016) In vivo dermal absorption of pyrethroid pesticides in the rat. *Journal of Toxicology and Environmental Health, Part A* 79:83-91.

Justiniano R and Wondrak GT. Book chapter: The aryl hydrocarbon receptor (AhR) as an environmental stress sensor and regulator of skin barrier function: Molecular mechanisms and therapeutic opportunities in 'Skin Stress Response Pathways: Environmental Factors and Molecular Opportunities'. 2016, Springer [ISBN 978-3-319-43157-4].

Justiniano R, Williams JD, Perer J, Hua A, Lesson J, Park SL, Wondrak GT. The B6-vitamer pyridoxal is a sensitizer of UVA-induced genotoxic stress in human primary keratinocytes and reconstructed epidermis. *Photochemistry and Photobiology*. 2016, Accepted.

Recent DTSS Member Publications Continued

Hall, C.A., Lydon, H.L., Dalton, C.H., Chipman, J.K., Graham, J.S. and Chilcott, R.P. "Development of haemostatic decontaminants for treatment of wounds contaminated with chemical warfare agents. 1: Evaluation of clothing efficacy in the presence of certain contaminants" *Journal of Applied Toxicology* 35 (5): 536 - 542 (2015)

Knaak, J.B., Dary, C.C., Zhang, X., Gerlach, R.W., Tornero-Velez, R., Chang, D.T., Goldsmith, R., Blancato, J.N. (2012). Parameters for Pyrethroid Insecticide QSAR and PBPK/PD Models for Human Risk Assessment. *Rev. Environ. Contam. Toxicol.* 219: 1-251.

J.B. Knaak, C. Timchalk and R.Tornero-Velez (editors). Parameters for Pesticide QSAR and PBPK/PD Models for Human Risk Assessment and published in ACS Symposium Series 1099 (2012). Chapter 1 . Parameters for Pesticide QSAR and PBPK/PD Models to Inform Human Risk Assessments. M.R. Goldsmith, J.C. Johnson, D.T. Chang, R. Tornero-Velez, J.B, Knaak, and Curtis C. Dary.

J.B. Knaak, C. Timchalk and R.Tornero-Velez (editors). Parameters for Pesticide QSAR and PBPK/PD Models for Human Risk Assessment and published in ACS Symposium Series 1099 (2012). Chapter 2. Chiral Chemistry and Toxicity Assessments for Pyrethroid Pesticides, Robert W. Gerlach.

Knudsen, G.A., Hughes, M.F., Sanders, J.M., Hall, S.M., and Birnbaum, L.S. (2016) Estimation of human percutaneous bioavailability for two novel brominated flame retardants, 2-ethylhexyl tetrabromobenzoate (EH-TBB) and bis(2-ethylhexyl) tetrabromophthalate (BEH-TEBP). *Toxicology and Applied Pharmacology* 311:117-127.

Knudsen, G.A., Sanders, J.M., Hughes, M.F., Hull, E.P., and Birnbaum, L.S. (2016) The biological fate of decabromodiphenyl ethane following oral, dermal or intravenous administration. *Xenobiotica* doi:10.1080/00498254.2016.1250180.

Recent DTSS Member Publications Continued

Special Issue: Countermeasures Against Chemical Threats I

Edited by **Jeffrey D. Laskin** (Rutgers University School of Public Health); Chemical threats, both accidental and deliberate, are of critical concern globally. This, the first of two Annals issues devoted to this topic, presents 23 papers that discuss various countermeasures against chemical threats. *Ann N Y Acad Sci.* 1374(1), 2016

Special Issue: Countermeasures Against Chemical Threats II

Edited by **Jeffrey D. Laskin** (Rutgers University School of Public Health) Chemical threats, both accidental and deliberate, are of critical concern globally. This issue, the second of two devoted to this topic, presents 19 papers that discuss various countermeasures against chemical threats, *Ann N Y Acad Sci.* 1378(1), 2016.

Learn, D.B., and Elliott, M. 2016. Cutaneous Phototoxicity: Clinical Observations versus Histopathological Findings. *Toxicol. Path.* 44(4): 545-55.

Learn, D.B., Forbes, P.D., and Sambuco, C.P. Photosafety Assessment. In: *A Comprehensive Guide to Toxicology in Preclinical Drug Development*. Faqi, A.S., Ed. Academic Press, an imprint of Elsevier, London, UK. 2016. Second edition is in press.

Long CM, Marshall NB, Lukomska E, Kashon ML, Meade BJ, Shane H, and Anderson SE. A Role for Regulatory T Cells in a Murine Model of Epicutaneous Toluene Diisocyanate Sensitization. *Toxicological Sciences.* 2016 July; 152(1):85-98. doi: 10.1093/toxsci/kfw074

Miyani, V.A. and Hughes, M.F. (2016) Assessment of the *in vitro* dermal irritation potential of cerium, silver and titanium nanoparticles in a human skin equivalent model. *Cutaneous and Ocular Toxicology* doi: 10.1080/15569527.2016.1211671.

Rice, H., Dalton, C.H., Price, M.E., Graham, S.J., Green, A.C., Jenner, J., Groombridge, H.J. and Timperley, C.M. "Toxicity and medical countermeasure studies on the organophosphorus nerve agents VM and VX" *Proceedings of the Royal Society a-Mathematical Physical and Engineering Sciences* 471 (2176): DOI: 10.1098/rspa.2014.0891 (2015)


Recent DTSS Member Publications Continued

Szilagyi JT, Mishin V, Heck DE, Jan YH, Aleksunes LM, Richardson JR, Heindel ND, Laskin DL, Laskin JD. Selective targeting of heme protein in cytochrome P450 and nitric oxide synthase by diphenyleneiodonium. *Toxicol Sci.* 151(1):150-159, 2016.

Tewari-Singh N, Agarwal R. Mustard vesicating agent-induced toxicity in the skin tissue and silibinin as a potential countermeasure. *Ann N Y Acad Sci.* 2016 Jun;1374(1):184-92. PMID: 27326543; PMCID: PMC4940265.

Udasin RG, Wen X, Bircsak KM, Aleksunes LM, Shakarjian MP, Kong AN, Heck DE, Laskin DL, Laskin JD. Nrf2 regulates the sensitivity of mouse keratinocytes to nitrogen mustard via multidrug resistance-associated protein 1 (Mrp1). *Toxicol Sci.* 149(1):202-212, 2016.

Wohlman IM, Composto GM, Heck DE, Heindel ND, Lacey CJ, Guillon CD, Casillas RP, Crutch CR, Gerecke DR, Laskin DL, Joseph LB, Laskin JD. Mustard vesicants alter expression of the endocannabinoid system in mouse skin. *Toxicol Appl Pharmacol.* 303:30-44, 2016.



Please send publication references (journal articles, blogs, book chapters, etc.) for inclusion in the next newsletter!

Pictures from 2016 DTSS Reception



Dr. George deGeorge awards an iPad mini door prize generously sponsored by MB Research Laboratories.



Margaret Kraeling receives the Informa Healthcare Award from **Dr. Wally Hayes**.



Outgoing Treasurer **Dr. Jill Harvilchuck** receives a certificate of appreciation for her service from outgoing President **Dr. Jeffrey Yourick**.



Outgoing Student Representative **Carrie Long** receives a certificate of appreciation for her service from outgoing President **Dr. Jeffrey Yourick**.



Outgoing Student Vice Representative **Laila Al-Eryani** receives a certificate of appreciation for her service from outgoing President **Dr. Jeffrey Yourick**.



Dr. Hanjiang Zhu receives the Stratacor Postdoctoral Award presented by **Dr. Neera Tewari-Singh**.



Nicole Panstingel receives the Battle Research Award for her work: The Effect of Silver Nanoparticles on Human Integument Post Thermal Injury.



Carrie Long receives the Charles River Student Travel Award from incoming President **Dr. Doug Learn**.



Dr. Hanjiang Zhu receives the Dermal Toxicology Specialty Section Postdoctoral Travel Award presented by **Dr. Doug Learn**.



Dr. Thomas Snider receives the DTSS Best Paper of the Year award presented by **Dr. Neera Tewari-Singh**.



Dr. George deGeorge draws the name of a lucky trainee for an iPad mini door prize, generously sponsored by MB Research Laboratories.



Dr. Jeffrey Yourick recognizes **Dr. Neera Tewari-Singh** as the outgoing Senior Councilor.



Dr. Jeffrey Yourick recognizes **Dr. Jens Thing Mortensen** as the outgoing Past President.



Dr. Jeffrey Yourick addresses the crowd as the outgoing president of the specialty section.



Dr. Doug Learn addresses the crowd as the incoming president of the specialty section.