The Society of Toxicology annual meeting is coming up soon, March 6-10, 2011, in Washington, DC. The Toxicology and Exploratory Pathology Specialty Section will have a lunch meeting on Monday, March 7, and I look forward to seeing you. The TEPSS meeting is a good time to network with others with pathology interests. The student travel award recipients will present their research and we will conduct a short general business meeting.

This is the 50th anniversary of the founding of the SOT. The society is using this occasion as a time to reflect on the achievements and advances of the field of toxicology and the growth of the society. A number of events are planned, including a meeting on Tuesday, March 8 (4:30 - 6:30 pm) “Commemorating the Past and Planning for the Future”; a party on Tuesday, March 8, 6:30 - 9:30 pm; a book reflecting on various aspects of toxicology reflecting the breadth of our field; and many exhibits, including posters on the history of each specialty section. The TEPSS poster was assembled by our Post-doctoral Representative, Dozie Amuzie. Thanks, Dozie! There will also be a series of special review articles in Toxicological Sciences during the upcoming year.

At the annual meeting, each of the various symposia, workshops, and continuing education courses are initiated and organized by the specialty sections, regional interest groups, and special interest groups. By sponsoring sessions, TEPSS increases the visibility and awareness of pathology as part of toxicology. At the 2011 meeting, we are sponsoring two sessions. Debra Laskin from Rutgers organized a symposium on Macrophages: Regulators of Toxicity and Disease Pathogenesis, and Manu Sebastian (Columbia); and Zaher Radi (Pfizer) organized a Continuing Education session on Stem Cells' Utility in Toxicology Screening. See pages 8 and 9 for more information.

Even though I am just getting used to writing 2011 instead of 2010, the SOT is now planning the 2012 meeting. Soon, TEPSS and the other specialty sections will be submitting proposals for the symposia, workshops, and continuing educations for the 2012 meeting. Organizing a session is an excellent way to highlight your research area to the SOT membership, as well as a way to educate the SOT membership about various areas of pathology. I encourage TEPSS members to submit proposals for sessions for the 2012 meeting. The proposals, with a cogently written justification, a finalized list of speakers, and a compelling description of their talks, are due in April, 2011.

(Continued on Page 2)
Presidents Message (continued)

Because the SOT receives so many high-quality proposals, selection is a very competitive process and often excellent proposals are turned down. This can be frustrating, since it takes considerable time to organize the session proposals (and we all have day jobs!). However, if a proposal is rejected, it is possible to revise it and submit it again. Feel free to contact me or any of the TEPSS leadership team for help if you would like to consider putting a session together or working on a session.

The Society of Toxicologic Pathology (STP) has been greatly helpful to us. Last year, the STP officers met with TEPSS officers to discuss ways that the two organizations can work together. STP has considerable experience and expertise at organizing Continuing Education sessions on many aspects of toxicologic pathology, and they offered to set up similar sessions for the SOT meetings. Unfortunately, our first attempt to do this, a proposal for a continuing education session on cardiovascular pathology for non-pathologists, was not accepted last year, but I am optimistic that this will work in the long run.

The SOT has also tried recording sessions and making them available from the SOT website after the meeting. It’s difficult to find funding and time to participate in the meetings, and this would be a great, cost-effective way for people to learn. To find the descriptions of on-line sessions, go to the SOT website→Members→Services→Continuing Education→Annual Meeting CE courses. Presently, sessions include:

- Ocular toxicity
- Comparative biology of the lung
- Mitochondrial toxicity: animal models and screening methods in drug development
- Renal pathology for the non-pathologist
- Stress as a confounding factor
- Translation of safety biomarkers in drug discovery and development
- Basic bioinformatics

There is a fee for these courses (but they are free to students who are SOT members!), but the cost is quite minimal compared with the cost of attending a meeting in person.

We are trying to make the TEPSS website more useful. One feature is a compendium of upcoming meetings, conferences, and continuing education courses sponsored by a variety of organizations. Norm Barlow, the Vice-President-Elect, has been our website liaison and has been updating this information regularly.

Thank you to all of you who have been active in TEPSS. If you have not been, please consider getting involved. It is an excellent way to increase the knowledge, impact, and stature of pathology in the SOT. You can contact any of the TEPSS officers and discuss ideas on how you can get involved.

Glenn Cantor, DVM, PhD, Dipl ACVP
Veterinary Pathology Fellow
Discovery Toxicology
Bristol-Myers Squibb Co.
Princeton NJ 08543
The International Academy of Toxicologic Pathology (IATP) was established in 1999. The purpose of the IATP is to recognize and accredit highly accomplished toxicologic pathologists and to ensure the competence and experience of professional practitioners of toxicologic pathology whose work affects the public welfare throughout the world. Fellow accreditation is through a peer review process. Fellows of IATP are scientists who have achieved expert status in the practice of toxicologic pathology through scientific leadership and innovation which benefits society and their profession. Accreditation in IATP is based on formal training in pathology, demonstrated achievement, proven ability, continuing practice and expertise. Fellows of IATP are sought out by agencies, universities and other organizations to serve as guest lecturers, panel experts, and consultants. Fellows of IATP seek to give back to the profession by sponsoring training courses and symposia at national and international meetings as well as sponsoring the Charles Capen award. The Charles Capen Travel Award recognizes Dr. Charles Capen and his legacy as a researcher, teacher, and mentor to the pathology and toxicology communities spanning more than four decades. Dr. Capen was recognized worldwide as an exceptional leader in veterinary and biomedical research. He was a highly regarded mentor to graduate students and post-doctoral scientists. His students and trainees are now leaders throughout academia, government, and industry and have contributed significantly to his reputation as an outstanding teacher and research mentor. For more information and criteria on accreditation please review the website at www.iatpfellows.org.

Douglas C. Wolf, D.V.M., Ph.D., Fellow IATP, ATS

Trainee’s Perspective

Chidzie Amuzie, TEPSS Post-doctoral Representative: Today’s biomedical science trainee faces many challenges in an increasingly sophisticated, uncertain, diverse, global environment. In 2004, I arrived in Michigan, from Nigeria, to work with Chinese, Korean, Indian and American colleagues in a program directed by a Turkish scientist. The expectations were clear (or later made clear): research integrity and productivity, collegial communication, earning a degree in good time, and progressing to a successful career. What is the best way to use my background and talents to best attain these expectations, while remaining almost sane? The answer(s) are rarely found in those research and development seminars that provide free pizza. Mentoring is a process that best approximates the answer, and does not always mean graduate advisor or graduate committee.

According to Wikipedia, “Mentoring is a process that always involves communication and is relationship based, but its precise definition is elusive”. I have seen trainees who feel that their Principal Investigator (PI) is mostly a boss and I have seen PIs who feel that they do not have enough experience or resources to guide trainees in their (always evolving) career path. This is a problem that SOT has attempted to address through different fora at the annual meetings and beyond. Lunch with an expert (LWAE) and Mentor Match are two good ways for trainees who feel the need for extra or more suitable mentors. I strongly encourage TEPSS mentors and mentees to use the Mentor Match program, especially when you cannot come to the annual meeting. Please see SOT website for details at http://www.toxicology.org/ai/newcrad/mentormatch.asp. Relevant seminars are organized during the annual meetings and post-doctoral association webinars. These can be found on http://www.toxicology.org/ai/crad/Seminar.asp. They offer trainees broad principles for a successful career. However, apart from Mentor Match, these general programs do not offer a mentor that seeks to understand a trainee’s peculiarity, and provide person-specific advice with a thorough knowledge of the sub-specialty.
Trainee’s Perspective (continued)

In my view, TEPSS has the best opportunity for mentoring among the seven SOT specialty sections and special interest groups that I have been part of. I wish I had joined TEPSS earlier. The reason(s) are not clear to me but there are two ideas: (1) favorable mentee-mentor ratio and (2) the apprenticeship that produces pathologists. Unlike many places where mentees are competing for attention with mentors, TEPSS has a mentee:mentor ratio of approximately 1:10, making it a haven for mentees (even shy ones). It also seems that many pathologists are products of intense one-on-one mentoring during their job training, graduate training, residency, certification, etc. Their experience with and understanding of the mentoring process might prepare TEPSS members to be excellent mentors. I experienced this as a PhD student at Michigan State University. Dr. Jack Harkema (former TEPSS president) was not my PI but taught me to love pathology and understand the role that it plays in biomedical research and discovery. The value of mentorship within TEPSS is best highlighted by trainee awards that are named after exceptional mentors like Drs. Roger O. McClellan and Charles C. Capen.

For trainees whose research involves any pathology, the time to join and participate in TEPSS is now. You will find mentorship, learn leadership and build a valuable network for your evolving career. For all our senior colleagues who have helped me and other trainees with your experience and advice, we are thankful. Happy 50th anniversary!

Chidzie J. Amuzie, DVM, PhD
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email: amuziecdcpah.msu.edu

By-Law Revision

A revision of the TEPSS by-laws has been long overdue. Thanks to heroic efforts by our Secretary-Treasurer, Tom Magee, a draft of the revised by-laws has been sent to the SOT Council and legal department for review. We expect that it will be sent to the membership for approval shortly. It is important to have a quorum of votes to pass a by-law revision, so we would appreciate it if you would vote when you receive the e-mail.
2011 Election Results

Vice-President-Elect, 2011 – 2012
Dennis J. Meyers, DVM, DACVIM, DACVP

Councilor, 2011 – 2013
Lynda L. Lanning, DVM, DABT

Congratulations to these new officers and thanks to all who participated in the 2011 election!!

TEPSS Membership Profile

<table>
<thead>
<tr>
<th>Year</th>
<th>Total Members</th>
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<tr>
<td>2007-2008</td>
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<td>2008-2009</td>
<td>137</td>
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Specialty Section dues are important to our overall financial health as a section, and the timely renewal of your TEPSS membership is greatly appreciated, thank you!!
Endowment - Roger O. McClellan Award

We encourage donations to the SOT Roger O. McClellan Student Award Fund. This fund, established in 2007, was created to encourage individuals trained in veterinary medicine to pursue careers in biomedical research including comparative toxicology and pathology. The Fund was created with an initial generous gift from Roger and Kathleen McClellan. Proceeds from the Fund are used to provide cash stipends to Award recipients selected on the basis of the scientific merit of papers proposed for presentation at the Annual Meeting.

For further information, go to the SOT website:  
http://www.toxicology.org/ai/csot/specific_funds.asp#roger

Student Travel Awards

TEPSS encourages student participation in the toxicology profession with three awards, the Roger O. McClellan Student Award, an endowed award administered jointly with the Comparative and Veterinary Specialty Section; the Charles Capen Student Travel Award; and the Toxicologic and Exploratory Pathology Specialty Section Student Travel Award.

The 2010 Student Awardees are:

Roger O. McClellan Student Award:
Yogesh Saini, Michigan State University  
Topic: Hypoxia Inducible Factor 1 Alpha (HIF-1α) Modulates Cobalt-Induced Acute Lung Inflammation  
Advisor: John LaPres

Charles Capen Student Travel Award:
Fang Liu, Nagoya University  
Topic: Nrf-2 Null Mice are More Susceptible to 1-Bromopropane-Induced Hepatotoxicity  
Advisor: Gaku Ichihara

TEPSS Student Travel Award:
Erica Sparkenbaugh, Michigan State University  
Topic: HIF-1α Deletion Protects Mice from Acetaminophen Hepatotoxicity and Reduces Activation of the Hemostatic System  
Advisor: Robert Roth
Student Travel Awards (continued)

The 2011 Student Awardees are:

**Roger O. McClellan Student Award:**
Madhusudan P Goravanahally, National Institute for Occupational Safety and Health (NIOSH), Centers for Disease Control and Prevention (CDC), and West Virginia University, Morgantown, West Virginia

  - Topic: Local and systemic toxicity of implanted accelerator-free polychloroprene-type and latex surgical glove material
  - Advisor: Ann Hubbs

**Charles Capen Student Travel Award:**
Tobias Fuchs, Institute of Toxicology, Merck Serano, Darmstadt, Germany

  - Topic: State-of-the-art detection of nephrotoxicity by urinary protein biomarkers
  - Advisor: Stefan O. Mueller

**TEPSS Student Travel Award:**
Christina Schmitt, Institute of Toxicology, Merck Serano, Darmstadt, Germany

  - Topic: Retrospective gene expression analysis using formalin-fixed tissue blocks from toxicological studies
  - Advisor: Stefan O. Mueller

The three 2011 awardees will present brief summaries of their work at the TEPSS reception, Monday, March 7, 12 – 1:30 pm. Please visit their posters.

2012 Student Travel Awards

We encourage PhD students, veterinary students, and veterinary residents who are doing toxicology research to apply for student awards for 2012. A requirement is to present a poster or oral presentation at the SOT annual meeting.

It is essential to plan ahead, since the abstracts are due in the beginning of October 2011. Criteria for the 2011 awards are listed in the SOT website. Although the 2012 criteria have not been announced, it is likely they will be similar.
Stem Cells’ Utility in Toxicology Screening
Sunday, March 6, 1:15 – 5 pm
Chairpersons: Manu M. Sebastian, Columbia University, New York, NY, and Zaher A. Radi, Pfizer Global Research and Development, Cambridge, MA

The development of toxicological screening tools for evaluating toxicity of new drug candidates has been a major focus in the pharmaceutical industry. Human embryonic stem cells (hESC) and induced pluripotent stem (iPS) cells and their lineage cells can be used as tools to predict developmental and other toxicities of drug candidates since several of the human biochemical pathways are active in these cells. In addition, stem cells can also be used to help in the mechanistic understanding of how a specific class of compounds leads to toxicity. Participation in this course will provide a basic overview of the utility of stem cells in drug discovery and update toxicologists on a variety of stem cells applications as screening tool for evaluating toxicity in multiple organ systems, thereby giving toxicologists a better understanding of the potential practical application of these in vitro methods for safety and risk assessment.

Introduction: “Stem Cells As Tools for Toxicology Screening”, Manu M. Sebastian, Columbia University, New York, NY

Metabolomics of Human Embryonic Stem Cells and Predictive Biomarkers of Developmental Toxicity, Gabriela Cezar, University of Wisconsin, Madison, WI

Stem Cells and Mice with Humanized Livers: New Tools for Drug Metabolism and Toxicology, Stephen Strom, University of Pittsburgh Medical School, Pittsburgh, PA


Stem Cells in Preclinical Drug Development, Hirdesh Uppal, Genentech, Inc., South San Francisco, CA

Concluding Remarks, Zaher A. Radi, Pfizer Global Research and Development, Cambridge, MA
Macrophages: Regulators of Toxicity and Disease Pathogenesis
Tuesday March 8, 1:30 – 4:15
Chairpersons: Debra Laskin, Rutgers University, New Brunswick NJ and Andrew Gow, Rutgers University, Piscataway, NJ

Macrophages function as control switches of the immune system, providing a balance between pro- and anti-inflammatory responses. To accomplish this, they develop into different subsets: classically (M1) or alternatively (M2) activated macrophages. Whereas M1 macrophages display a cytotoxic, proinflammatory phenotype, M2 macrophages, suppress immune and inflammatory responses and participate in wound repair and angiogenesis. Critical to the actions of these divergent or polarized macrophage subpopulations is the regulated release of inflammatory mediators. When properly controlled, classically activated M1 macrophages effectively destroy invading pathogens, tumor cells and foreign materials. However, when M1 activation becomes uncontrolled, these cells release excessive quantities of cytotoxic mediators that contribute to disease pathogenesis. The activity of M1 macrophages is countered by alternatively activated M2 macrophages which release mediators that down regulate M1 cells, and stimulate growth, extracellular matrix turnover and tissue repair. Aberrant functioning of M2 macrophages can lead to fibrosis and tumor metastasis and progression. Ultimately, it is the balance in the production of mediators by these two cell types that determines the outcome of the tissue response to chemical toxicants and disease progression. In this symposium, different models are presented to illustrate this divergent role of macrophages in disease pathogenesis and toxicity.

Introduction: “Macrophages: Regulators of Toxicity and Disease Pathogenesis”, Debra Laskin, Rutgers University, New Brunswick NJ

Macrophages and Hepatotoxicity: A Battle of Forces, Debra Laskin, Rutgers University, New Brunswick, NJ

Lung Macrophage Responses to Bioactive Engineered Nanomaterials (ENM) Involves Activation of the NLRP3 Inflammasome, Andrij Holian, University of Montana

Macrophage Diversity and Polarization in Immunopathology, Alberto Mantovani, Instituto Clinico Humanitas, Milan, Italy

Mechanisms of Microglial Activation in Response to Toxicants, Andrew Gow, Rutgers University, Piscataway, NJ

Macrophage Diversity Promotes Tumor Progression and Metastasis, Jeffrey W. Pollard, Louis Goldstein Swan Chair in Women's Cancer Research, Director, Center for the Study of Reproductive Biology and Women's Health, Deputy Director, Cancer Center, Albert Einstein College of Medicine, NY

Panel Discussion/Q&A, Debra Laskin, Rutgers University, New Brunswick NJ and Andrew Gow, Rutgers University, Piscataway, NJ