Society of Toxicologic Pathology

Toxicologic Pathology of the Digestive Tract and Pancreas

32nd Annual Symposium

Portland, Oregon

Oregon Convention Center
June 16–20, 2013

www.toxpath.org

Annual Symposium Overview

Registration Desk Hours

CC—Prefunction Lobby A

Friday, June 14	4:00 PM–6:00 PM
Saturday, June 15	8:00 AM–6:00 PM
Sunday, June 16	7:00 AM–6:00 PM
Monday, June 17	7:00 AM–5:30 PM
Tuesday, June 18	7:30 AM–12:00 Noon
Wednesday, June 19	7:30 AM–5:30 PM
Thursday, June 20	7:30 AM–12:00 Noon

Events at the Oregon Convention Center are noted as CC.

Saturday, June 15

9:00 AM–4:30 PM	**NTP Satellite Symposium Pathology Potpourri** CC—Oregon Ballroom 201
7:00 PM–10:00 PM	**Reception Sponsored by Charles River** DoubleTree Hotel—Multnomah Ballroom
1:00 PM–5:00 PM	**5th ACVP/STP Coalition Scientific Conference for Veterinary Pathology Fellows** CC Meeting Room—A105

Sunday, June 16

8:00 AM–12:00 Noon	**CE 1: Role of the Pathologist in GLP Studies** CC—Oregon Ballroom 202
8:00 AM–12:00 Noon	**Career Development Workshop: Environmental Toxicologic Pathology** CC—Oregon Ballroom 201
1:30 PM–5:25 PM	**CE 2: Inflammatory Biomarkers—Sponsored by the STP Clinical Pathology Special Interest Group (CPIG)** CC—Oregon Ballroom 201
1:30 PM–5:25 PM	**CE 3: Juvenile Animal Studies in Pediatric Drug Development—Sponsored by the American College of Toxicology (ACT)** CC—Oregon Ballroom 202
1:30 PM–5:15 PM	**CE 4: Immunogenicity/Hypersensitivity of Biologics** CC—Oregon Ballroom 203
5:30 PM–7:00 PM	**STP Welcome Reception** CC—Exhibit Hall A

Monday, June 17

7:00 AM–8:00 AM	**Continental Breakfast** CC—Exhibit Hall A
7:00 AM–4:30 PM	**Exhibits and Posters Open** CC—Exhibit Hall A
8:00 AM–8:05 AM	**Symposium Welcome** CC—Oregon Ballroom
8:10 AM–9:00 AM	**Keynote Address: Gut Microbiota, Low-Grade Inflammation and the Metabolic Syndrome** CC—Oregon Ballroom
9:00 AM–12:00 Noon	**Session 1: Normal Digestive Tract Functional Anatomy and Physiology** CC—Oregon Ballroom
10:00 AM–10:30 AM	**Break/Posters/Exhibits** CC—Exhibit Hall A
12:00 Noon–1:30 PM	**Exhibitor Sponsored Lunch for Scientific Attendees** CC—Exhibit Hall A
12:30 PM–1:30 PM	**Career Development Lunchtime Series: Transitioning to Management** CC—Meeting Room A105
1:30 PM–5:00 PM	**Session 2: Inflammatory Bowel Disease** CC—Oregon Ballroom
3:05 PM–3:35 PM	**Break Hosted by AbbVie/Posters/Exhibits** CC—Exhibit Hall A
5:30 PM–6:30 PM	**Town Hall Meeting: Thresholds in Toxicologic Pathology** CC—Oregon Ballroom
7:00 PM–10:00 PM	**Reception Sponsored by EPL** DoubleTree Hotel—Cascade Ballroom

Tuesday, June 18

7:00 AM–8:00 AM	**Continental Breakfast Hosted by AbbVie** CC—Exhibit Hall A
7:00 AM–12:15 PM	**Exhibits and Posters Open** CC—Exhibit Hall A
8:00 AM–12:00 Noon	**Session 3: Digestive Tract Toxicity and Risk Assessment** CC—Oregon Ballroom
9:55 AM–10:25 AM	**Break/Posters/Exhibits** CC—Exhibit Hall A
12:15 PM –1:15 PM	**Visiopharm Exhibitor-Hosted Session** CC—Meeting Room A105
Tuesday Afternoon	**FREE TIME**

Wednesday, June 19

7:00 AM–8:00 AM	**Continental Breakfast** CC—Exhibit Hall A
7:00 AM–11:30 AM	**Exhibits and Posters Open** CC—Exhibit Hall A
8:00 AM–12:00 Noon	**Session 4: Digestive Tract Carcinogenesis** CC—Oregon Ballroom
10:10 AM–10:30 AM	**Break Hosted by AbbVie Posters/Exhibits** CC—Exhibit Hall A
12:00 Noon–1:30 PM	**Practical Application of MRI Histology in Toxicologic Pathology— Sponsored by IATP** CC—Meeting Room B113
1:30 PM–5:00 PM	**Session 5: Biomarkers of Digestive Tract and Pancreatic Injury and Disease** CC—Oregon Ballroom
2:35 PM–3:00 PM	**Break** CC—Oregon Ballroom Foyer
5:30 PM–5:50 PM	**Awards Ceremony** CC—Oregon Ballroom
5:50 PM–6:30 PM	**Annual Business Meeting** CC—Oregon Ballroom
7:00 PM–9:00 PM	**President's Reception** DoubleTree Hotel—Lloyd Center Ballroom

Thursday, June 20

7:00 AM–8:00 AM	**Continental Breakfast** CC—Oregon Ballroom Foyer
8:00 AM–12:00 Noon	**Session 6: Pancreatic Toxicity and Carcinogenesis** CC—Oregon Ballroom
10:05 AM–10:35 AM	**Break** CC—Oregon Ballroom Foyer
12:00 Noon	**Meeting Adjourned**

Toxicologic Pathology of the Digestive Tract and Pancreas

Oregon Convention Center
June 16–20, 2013

Welcome !

Dear Colleagues and Guests,

On behalf of the Society of Toxicologic Pathology, welcome to the STP 32nd Annual Symposium at the Oregon Convention Center. The 2013 Scientific Program Committee has planned an outstanding week of sessions on "Toxicologic Pathology of the Digestive Tract and Pancreas." I encourage you to take a few minutes to review the schedule of scientific and poster sessions and special events in this *Program* to get the most benefit from the week ahead.

The interactive NTP Satellite Symposium, "Pathology Potpourri," will be held all day Saturday, June 15 and will focus on presentations of challenging lesions. It is free to all attendees.

You may still register for one or more of the Continuing Education sessions by stopping by the STP Registration Desk just outside the Exhibit Hall. Four optional half-day Continuing Education (CE) courses include: Role of the Pathologist in GLP Studies (CE AM 1), Inflammatory Biomarkers (CE PM 2), Juvenile Animal Studies in Pediatric Drug Development (CE PM 3), and Immunogenicity/Hypersensitivity of Biologics (CE PM 4).

There will be two Career Development programs offered this year. The Career Development Workshop "Environmental Toxicologic Pathology" will be offered on Sunday before the general sessions begin. There is no extra fee to attend the career development program. The Career Development Lunchtime Series "Transitioning to Management" will take place on Monday and will be open to all. There is no extra fee to attend the Lunchtime Series, however, registration is required.

The Exhibit Hall is always an important part of our meeting and I encourage you to visit all of the exhibitors in their booths. The exhibitors will again sponsor a Monday buffet lunch in the hall for all symposium attendees.

Don't miss the Town Hall Meeting Monday evening when "Thresholds in Toxicologic Pathology" will be the topic of lively discussion.

STP Special Interest Groups (SIGs) have scheduled meetings during the week. All are open to members and interested nonmember attendees. Please check the Registration Desk for meeting times and locations for: Clinical Pathology, Neuropathology, Reproductive Toxicologic Pathology, Environmental Toxicologic Pathology, and Cardiovascular Pathology.

June is a wonderful time to enjoy Portland. Tuesday will again be a free afternoon for attendees and I encourage you to explore Portland's many outdoor attractions and museums. Each attendee will receive a free ticket at registration that can be used to travel by light rail between the hotel and convention center and throughout Portland. The ticket can also be used to ride Portland buses and the streetcar throughout the week.

I look forward to seeing you this week!

Sincerely,

Daniel Morton

Daniel Morton
STP President

Executive Committee

STP President: Daniel Morton, DVM, PhD, DACVP, DACLAM
Pfizer, Inc.

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National Toxicologic Program and National Institute of Environmental Health Sciences

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Charles River Laboratories

Dianne M. Creasy, PhD, DipRCPath (Tox), FRCPath
Huntingdon Life Sciences

Pierre Tellier, DVM, MSc, DACVP
Charles River Laboratories

Denise Bounous, DVM, PhD, DACVP
Bristol-Myers Squibb Company

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Richard Peterson, DVM, PhD, DACVP
(ASC Co-Chair) GlaxoSmithKline

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(STP/ACVP 2015 Steering Cmte Liaison), The Ohio State University

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Kyathanahalli Janardhan, BVSc, MVSc, PhD, DACVP
(Web-Based Education Liaison) Integrated Laboratory Systems

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(CE Subcommittee Co-Chair) AstraZeneca

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(EdC Liaison) OncoMed Pharmaceuticals

Emily Meseck, DVM, DACVP
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(CE Subcommittee Co-Chair) Pfizer Inc.

Jerrold M. Ward, DVM, PhD, DACVP
(STP/ACVP 2015 Steering Cmte Liaison) Global Vet Pathology

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Florence Poitout-Belissent, DVM, DACVP, DECVCP
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Pfizer Worldwide R&D

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Pfizer

Arlin Rogers, DVM, PhD, DACVP
University of North Carolina at Chapel Hill

A. Eric Schultze, DVM, PhD, DACVP, FIATP
Eli Lilly and Company

Piper M. Treuting, DVM, MS, DACVP
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Allison Vitsky, BS, DVM, DACVP
Pfizer

Klaus Weber, PhD, DVM, MSBiol
AnaPath GmbH

Jerrold M. Ward, DVM, PhD, DACVP
Global Vet Pathology

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To reduce paper usage and to provide premeeting access to information, speaker and poster abstracts, the attendee list, session evaluations, and links to meeting-related surveys are all online. Please visit **www.toxpath.org/AM2013/materials.asp**.

You will be prompted for a login. Members can access with normal STP login. Other attendees can access with login provided via email.

Annual Meeting Information

Program

Look for us on Twitter!
Follow us at **@ToxPathNet** for meeting and event information.

Poster Presentations

Please note that poster abstracts are online, and can be downloaded at **www.toxpath.org/AM2013/materials.asp**

Exhibits

Looking Ahead

STP Membership

Sponsorship

Scan this code for quick and easy access to up-to-date Annual Meeting information.

This is a QR (Quick Response) code. The code can be decoded by most camera-equipped mobile phones with a free downloadable application, thereby offering a direct link from this printed material to the meeting materials and information on the STP website. Download a QR reader application and try it!

STP 2013 Lifetime Achievement Award Recipient

Dr. Carl L. Alden, DVM, DACVP

The Society of Toxicologic Pathology is proud to honor Carl L. Alden, DVM, DACVP, as the recipient of the 2013 STP Lifetime Achievement Award. Dr. Alden has distinguished himself as a pioneer and thought leader in the field of toxicologic pathology, a committed life-long contributor to the STP, and a mentor to generations of toxicologic pathologists.

Carl earned his DVM degree from The Ohio State University in 1968 and completed a residency in veterinary pathology at the US Army Medical Research and Nutrition Laboratory, Denver, Colorado in 1971. He earned a master of science degree from The Ohio State University, College of Veterinary Medicine in 1976. Carl worked at the Ohio Department of Agriculture Diagnostic Laboratory from 1971–1975, and was chairman, Division of Comparative Pathology, West Virginia University from 1975–1976. He was a section head, Pathobiology at the Procter and Gamble Company from 1977–2000. Carl worked at G.D. Searle/Monsanto/Pharmacia from 1991–2000 as director, metabolism and safety evaluation. Since 2001, he was employed by Millennium Pharmaceuticals, Inc. as vice president, Drug Safety Evaluation and has recently "semiretired."

Carl is best known for his expertise and contributions in the fields of renal toxicity and carcinogenicity assessment. He characterized the spontaneous α2u globulin nephropathy in male rats, linked exacerbation of this syndrome by various chemicals to renal tubular neoplasia, and demonstrated species-specific toxicity limited to rats. He used this information to successfully convince the US Food and Drug Administration that d-limonene did not pose a carcinogenic risk to humans. Even with today's molecular tools, influencing regulatory agencies to consider species-specific mechanisms in human risk assessment is a difficult task, so Carl's success signaled a breakthrough in regulatory science. He was a key leader in testing the alternative mouse models (p53+/-, rasH2, Tg.AC, and XPA-/- mice) through the ILSI/HESI/ACT consortium to determine their utility in carcinogenicity hazard identification. These efforts contributed to a 1997 revision of the International Conference on Harmonization (ICH) guidelines for carcinogenicity testing that for the first time permitted use of alternative models in place of a two-year mouse carcinogenicity study. More recently Carl has been one of the thought leaders dedicated to eliminating the two-year rat carcinogenicity study as a part of pharmaceutical development. From 2007–2011 he was one of the most active members of PhRMA Carcinogenicity Working Group building support to use negative six-month rat findings, absence of genetic toxicology findings, and lack of evidence of hormonal dysfunction to justify eliminating some two-year rat studies. This proposal has generated interest within international regulatory circles and stimulated formal discussions of revisions of the ICH S1 guidance on carcinogenicity testing. With colleagues at Millennium Pharmaceuticals, he reviewed carcinogenicity warnings on drug labels and concluded that the two-year bioassay had little impact on pharmaceutical registration, label warnings and regulatory concerns (*Vet Pathol* 48:772-784, 2011).

Carl has a long record of exemplary service to the STP. He served on the Executive Committee from 1996–1990 and was President of the Society from 1990–1991. He served on the Editorial Board of *Toxicologic Pathology* from 1988–1995, as associate editor from 1994–1995, and as editor-in-chief from 1996–2000. He has served on the STP External Affairs Committee and Symposium Committee, and he led the Great Lakes Regional Discussion Group of STP. In 2011, he was a co-chair of the Symposium Program Planning Committee and organized and moderated the Town Hall meeting.

STP is not the only organization to benefit from Carl's leadership. Since 1981 he has served the American College of Veterinary Pathologists (ACVP) in the Renal and Toxicologic Pathology Specialty Sections. As he completes his second term as Editor-in-Chief of *Veterinary Pathology*, his positive impact on the journal is readily apparent. Carl has been a creative and dedicated leader in the STP, ACVP, American Veterinary Medical Association, Society of Toxicology, American College of Toxicology, American Registry of Pathology, ILSI Standardized Nomenclature committee, Aspen Cancer Conference, and state and regional professional societies. He has been recognized with numerous awards including Distinguished Member of the American College of Veterinary Pathologists, the Alumni Association Recognition Award, the Distinguished Alumnus Award from The Ohio State University College of Veterinary Medicine, and the Kenneth P. DuBois Award for Achievement in Toxicology from the Society of Toxicology, Midwest Regional Chapter.

Carl has positively inspired young pathologists with the passion and energy he devotes to his work and is open to learning something from everyone around him, regardless of rank or experience. He always challenges pathologists at all levels in their careers to think critically and aim high.

STP 2013 Oustanding Mentor Award Recipient

Dr. Matthew A. Wallig DVM, PhD, DACVP

The Society of Toxicologic Pathology is proud to honor Matthew A. Wallig, DVM, PhD, DACVP, as the first recipient of the STP Outstanding Mentor Award. Dr. Wallig has played an influential role in the training of toxicologic pathologists during his 26 year career at the University of Illinois. He has served as instructor, mentor, and role model to veterinary students, residents, graduate students, and pathologists aspiring to a career in the field of toxicologic pathology. Over 3,000 students have taken a course from Dr. Wallig at the University of Illinois as course coordinator/instructor in pathology including toxicologic pathology and toxicology.

Matt received a BA degree in zoology/physiology from the University of Wyoming in 1976. He earned a BS degree in 1979 in veterinary sciences and his DVM degree in 1981 from the University of Minnesota. He completed his PhD in veterinary pathology at Colorado State University in 1987. He worked as a small animal veterinary practitioner for a year after receiving his DVM and in 1987 he joined the faculty of the College of Veterinary Medicine at the University of Illinois at Champaign-Urbana, where he holds a primary appointment in the College of Veterinary Medicine and a secondary appointment in the College of Agricultural, Consumer and Environmental Sciences. He is currently professor of comparative pathology and residency coordinator in the College of Veterinary Medicine.

Matt has mentored and educated over 50 veterinary pathologists during their residencies and research training at the University of Illinois. He has been the major advisor or co-advisor for nine PhD or MS graduate student candidates and has served on over 70 doctoral and masters graduate committees for veterinary pathologists, veterinary toxicologists, nutrition scientists, and others. He has mentored five veterinary pathologists through collaborative efforts with the pharmaceutical industry, including through the ACVP/STP Coalition.

Matt established the University of Illinois Pathology Club, which later became the ACVP Student Chapter of the American College of Veterinary Pathologists (ACVP) and was the largest ACVP Student Chapter in the US for several years. It has attracted many talented veterinarians into advanced training in veterinary and toxicologic pathology. Attracting the top veterinary students into veterinary pathology training and exposing these students to toxicologic pathology early in their professional training is essential to the future of toxicologic pathology. Exposure to toxicologic pathology has been a staple of the club with students meeting with visiting toxicologic pathologists from industry each year. He often meets with students individually to answer course related questions and to assist them in finding pathology externships. In recognition of his success, He received the ACVP Outstanding Faculty Mentor Award in 2006.

The numbers of graduate students mentored, the numbers of veterinary students taught, the numbers of lectures given, and the numbers of ACVP diplomates trained are not the primary hallmarks of a great mentor. As the University of Illinois pathology training coordinator, Matt has personally guided pathologists-in-training from their first diagnostic pathology experiences through ACVP certification. He devotes personal attention and care to each student. Those fortunate enough to become his students know that he always makes time to consult on pathology cases and to offer the support and assistance that is essential to successful completion of a combined residency/PhD program. He continues to serve as an informal and vital mentor to many past students, including those who have long since left the University of Illinois.

Matt is the quintessential academic toxicologic pathologist who has managed to engage in research, teaching and service at a very high and successful level. He has built an extramurally funded research program in toxicologic pathology with a focus on nutrition and the pathology of the exocrine pancreas. His research has been published in over 95 peer-reviewed publications and book chapters. In addition, Dr. Wallig is one of the editors of the *Handbook of Toxicologic Pathology and Fundamentals of Toxicologic Pathology*. He has taught both general and diagnostic pathology to professional veterinary students, comparative and toxicologic pathology to residents and served as co-director of the Industrial Toxicologic Pathology Short Course that was co-sponsored by the STP in 2009 and 2012. The importance of these activities in generating interest among students in pursuing careers in pathology and toxicologic pathology, cannot be overstated.

Matt has been an STP member since 1993. He serves on the 2013 Nominations Committee, a position he also held in 1996. He has served on numerous ACVP committees including as member or chair of the Training Coordinators Committee from 2000–2011.

For his significant role and remarkable dedication to advancing toxicologic pathology education, Dr. Matthew Wallig is the first recipient of the STP Outstanding Mentor Award.

Awards

Society of Toxicologic Pathology

Portland, Oregon

Toxicologic Pathology 2012 Best Paper Award

Phospholipidosis in Rats Treated with Amiodarone: Serum Biochemistry and Whole Genome Micro-Array Analysis Supporting the Lipid Traffic Jam Hypothesis and the Subsequent Rise of the Biomarker BMP
Toxicol Pathol, April 2012; vol. 40 , 3: pp. 491–503.

Natalie Mesens[1], Miek Desmidt[1], Geert R. Verheyen[1], Sofie Starckx, Siegrid Damsch, Ronald De Vries[1], Marc Verhemeldonck[1], Jacques Van Gompel[1], Ann Lampo[1], and Lieve Lammens[1]

[1] Genetic and Exploratory Toxicology, Drug Safety Sciences, Janssen Pharmaceutical Companies of Johnson&Johnson, Beerse, Belgium

Society of Toxicologic Pathology Student Travel Awards

Sachin Bhusari
National Toxicology Program, NIEHS

Michael C. Boyle
North Carolina State University

Vinicius Carreira
University of Cincinnati

Abigail Durkes
Purdue University Graduate School

Shubham Goyal
Baddi University of Emerging Sciences and Technology

Ramesh C. Kovi
College of Veterinary Medicine, University of Minnesota

Rommel Max Tan
University of Illinois

Sunish Mohanan
Cornell University, Biomedical Sciences

Chee Bing Ong
Michigan State University

Viviane M. Pascotto
São Paulo State University

Venus Welch-White
Tuskegee University

Artem Shkumatov
University of Illinois at Urbana—Champaign

Society of Toxicologic Pathology Student Poster Award

Lisa Berman-Booty, VMD, DACVP
The Ohio State University

We would like to congratulate Lisa Berman-Booty, VMD, DACVP, The Ohio State University, Columbus, Ohio, for winning the 2013 ACVP/STP Student Poster Award, for her poster entitled "OSU-CG5 Modulates Prostate Cancer Cell Metabolism and Suppresses Xenograft Tumor Growth Without Evidence of Systemic Toxicity."

The Seventh Annual STP Student Poster Award competition occurred at the concurrent meetings of the ACVP and ASVCP held in Seattle, Washington, December 1–5, 2012, at the Washington State Trade and Convention Center. The poster presentations were evaluated by a panel of judges composed of members of the Society of Toxicology Pathology and American College of Veterinary Pathology.

IATP Charles Capen Trainee Award

Famke Aeffner
The Ohio State University

Society of Toxicologic Pathology Young Investigator Awards

(See pages 10 or 25 for judging times.)

Winners will be announced at the Awards Ceremony at 5:30 pm on Wednesday, June 19, in the Oregon Ballroom at the Convention Center.

Society of Toxicologic Pathology

*SPECIAL MEMBERSHIP OFFER: Nonmember registrants who apply for membership prior to **July 1** and who are accepted, will receive complimentary Membership for the rest of 2013 and the journal issues for the remainder of the year.*

What Are the Benefits of STP Membership?

STP Journal

STP Full and Associate members receive regular and supplemental issues of *Toxicologic Pathology*, the premier, peer-reviewed journal in the field of toxicologic pathology. The journal focuses on the multidisciplinary elements that constitute toxicologic pathology, including spontaneous and experimentally induced morphological and functional changes, environmental exposures, case reports, and risk assessment and investigative techniques. *Toxicologic Pathology* publishes original articles, symposia papers, brief communications, current topic reviews, current issues, and fast-track articles.

Scientific Collaboration

The Society provides opportunities for formal and informal exchange of information among colleagues in toxicologic pathology and related fields through its annual symposium, committees, working groups and other activities. The Scientific and Regulatory Policy Committee identifies common and emerging toxicologic pathology issues within the drug, chemical, and device industry world-wide and takes a leadership role in addressing those issues to help better promote appropriate industry practices and regulatory policy.

Member Website and ToxPathNet

ToxPathNet, a professional network that features an enhanced member directory and online collaboration tools, was recently launched along with a redesigned STP website for members. Access to the member website at **www.toxpath.org** allows members to view Webinars, draft position papers, the latest *Scope* Newsletter, and information on current issues. Members can vote for office, volunteer to serve on a committee, update their membership information, and handle most Society business online.

Continuing Education, Regional Meetings, Webinars

One of the main goals of STP is to provide opportunities for members to keep current in a rapidly changing world. The annual meeting offers three full days of scientific sessions as well as optional premeeting Continuing Education courses on current topics and free career development sessions. STP regional meetings, sometimes held in collaborations with allied nonprofit educational organizations, are low-cost opportunities to gain high-quality Continuing Education on topics that emphasize local interests and expertise. STP members have access to live Webinars and also past presentations that are posted on the members section of the STP website.

Scope Newsletter

Scope is a quarterly online newsletter that gives details of upcoming meetings and events, news of committee and working group activities, and member interviews.

Special Interest Groups (SIGs)

STP supports Special Interest Groups (SIGs) composed of STP members that specifically enhance networking and scientific exchanges relevant to the mission and strategic plan of the Society. SIGs provide a forum for the quick exchange of novel ideas and developments, which could lead to publications, continuing education (CE) courses, symposium sessions, or regional meetings. The Cardiovascular Toxicologic Pathology Special Interest Group (CVIG), Clinical Pathology Special Interest Group (CPIG), Environmental Toxicologic Pathology Special Interest Group, Special Interest Group in Neuropathology (SIGN), and Reproductive Pathology Special Interest Group meet each year at the annual symposium and communicate throughout the year using ToxPathNet and teleconferences. Information about each group is available under the Members menu on the STP website. There is no fee to join.

Student Resources

Student Members receive online access to *Toxicologic Pathology*. They also have access to the member section of the STP website and ToxPathNet. Students may participate in STP webinars and receive free registration for the annual symposium. They have access to career resources and student travel award information. Students also receive access to *PATHWAYS*, a joint newsletter of STP and ACVP for students of veterinary pathology. Students are encouraged to volunteer to participate on STP committees.

Fast and Easy Online Membership Application

To learn more about STP activities visit **www.toxpath.org**. To apply online, select Membership Application from the navigation bar. Students are invited to apply for Student membership.

www.toxpath.org

Meeting Events

Saturday Evening Sponsored Reception
Saturday, June 15, 7:00 PM–10:00 PM

DoubleTree Hotel—Multnomah Ballroom

All attendees and their guest/spouse are invited. See page 36 for details.

5th ACVP/STP Coalition Scientific Conference
Saturday, June 15, 1:00 PM–5:00 PM

*Complimentary Session, Advance Registration Required**

The Coalition for Veterinary Pathology Fellows is a joint educational effort between the American College of Veterinary Pathologists (ACVP) and the Society of Toxicologic Pathology (STP) to establish new training positions for veterinary pathologists at North American universities. The Coalition will hold its 5th Scientific Conference during the 2013 STP Annual Symposium. This half-day Conference will focus on the progress of Coalition Fellows and will include platform presentations by six currently enrolled Fellows, featuring case reports, diagnostic investigations and results of PhD dissertation research. In addition, representatives of academia and industry will give a joint presentation entitled "Current and Future Trends in Jobs for Veterinary Pathologists" which will be of interest to trainees as well as to other individuals considering a job change. There is no additional charge to attend, but you must register by checking the Coalition Conference option on the STP Registration Form or at the Registration Desk.

Welcome Reception
Sunday, June 16, 5:30 PM–7:00 PM

CC—Exhibit Hall A

The STP Welcome Reception will kick off the week in the Exhibit Hall for all registered meeting attendees. Please wear your badge and bring your Welcome Reception ticket that was provided with your badge. Hors d'oeuvres will be provided and drink tickets (one alcoholic and one soda) will be distributed at the door. Tickets for guests 18 years of age or older* accompanying a registered attendee may be purchased for $30 at the registration desk.

**To ensure their safety, children under the age of 18 are not permitted in the Exhibit Hall.*

Guest/Spouse Tours
Monday, June 17, 9:00 AM

If you registered for a STP guest/spouse tour, please meet at 8:45 am in main lobby of the DoubleTree Hotel.

Lunch in the Exhibit Hall
Monday, June 17, 12:00 Noon–1:30 PM

CC—Exhibit Hall A

Lunch sponsored by the exhibitors for all scientific attendees.

Town Hall Meeting

Thresholds in Toxicologic Pathology
Monday, June 17, 5:30 PM–6:30 PM

CC—Oregon Ballroom

Communication of complex issues on an ever-expanding worldwide scale requires consistency in order to achieve understanding. Toxicologic pathologists have been expending, and continue to expend an enormous amount of resources, personal effort, and energy to achieve this type of consistency in our diagnostic terminology through International Harmonization of Nomenclature and Diagnostic Criteria for Lesions in Rats and Mice (INHAND) and other efforts. Thresholding is another aspect of diagnostic consistency. Inconsistent application of thresholds can lead to confusion, incomplete and inaccurate reporting of study findings, and incomplete and inaccurate historical control data. Inconsistent terminology and inconsistent thresholds, singly or in concert, will preclude accurate comparison of study results and/or historical control. An expert panel of toxicologic pathologists from various aspects of our society will present the definition of thresholding, and differing perspectives on how, when and why thresholding is used. Thresholding impacts how we report our often complex data sets and can strongly affect the ability of nonpathologists to understand our reports. The audience is asked to actively participate in these discussions, and present their perspectives and concerns with the use, or lack of use, of thresholds, and recommendations for how best consistency in thresholding can be achieved. The objective of this meeting is to openly discuss and debate the topic of thresholding but not to come to a "best practice" conclusion on how and when thresholds should be applied.

Monday Sponsored Reception
Monday, June 17, 7:00 PM–10:00 PM

DoubleTree Hotel—Cascade Ballroom

All attendees and their guest/spouse are invited. See page 36 for details.

Student Outing
Tuesday, June 18, 12:30 PM

The STP student outing will be a Portland Scavenger Hunt by Run Brain Run. This will be a fun opportunity to meet fellow students, and interact with mentors. This function has been the highlight of past meetings for many students. Details were emailed to student registrants.

Awards Ceremony
Wednesday, June 19, 5:30 PM–5:50 PM

CC—Oregon Ballroom

STP Award recipients will be recognized at this time.

General Information

Oregon Convention Center
June 16–20, 2013

Annual Business Meeting

Wednesday, June 19, 5:50 PM–6:30 PM

CC—Oregon Ballroom

The STP Annual Business Meeting will be held immediately following the Awards Ceremony.

President's Reception

Wednesday, June 19, 7:00 PM–9:00 PM

DoubleTree Hotel—Lloyd Center Ballroom

One ticket to this event is provided to all meeting registrants. Additional tickets can be purchased on-site for $65 (Children of attendees 11–17 yrs $35). Attendees with children under 11 years of age are permitted to attend the President's Reception at no charge as long as the child is under the supervision of the parent at all times.

Registration

CC—Prefunction Lobby A

Friday, June 14	4:00 PM–6:00 PM
Saturday, June 15	8:00 AM–6:00 PM
Sunday, June 16	7:00 AM–6:00 PM
Monday, June 17	7:00 AM–5:30 PM
Tuesday, June 18	7:30 AM–12:00 Noon
Wednesday, June 19	7:30 AM–5:30 PM
Thursday, June 20	7:30 AM–12:00 Noon

Registration Materials

Badges, *Program*, event tickets, free transportation tickets, and ribbons (if appropriate), will be available for pickup at the Registration Desk (see registration hours above). Attendees are encouraged to bring a bag or backpack as meeting bags will not be provided.

Meeting Materials

Meeting publications, handouts, attendee list, committee and ancillary meetings schedule, and evaluation forms will be posted on the Annual Meeting "Meeting Materials" page when available.

STP members will use their regular login to access this page. Nonmember attendees will receive login and password to access the site.

Scan this code for quick and easy access to up-to-date Annual Meeting information.

Symposium Registration

Member, nonmember, and Student full meeting registration fee include the symposium proceedings, access to scientific sessions, Exhibit Hall, daily continental breakfast, morning and afternoon breaks during the scientific sessions, Monday lunch in the Exhibit Hall, and admission for one to the Welcome Reception and President's Reception.

Exhibitor Registration

Complimentary: Two full meeting registrations are provided to exhibiting companies with the purchase of each booth. The Exhibitor registration fee includes admission to the scientific sessions, Exhibit Hall access, daily continental breakfast, morning and afternoon breaks, Monday lunch held in the Exhibit Hall, and admission for one to the Welcome Reception and President's Reception.

Reduced Registration: The Exhibitor registration fee ($380) is for companies with more than two exhibitors. This reduced registration does not include admission to the scientific sessions, but does include continental breakfasts, breaks in the Exhibit Hall, and one admission to the Welcome Reception and President's Reception.

Guest/Spouse Registration

The Guest/Spouse registration fee includes daily continental breakfast in the STP Guest/Spouse Hospitality Suite (Hamilton Room, 1st Level) at the DoubleTree Hotel Portland, afternoon breaks, one admission to the Welcome Reception, the President's Reception, and a Monday morning half-day tour.

One-Day Registration

One-Day Registration is offered Monday through Thursday and includes Scientific Session(s), continental breakfast and break(s), Exhibit Hall access (Monday–Wednesday). The Monday fee includes lunch in the Exhibit Hall; Wednesday includes one ticket for the President's Reception.

SPECIAL MEMBERSHIP OFFER: Nonmembers who apply for membership prior to July 1 and who are accepted will receive complimentary membership for the remainder of 2013 and the journal issues for the remainder of the year. Please visit **www.toxpath.org** to apply for membership.

Speaker Ready Room

CC—Meeting Room A104

Friday, June 14	4:00 PM–6:00 PM
Saturday, June 15	8:00 AM–5:00 PM
Sunday, June 16	7:00 AM–5:00 PM
Monday, June 17	7:00 AM–5:00 PM
Tuesday, June 18	7:00 AM–12:00 Noon
Wednesday, June 19	7:00 AM–5:00 PM
Thursday, June 20	7:00 AM–11:00 AM

Headquarters Hotel

DoubleTree Hotel Portland
1000 NE Multnomah Street
Portland, Oregon 97232
Phone: 503-281-6111

Guest/Spouse Hospitality Suite

DoubleTree Hotel—Hamilton Room

The Guest/Spouse registration fee includes continental breakfast (Monday through Thursday) in the STP Guest/Spouse Hospitality Suite at the DoubleTree Hotel Portland.

Monday, June 17 ..... 8:00 AM–5:00 PM
Tuesday, June 18 ..... 8:00 AM–12:00 Noon
Wednesday, June 19 ..... 8:00 AM–5:00 PM
Thursday, June 20 ..... 8:00 AM–12:00 Noon

Poster Information

CC—Exhibit Hall A

The poster board size is 4 x 8 Feet (horizontal) and requires the use of pushpins to hold it in place.

Poster setup and teardown times are as follows:

Poster Setup
Sunday, June 16 ..... 8:00 AM–3:00 PM

Your poster must be set up by 3:00 pm on Sunday, June 16.

Poster Teardown
Wednesday, June 19 ..... 11:30 AM–1:00 PM

If your poster is not removed before 1:00 pm on Wednesday, June 19 it will be removed and placed near the Registration Desk for pick up.

Poster Presentation Times

Please plan to attend your posters during the following times:

Sunday, June 16 (Optional) ..... 5:30 PM–7:00 PM
Monday, June 17 ..... 10:00 AM–10:30 AM
..... and 3:05 PM–3:35 PM
Tuesday, June 18 ..... 9:55 AM–10:25 AM
Wednesday, June 19 ..... 10:10 AM–10:30 AM

Young Investigator Judging Times

Monday, June 17 ..... 7:15 AM–8:00 AM
..... 10:00 AM–10:30 AM
..... and 3:05 PM–3:35 PM
Tuesday, June 18 ..... 9:55 AM–10:25 AM

Exhibit Hall

CC—Exhibit Hall A

The Exhibit Hall will be a center of activity during this year's Symposium, kicking off with a Welcome Reception in the Exhibit Hall on Sunday evening, June 16.

An exhibitor sponsored buffet luncheon in the Exhibit Hall will be offered for all registered attendees on Monday, June 17 and continental breakfasts and refreshment breaks will be held in the hall throughout the week. The popular Internet Café, where attendees can check email during exhibit hours, will be provided again this year during regular exhibit hours. Scientific poster sessions will also be held Sunday evening through Wednesday in the Exhibit Hall.

The Microscope and Digital Slide Viewing Area will also return to the Exhibit Hall this year. This is a great opportunity for attendees to meet and discuss slides.

The Society values the support of exhibitors and believes the relationship between exhibiting companies and the STP membership is a mutually beneficial one. Don't forget to visit the Exhibit Hall often in CC—Exhibit Hall A.

Exhibit Hall Policies

Out of courtesy for the scientific presenters and exhibitors, we appreciate your compliance with the following polices:

Photography Policy

- Photography of poster presentations is prohibited without the specific consent of the presenter(s)/author(s).
- Photography of exhibitor booths and/or equipment is prohibited without the specific consent of the exhibitor.

Children Under 18 Years of Age

- To ensure their safety, children under the age of 18 are not permitted in the Exhibit Hall at any time including during the Exhibits Opening, regular hours, Welcome Reception, and Poster Sessions.

Exhibitor Setup

Saturday, June 15 ..... 1:00 PM–4:00 PM
Sunday, June 16 ..... 8:00 AM–3:00 PM
..... All exhibits must be set up by 3:00 PM

Exhibit Hall Hours

Sunday, June 16 (Welcome Reception) ... 5:30 PM–7:00 PM
Monday, June 17 ..... 7:00 AM–4:30 PM
Tuesday, June 18 ..... 7:00 AM–12:00 PM
Wednesday, June 19 ..... 7:00 AM–11:30 AM

Exhibitor Teardown

Wednesday, June 19 ..... 11:30 AM–3:00 PM

Internet Café
Be sure to take advantage of the computers in STP's Exhibit Hall! The Internet Café will be available during Exhibit Hall hours so that you can check email.

General Information

Oregon Convention Center
June 16–20, 2013

WiFi Options at the Convention Center

Complimentary WiFi
Network name (SSID) "OCC Comp WiFi Zone."
Please see map on page 12 for locations.

Facility-Wide WiFi Coverage Plans

There are three available shared WiFi Internet access plans for individual purchase.

Basic	Basic Plus	Premium
$12.95 a day per device	$39.95 for 5 days per device	$89.95 a day per device
2Mbps/2Mbps*	2Mbps/2Mbps*	4Mbps/4Mbps*

**Up to speed*

To sign up, users connect to the "OCC WiFi" wireless network (SSID)—available facility wide. Once connected, they open a web browser, choose from the three plans, and click the 'Buy Now' button to begin the purchasing process.

Microscope and Digital Slide Viewing Area

CC—Exhibit Hall A

Please bring any slides you would like to discuss with colleagues during exhibit hours.

Thank you to Leica Biosystems for providing the equipment.

Exhibit Hall ToxPath Trail

STP will host a scavenger hunt, the ToxPath Trail, within the Exhibit Hall during the 2013 STP Annual Symposium in Portland.

STP encourages all attendees to visit each of our 2013 STP Exhibitors to answer clues about their company or products. These clues will lead to fun prizes!

This year exhibitors will provide clues about their company or products that can be learned at their booth or on their booth display. Each attendee will receive a list containing all of the participating exhibitor clues at registration. Attendees will visit the booths to identify the correct clue that describes that company and get their map stamped. Exhibitors will indicate on attendees' maps that they have visited their booth and answered their company clue, with the goal of attendees to visit all of the STP exhibiting booths.

Attendees will be able to visit all STP Exhibitors from Sunday, June 15th starting at 5:30 pm at the Welcome Reception until Wednesday, June 19 at 11:00 am. Completed maps can be turned in at the registration desk for prize drawings, which will take place at the President's Reception on Wednesday evening. Attendees must be present to win.

Safety and Security Tips

1. When inside the conference venue, nametags should be worn and visibly displayed at all times. For security reasons, we recommend that you DO NOT wear your badge outside of the conference venue. If you lose your badge, please notify registration immediately.
2. Walk in well-lighted areas at night and never alone.
3. Please do not leave any bags or articles unsecured in any display area, meeting room, or public area. Laptops and other small computers are easy targets for thieves. If you note any suspicious article, packages, persons, or activity please contact the event staff or security immediately.
4. Due to the nature of our meeting, there is a risk that we may be the target of protest activity. STP has a response plan to address this possibility. Here are some guidelines to deal with protest activity:
   a. If you see a protest forming or in progress, you should notify STP or venue staff immediately. We will implement our response plan to ensure our meeting is safe and secure.
   b. Do not attempt to engage or argue with protestors. These groups seek confrontation as a tool for publicity.
   c. Do not give interviews to press personnel. STP representatives will respond to the press.
   d. If you notice any suspicious individuals in the meeting areas or hotel, especially handing out literature, please notify STP security or venue security personnel. You should not attempt to engage these persons or stop them yourself
   e. If there is a disruption in a meeting room, you should remain calm. Notify security and allow them to deal with the disruption.
5. Do not give your lodging information to any person outside of known STP staff.
6. Photography is not permitted in the Exhibit Hall. This includes digital pictures taken using cell phone cameras.
7. Large packages and bags are not permitted in the Exhibit Hall area.

Oregon Convention Center

Ballroom Level (Street Level)

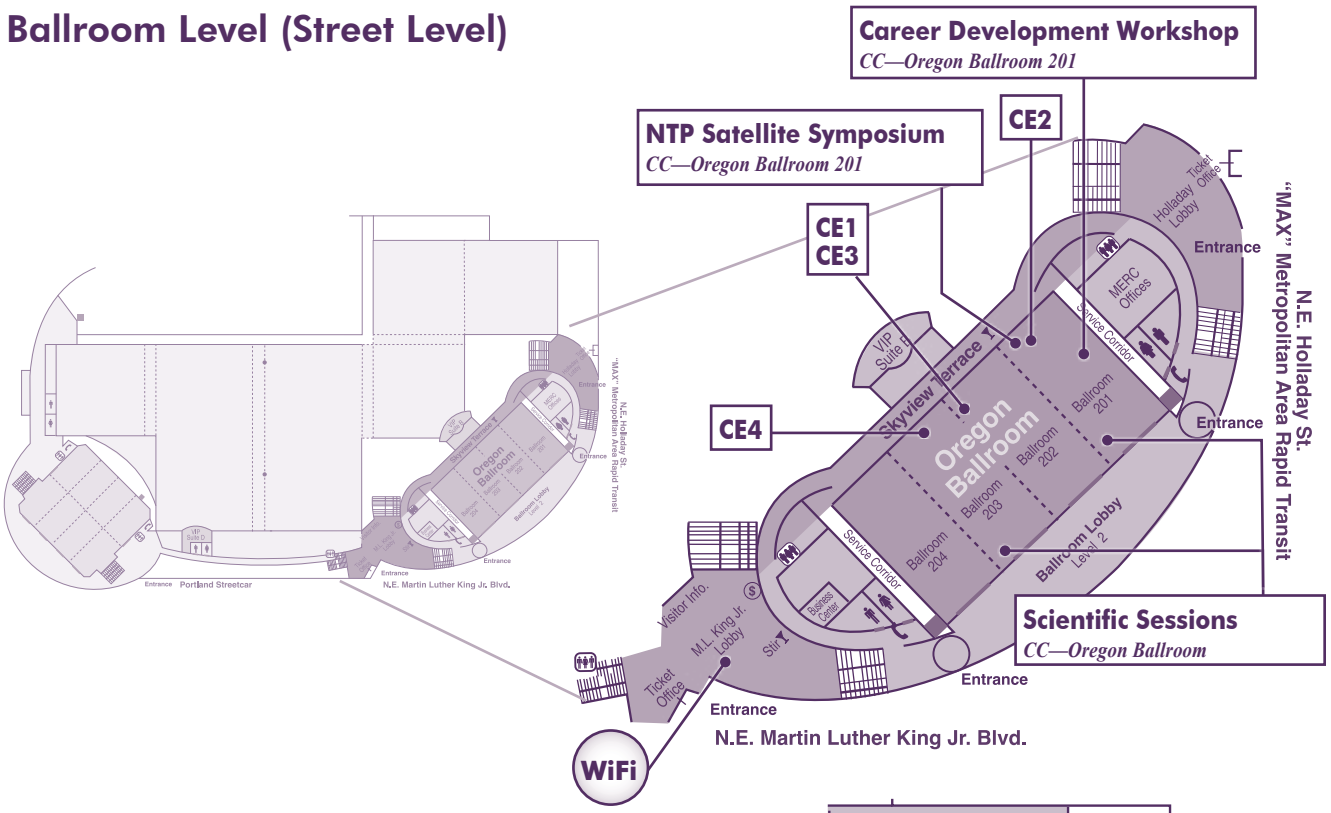
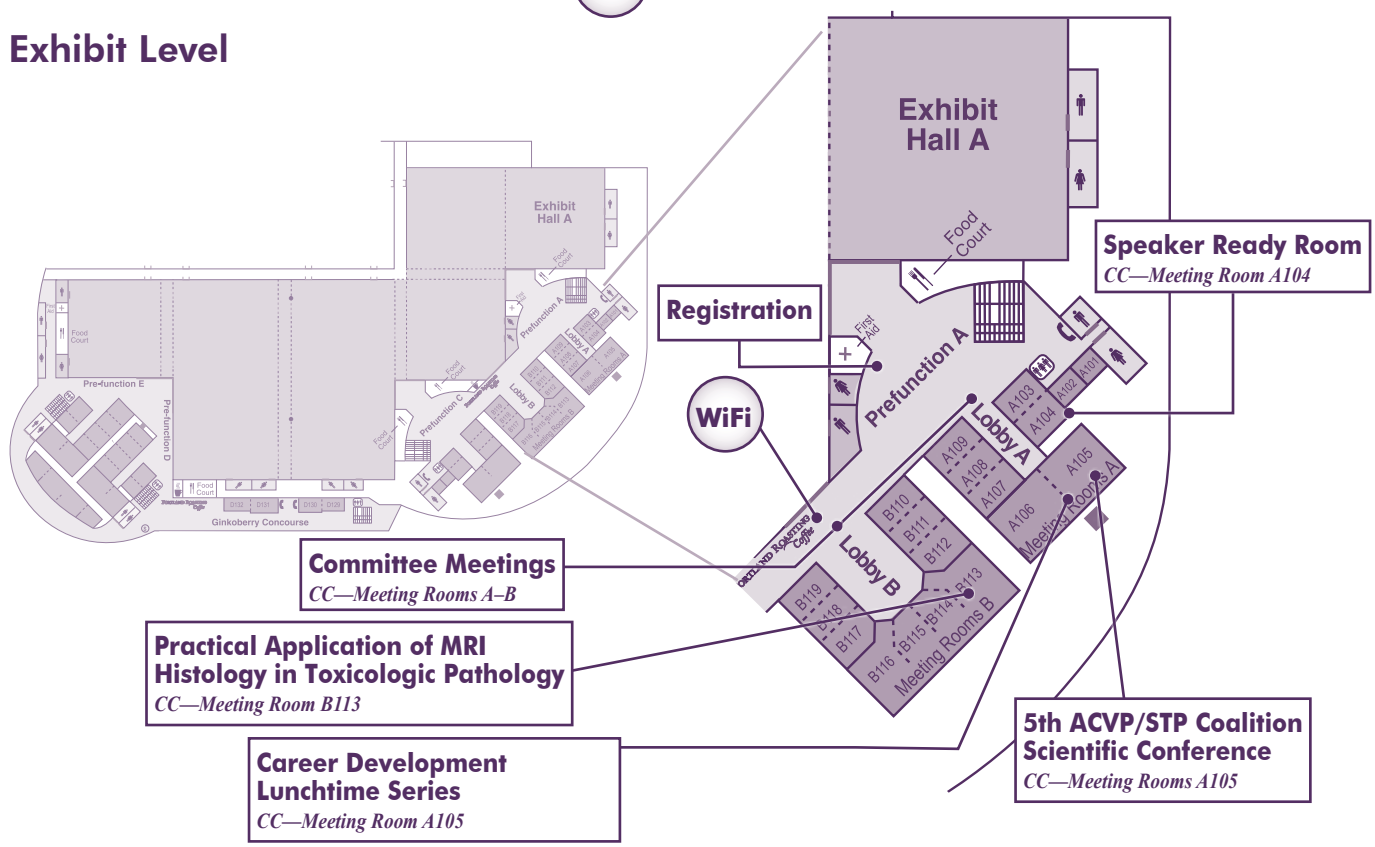


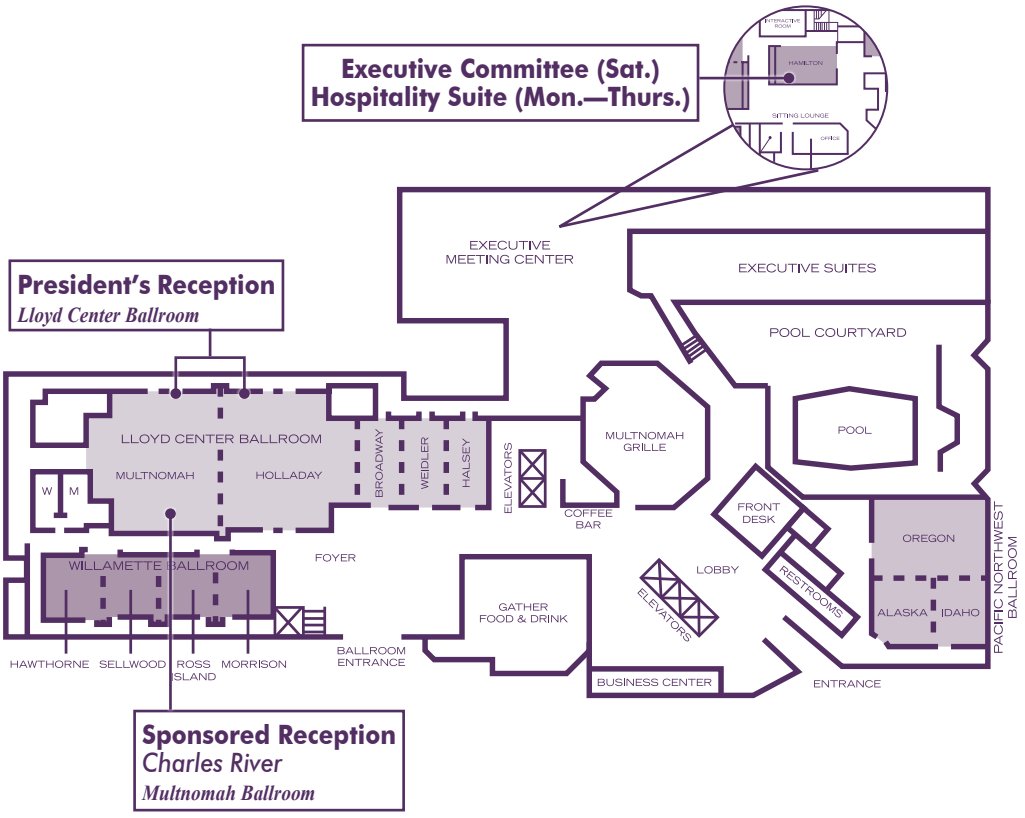
Exhibit Level



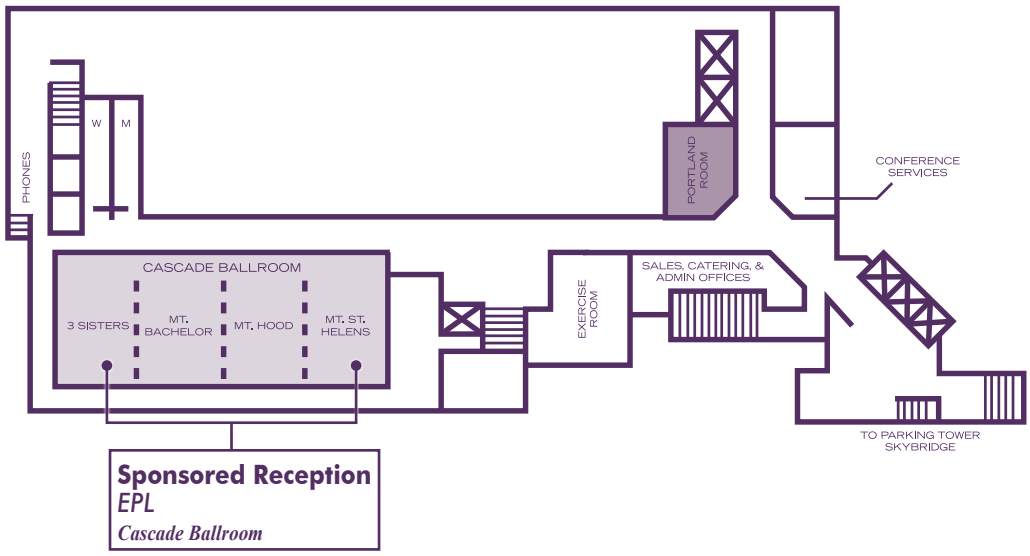
Events at the Oregon Convention Center are noted as CC.

DoubleTree Hotel Portland

1st Level



2nd Level



Saturday, June 15

NTP Satellite Symposium: Pathology Potpourri

CC—Oregon Ballroom 201

9:00 AM–4:30 PM
(Free Event, registration required)

Chair: **Susan A. Elmore, MS, DVM, DACVP, DABT, FIATP,** *National Toxicology Program, National Institute of Environmental Health Sciences, Research Triangle Park, NC*

The object of this interactive symposium is to provide continuing education on interpreting pathology slides, to generate lively and productive conversation, and to have a good time. During each talk, the speakers will project a series of images of lesions on one screen with a choice of diagnoses/answers on a separate screen. The members of the audience with wireless keypads will then vote and the voting results will be displayed on the screen. After each voting session, time is allowed for discussion.

9:00 AM–9:10 AM	**Welcome and Introductory Remarks** *Susan A. Elmore, MS, DVM, DACVP, DABT, FIATP, National Toxicology Program, National Institute of Environmental Health Sciences, Research Triangle Park, NC*
9:10 AM–9:30 AM	**An Unusual Bone Lesion in Mice** *Margarita M. Gruebbel, DVM, PhD, DACVP, EPL, Inc., Research Triangle Park, NC*
9:30 AM–10:00 AM	**Interstitial Infiltrates of the Rat Kidney** *Cynthia C. Shackelford, DVM, MS, PhD, EPL, Research Triangle Park, NC*
10:00 AM–10:30 AM	**Interesting Background Lesions in Hamsters** *Elizabeth McInnes, BVSc, PhD, FRCPath, MRCVS, FIATP, Gribbles Healthscope, South Australia, Australia*
10:30 AM–11:00 AM	**Break**
11:00 AM–11:30 AM	**Lung Lesions in Control Rats from Gavage Studies** *Torrie Crabbs, DVM, DACVP, EPL, Inc., Research Triangle Park, NC*
11:30 AM–12:00 Noon	**Top Shelf Quandaries** *David E. Malarkey, DVM, PhD, DACVP, FIATP, National Toxicology Program, National Institute of Environmental Health Sciences, Research Triangle Park, NC*
12:00 Noon–1:30 PM	**Lunch**
1:30 PM–1:50 PM	**Electronmicroscopy Brain Teasers** *Connie Cummings, DVM, PhD, EPL, Inc., Research Triangle Park, NC*
1:50 PM–2:10 PM	**Cell Death: Always a Diagnostic Challenge** *Susan A. Elmore, MS, DVM, DACVP, DABT, FIATP, National Toxicology Program, National Institute of Environmental Health Sciences, Research Triangle Park, NC*
2:10 PM–2:30 PM	**Challenging Proliferative Uterine Lesions in the Rat** *Molly H. Boyle, DVM, MPH, DACVP, Integrated Laboratory Systems, Inc., Research Triangle Park, NC*
2:30 PM–3:00 PM	**Challenging Rat Uterine Neoplasms** *Crystal Johnson, DVM, DACVP, Charles River Laboratories, PAI, Research Triangle Park, NC*
3:00 PM–3:30 PM	**Break**
3:30 PM–4:00 PM	**Lesions from the Gastrointestinal INHAND Organ Working Group** *Thomas Nolte, DVM, MSc, FIATP, Boehringer Ingelheim Pharma GmbH & Co. KG, Biberach an der Riss, Germany*
4:00 PM–4:30 PM	**Foreign Material in Rat Kidney** *Jerrold M. Ward, DVM, PhD, DACVP, FIATP, Global Vet Pathology, Montgomery Village, MD*
7:00 PM—10:00 PM	**Sponsored Reception** *DoubleTree Hotel – Multnomah Ballroom*

Sunday, June 16

Continuing Education Courses

CE 1 (Sunday AM) 8:00 AM–12:00 Noon

CC—Oregon Ballroom 202

Role of the Pathologist in GLP Studies

Co-Chairs: **Kathleen A. Funk, DVM, PhD, DACVP,** *EPL Inc., Sterling, VA, and* **Klaus Weber, PhD, DVM, MSBiol,** *AnaPath GmbH, Itingen, Switzerland*

There are many roles that toxicologic pathologists serve in regard to toxicology and carcinogenicity studies. This session will provide a summary of the many different tasks performed by pathologists throughout differing stages of evaluations, describe expectations of each phase of pathology review, and explore their relationships with the Study Director, Sponsor, and other pathologists. Also to be discussed is the issue of what constitutes study raw data and what is to be included in the toxicology report. The roles of the Study Pathologist, Peer Review Pathologists, Pathology Working Group Chairperson and participants of Pathology Working Groups (PWGs) or Scientific Advisory Panels (SAPs) will be detailed along with the applicable GLP regulations and best practices for pathology evaluations.

8:00 AM–8:05 AM	**Introduction**
8:05 AM–9:00 AM	**Role of Toxicologic Pathologist** *Klaus Weber, PhD, DVM, MSBiol, AnaPath GmbH, Itingen, Switzerland*
9:00 AM–9:55 AM	**Role of the Peer Review Pathologist** *Rick Hailey, DVM, DACVP, GlaxoSmithKline, Research Triangle Park, NC*
9:55 AM–10:15 AM	**Break**
10:15 AM–11:05 AM	**Pathology Working Groups (PWG): Definition, Application in Toxicity and Carcinogenicity Studies, and Examples** *Peter C. Mann, DVM, DACVP, EPL NorthWest, Seattle, WA*
11:05 AM–12:00 Noon	**A Regulator's Perspective on the Process*** *Mark Seaton, PhD, US FDA/CDER, Silver Spring, MD* **This presentation will be broadcast to the meeting room via WebEx.*

Career Development Workshop

Sunday, June 16
8:00 AM–12:00 Noon
CC—Oregon Ballroom 201

Environmental Toxicologic Pathology

(Free Event, registration required)

Co-Chairs: **Keith Nelson, DVM, PhD, DACVP,** *MPI Research, Mattawan, MI, and* **Olga Pulido, MD, MSc, ABPath, FIATP,** *Health Canada, Ontario, Canada*

The 2013 Career Development Workshop will feature speakers on a wide range of topics in environmental toxicologic pathology and will conclude with a roundtable discussion involving all of the speakers.

8:00 AM–8:05 AM	**Introduction**
8:05 AM–9:35 AM	**Exploring the Great Unknown: Alternative Animal Species in Environmental Toxicologic Pathology** *Jeff Wolf, DVM, PhD, DACVP, EPL, Inc., Sterling, VA*

Although often classified as "alternative" when compared to traditional mammalian test subjects, lower vertebrates such as fish, frogs, and fowl are the bread and butter of environmental toxicology research. Not only are they representative of many at-risk species, the aquatic members of these taxa are particularly vulnerable to toxicological insults, due to the ubiquitous presence of contaminants in many surface waters, and multiple potential routes for near continuous exposure including dermal, respiratory, and dietary. This presentation will first attempt to describe some basic characteristics of environmental toxicology studies from the viewpoint of the pathologist, including salient differences between field and laboratory studies. This will be followed by discussions on the uses, advantages, and disadvantages of the various alternative animal groups, and finally, by further diagnostic considerations for contract pathologists who endeavor to evaluate these types of studies.

9:35 AM–10:20 AM	**Laid to Waste: Secondary Poisoning in Wildlife with a Forensic Approach** *Tabitha Viner, DVM, DACVP, USFWS Forensic Pathology Laboratory, Ashland, OR*

Wild birds and mammals are occasionally victim to unintentional toxicosis through means humans use to control their environment. Forensic techniques can be

used to explore secondary poisoning by rodenticides, heavy metals, and other discarded items in order to help law enforcement personnel pursue legal cases. This talk will explore the pathologic changes commonly seen in primary and secondary toxicoses from a forensic perspective.

10:20 AM–10:50 AM **Break**

10:50 AM–11:35 AM **Regulatory Perspective on Environmental Toxicologic Pathology**
Charles Wood, DVM, PhD, DACVP, US EPA, Research Triangle Park, NC

Topics will include use of pathology in chemical safety studies, carcinogen risk assessment, and predictive modeling efforts for environmental toxicants.

11:35 AM–12:00 Noon **Roundtable Q&A and Discussion of Careers in Environmental Toxicologic Pathology**

CE 2 (Sunday PM) 1:30 PM–5:25 PM

CC—Oregon Ballroom 201

Inflammatory Biomarkers—Sponsored by the STP Clinical Pathology Special Interest Group (CPIG)

Co-Chairs: **Lila Ramaiah, DVM, PhD, DACVP,** *Huntingdon Life Sciences, Princeton, NJ, and* **William Reagan, DVM, PhD, DACVP,** *Pfizer, Groton, CT*

Drug-induced toxicity to the immune and inflammatory systems encompasses a wide variety of adverse effects, ranging from exaggerated pharmacology (intended immunomodulation), to immunotoxicity (unintended immunosuppression or immune stimulation), drug-induced hypersensitivity and autoimmunity. Inflammatory biomarkers are valuable tools for the identification, characterization and monitoring of effects. Inflammatory biomarkers, often themselves mediators of inflammatory and immune responses, include cytokines, acute phase proteins, complement, and hemostatic proteins. This session explores the current use of inflammatory biomarkers in preclinical safety assessment. Topics encompass the evaluation of acute phase proteins, cytokines and complement in rodent and large animal models of inflammation. Emphasis is on relevance, utility, application, and use of inflammatory biomarkers, as well as on their translatability and predictivity from *in vitro* to *in vivo* models and from nonclinical to clinical settings. Factors that influence study design and biomarker selection, including preanalytical and analytical considerations, technologies and platforms, and species differences will be discussed. The session also includes short case studies with opportunity for open discussion with audience members.

1:30 PM–1:40 PM **Introduction**
Lila Ramaiah, DVM, PhD, DACVP, Huntingdon Life Sciences, Princeton, NJ

1:40 PM–2:30 PM **The Challenges for Preclinical to Clinical Translation of the Systemic Inflammatory Response Syndrome**
Calvert Louden, DVM, PhD, DACVP, Johnson & Johnson Pharmaceuticals, Raritan, NJ

2:30 PM–2:45 PM **Case Studies: Acute Phase Proteins**
Niraj K. Tripathi, BVSc, MVSc, PhD, DACVP, Covance Laboratories, Inc., Madison, WI

2:45 PM–3:35 PM **Considerations for the Use of Cytokines As Safety Biomarkers *In Vivo***
Jacqueline Tarrant, BVSc, PhD, DACVP, Genentech, San Francisco, CA

3:35 PM–3:50 PM **Detection of Circulating Cytokines in Cynomolgus Macaques with Multiplex Array (Luminex) Technology: A Case Study Using Staphylococcal enterotoxin B (SEB) and Lipopolysaccharide (LPS)**
Madeline M. Fort, PhD, DABT, Amgen Inc., Seattle, WA

3:50 PM–4:20 PM **Break**

4:20 PM–5:10 PM **Analysis and Interpretation of Complement Activation from *In Vivo* Data**
Patricia C. Giclas, PhD, National Jewish Health, Denver, CO

5:10 PM–5:25 PM **Case Study: Increased Complement Fractions in Cynomolgus Monkeys Administered a Monoclonal Antibody**
Nancy E. Everds, DVM, DACVP, Amgen Inc., Seattle, WA

CE 3 (Sunday PM) 1:30 PM–5:25 PM

CC—Oregon Ballroom 202

Juvenile Animal Studies in Pediatric Drug Development—Sponsored by the American College of Toxicology (ACT)

Co-Chairs: **Kok Wah Hew, PhD, DABT**, *Takeda Global R&D Center Inc., Deerfield, IL, and* **LaRonda Morford, PhD**, *Covance Laboratories, Greenfield, IN*

This course will provide guidance on the current US and EU nonclinical regulatory requirements and toxicity study considerations when preparing for pediatric clinical trials, as well as the timing of juvenile toxicity studies. Regulatory presentations will include current pediatric regulations in US and EU as well as Paediatric Investigation Plan (PIP) evaluation procedures by the Nonclinical Working Group of the Paediatric Committee (PDCO) in EMA. Speakers from the industries will share their experience in designing and conducting juvenile animal studies, and scientific considerations when designing a nonclinical program to support pediatric drug development. Both small molecule and large molecule (biologics) pharmaceuticals will be discussed. The speakers will also discuss results of surveys for juvenile animal studies conducted across the pharmaceutical industry with both new chemical entities and new biological entities. The course will end with a panel discussion where speakers will address questions or comments from attendees.

1:30 PM–1:35 PM **Introduction**
Kok Wah Hew, PhD, DABT, Takeda Global R&D Center, Inc., Deerfield, IL

1:35 PM–2:15 PM **Juvenile Animal Studies in Pediatric Drug Development—US Regulatory Perspective**
Ikram Elayan, PhD, Senior Pharmacology/Toxicology Reviewer, US FDA, Silver Spring, MD

2:15 PM–2:55 PM **Juvenile Animal Studies in Pediatric Drug Development—EU Regulatory Perspective**
Jacqueline Carleer, DVM, Chair, Nonclinical Working Group of Paediatric Committee (PDCO), EMA, Brussels, Belgium

2:55 PM–3:25 PM **Break**

3:25 PM–4:05 PM **Juvenile Animal Studies for New Chemical Entities**
Graham P. Bailey, Senior Scientific Director, Janssen Pharmaceutical N.V., Beerse, Belgium

4:05 PM–4:45 PM **Juvenile Toxicity Studies with Biopharmaceuticals: Considerations and Current Practices**
LaRonda Morford, PhD, Covance Laboratories, Greenfield, IN

4:45 PM–5:25 PM **Panel Discussion**
All Speakers

CE 4 (Sunday PM) 1:30 PM–5:15 PM

CC—Oregon Ballroom 203

Immunogenicity/Hypersensitivity of Biologics

Chair: **Michael W. Leach, DVM, PhD, DACVP,** *Pfizer, Andover, MA*

Biologics are becoming more common in the pharmaceutical industry, have shown significant therapeutic benefit in many indications, and hold great promise in many other indications that are currently being studied. However, administration of biologics to animals or humans can be immunogenic, which in some cases may result in hypersensitivity reactions. These reactions can be minimal to severe, and quite variable between individuals. It can sometimes be challenging to differentiate on-target, pharmacologically-mediated effects from hypersensitivity, thus confounding study interpretation. However, such differentiation is often critical, because immunogenicity and hypersensitivity reactions in animals are generally not considered predictive of what will occur in humans, and thus associated findings are usually not considered relevant to humans (in contrast to on-target pharmacologic effects which often are relevant). This session will review different types of hypersensitivity reactions, methods of assessing immunogenicity and hypersensitivity reactions, and cover the changes that pathologists might observe in studies where these reactions are occurring.

1:30 PM–1:35 PM **Introduction**
Michael W. Leach, DVM, PhD, DACVP, Pfizer, Andover, MA

1:35 PM–2:15 PM **Hypersensitivity Reactions: A Review of Mechanisms**
James B. Rottman, DVM, PhD, DACVP, Amgen, Cambridge, MA

2:15 PM–2:50 PM	**Assessment of Antidrug Antibodies in Toxicology Studies** *M. Benjamin Hock, PhD, Amgen, Thousand Oaks, CA*
2:50 PM–3:20 PM	**Immunogenicity/ Hypersensitivity and Other Immune Endpoints in Toxicity Studies with Protein Therapeutics** *Deborah Finco, BS, MS, Pfizer, Groton, CT*
3:20 PM–3:45 PM	**Break**
3:45 PM–4:15 PM	**Specialized Techniques for Detecting Immunogenicity and Hypersensitivity Reactions in Tissues** *Jennifer L. Rojko, DVM, PhD, DACVP, Pathology Associates, Charles River Pathology, Frederick, MD*
4:15 PM–4:45 PM	**Pathology of Hypersensitivity Reactions** *Joseph Beyer, DVM, PhD, DACVP, Genentech, South San Francisco, CA*
4:45 PM–5:15 PM	**Two Case Studies in Immunogenicity: Anaphylaxis in Cynomolgus Monkeys and Immunogenicity-Related Hepatic Necrosis in Rats** *Michael W. Leach, DVM, PhD, DACVP, Pfizer, Andover, MA*
5:30 PM–7:00 PM	**STP Welcome Reception** *CC – Exhibit Hall A*

Continuing Education Credits

AAVSB RACE Provider #56

The CE Courses have been submitted and approved for three and a half to four hours of Continuing Education credits (per course) in jurisdictions which recognize AAVSB RACE approval; however participants should be aware that some boards have limitations on the number of hours accepted in certain categories and/or restrictions on certain methods of delivery of Continuing Education. The Scientific Sessions have been submitted and approved by AAVSB RACE program for 20 hours of Continuing Education credits in jurisdictions which recognize AAVSB RACE approval. The NTP Satellite Symposium has been submitted and approved by the AAVSB RACE program for five and a half hours of continuing education credits in jurisdictions which recognize AAVSB RACE approval. Certificates of attendance will be provided at the conclusion of NTP, each CE course, and on Thursday for the scientific sessions. Please contact the AAVSB RACE program if you have any comments/concerns regarding this program's validity or relevancy to the veterinary profession.

Toxicologic Pathology of the Digestive Tract and Pancreas

Scientific Co-Chairs: Dimitry M. Danilenko, DVM, PhD, DACVP, *Genentech, Inc., South San Francisco, CA,* **Mark F. Cesta, DVM, PhD, DACVP,** *National Institute of Environmental Health Sciences, Research Triangle Park, NC, and* **Prashant R. Nambiar, BVSc&AH, MS, PhD, DACVP, DABT,** *Pfizer Inc., Groton, CT*

The focus of this international meeting is to correlate advances in the morphologic evaluation and integration of findings in the digestive tract and pancreas with functional, cellular, and molecular knowledge in a series of plenary and poster sessions. The meeting will provide a venue for interactive discussion of the current state of knowledge in both conventional and specialized nonclinical safety studies of the digestive tract and pancreas. Core sessions will include Normal Digestive Tract Functional Anatomy and Physiology, Inflammatory Bowel Disease, Digestive Tract Toxicity and Risk Assessment, Digestive Tract Carcinogenesis, Biomarkers of Digestive Tract and Pancreatic Injury and Disease, and Pancreatic Toxicity and Carcinogenesis. The symposium keynote address will focus on the gut microbiome and its critical interactions with the digestive tract epithelium and the mucosal immune system during health and disease.

Individual presentations will focus on a mix of traditional and contemporary strategies for the pathophysiologic and toxicologic evaluation of the digestive tract and pancreas. The meeting will also provide a unique forum for reviewing recent progress in developing and optimizing best practices for routine and specialized toxicologic pathology evaluation of digestive tract and pancreas across academia and the pharmaceutical and chemical industries. The symposium will also feature practical case study presentations as part of two scientific sessions: the session on Digestive Tract Toxicity and Risk Assessment and the session on Pancreatic Toxicity and Carcinogenesis.

The digestive tract and pancreas are rapidly growing areas of toxicologic inquiry and regulatory concern, and this symposium promises to be a great opportunity to review and expand your knowledge in this important field.

Monday, June 17

Monday Morning

7:00 AM–8:00 AM **Continental Breakfast**
CC – Exhibit Hall A

7:00 AM–4:30 PM **Exhibits and Posters Open**
CC – Exhibit Hall A

8:00 AM–8:05 AM **Symposium Welcome**
Robert Sills, DVM, PhD, DACVP, National Toxicology Program, National Institute of Environmental Health Sciences, Research Triangle Park, NC, STP President-Elect
CC – Oregon Ballroom

8:05 AM–8:10 AM **Introduction**

8:10 AM–9:00 AM **Keynote Address: Gut Microbiota, Low-Grade Inflammation and the Metabolic Syndrome**
Andrew Gewirtz, PhD, Georgia State University, Atlanta, GA
CC – Oregon Ballroom

Session 1

9:00 AM–12:00 Noon

CC—Oregon Ballroom

Normal Digestive Tract Functional Anatomy and Physiology

Co-Chairs: **Arlin Rogers, DVM, PhD, DACVP,** *University of North Carolina at Chapel Hill, Chapel Hill, NC, and* **Piper M. Treuting, DVM, MS, DACVP,** *University of Washington, Seattle, WA*

Meaningful interpretation and translation of results from animal models of digestive disease must be rooted in an understanding of the similarities and differences of normal structure and function of the gastrointestinal tract in different species. The esophagus, stomach, and small intestine are critical sites of food transport, enzymatic digestion, and nutrient absorption. Disruption of one of these compartments often has effects on adjacent ones (i.e., acid reflux and Barrett's esophagus). An overview of the comparative morphology and physiology of each segment in small and large animals will be presented in order to provide meaningful context for the translation of experimental outcomes to human health. The role of the colon in physiology goes well beyond simple absorption of salt and water from ingesta prior to excretion from the body. The colon also has a systemic effect on energy homeostasis, lipid processing, and immune function. Because xenobiotics can alter mucosal signaling pathways, microfloral composition and immune responses, a review of the complex activities of the colon in health and disease will be presented to aid comparative pathologists engaged in drug development. Regenerative medicine is an emerging industry requiring understanding by toxicologic pathologists. The ability to regenerate tubular organs, including the digestive tract, requires an ability to distinguish tissue changes associated with regeneration from those that may be interpreted as abnormal or of a safety concern. Morphological changes associated with tubular organ (e.g. intestine) regeneration, and native-like tissue structures, will be discussed along with mechanisms of the regenerative process.

9:00 AM–9:05 AM **Introduction**

9:05 AM–10:00 AM **Comparative Anatomy, Physiology and Mechanisms of Disease Production of the Esophagus, Stomach, and Small Intestine**
Howard Gelberg, DVM, PhD, DACVP, Oregon State University, Corvallis, OR

10:00 AM–10:30 AM **Break**
CC – Exhibit Hall A

10:30 AM–11:15 AM **The Colon: From Banal to Brilliant**
Rani Sellers, DVM, PhD, DACVP, Albert Einstein College of Medicine, Bronx, NY

11:15 AM–12:00 Noon **Regenerative Medicine of the Gastrointestinal Tract**
Timothy A. Bertram, DVM, PhD, DACVP, Tengion Labs, Winston-Salem, NC

12:00 Noon–1:30 PM **Exhibitor Sponsored Lunch**
CC—Exhibit Hall A
For Registered Scientific Attendees

Director Park – Downtown Portland
Credit: Torsten Kjellstrand/www.travelportland.com

Career Development Lunchtime Series

12:30 PM–1:30 PM

CC—Meeting Room A105

Transitioning to Management

Presented by the STP Career Development and Outreach Committee
(Free Event, registration required)

Panelists and audience members will discuss transitioning from "Bench Pathology" to a career with expanded roles in management. This session will allow attendees to become more familiar with tools that have helped pathologists make a successful transition to management as well as discuss some of the challenges that come with the role.

Panelists for the Lunchtime Session include:

- **Michael W. Conner, DVM, DACVP**
  Theravance, Inc., South San Francisco, CA
- **Kevin B. Donnelly, DVM, PhD**
  Theravance, Inc., South San Francisco, CA
- **Laura Dill Morton, DVM, PhD, DACVP, DABT**
  Novartis, Cambridge, MA
- **Mark D. Rolsma, DVM, PhD, DACVP**
  Pfizer, Groton, CT

Monday Afternoon

Session 2

1:30 PM–5:00 PM

CC—Oregon Ballroom

Inflammatory Bowel Disease

Co-Chairs: **Lauri Diehl, DVM, PhD, DACVP,** *Genentech, South San Francisco, CA, and* **Brad Bolon, DVM, MS, PhD, DACVP, DABT, FATS, FIATP,** *The Ohio State University, Columbus, OH*

Inflammatory bowel disease (IBD) afflicts as many as 1 in every 200 people in Europe and as many as 1 in every 300 in North America. The underlying pathogenesis is a complex mix of genetic and environmental factors which result in the loss of tolerance to commensal gut flora and poorly-controlled mucosal inflammation. The mechanisms influencing whether or not IBD is limited to the colon (e.g., ulcerative colitis) or has a broader distribution (e.g., Crohn's disease, which can affect any part of the gastrointestinal tract) have yet to be defined. One major paradigm of growing importance to IBD is the interaction between immune cells, the mucosal epithelium, and the intestinal microbiome. This session will begin with a discussion of pathogenesis, current treatments and unmet medical needs for IBD. The next two talks will examine the innate immune system and its role in gastrointestinal health, particularly its relationship with the gut commensal organisms. The final speaker will explore animal models of IBD, emphasizing their biology and pathology as they apply to the discovery and development of new anti-IBD therapies.

1:30 PM–1:35 PM	**Introduction**
1:35 PM–2:15 PM	**Overview of IBD and Evolving T Cell-Based Therapy: An Old Player in the Current Understanding and Treatment of IBD** *Zili Zhang, MD, PhD, Case Western Reserve University, Cleveland, OH*
2:15 PM–3:05 PM	**Intestinal Fungal Communities and their Role in Inflammation** *David Underhill, PhD, Cedars Sinai, Los Angeles, CA*
3:05 PM–3:35 PM	**Break** *CC – Exhibit Hall A*
3:35 PM–4:20 PM	**Leukocyte-Epithelial Interactions and Mucosal Homeostasis** *Charles A. Parkos, MD, PhD, Emory University, Atlanta, GA*
4:20 PM–5:00 PM	**Animal Models of Inflammatory Bowel Disease: Challenges of Modeling Human Disease** *Lauri Diehl, DVM, PhD, DACVP, Genentech, South San Francisco, CA*

Portland Classical Chinese Garden – Moon Gate
Credit: Larry Geddis/Travel Portland

Town Hall Meeting
5:30 PM–6:30 PM
CC—Oregon Ballroom

Thresholds in Toxicologic Pathology

Communication of complex issues on an ever expanding worldwide scale requires consistency in order to achieve understanding. Toxicologic pathologists have been expending, and continue to expend an enormous amount of resources, personal effort, and energy to achieve this type of consistency in our diagnostic terminology through International Harmonization of Nomenclature and Diagnostic Criteria for Lesions in Rats and Mice (INHAND) and other efforts. Thresholding is another aspect of diagnostic consistency. Inconsistent application of thresholds can lead to confusion, incomplete and inaccurate reporting of study findings, and incomplete and inaccurate historical control data. Inconsistent terminology and inconsistent thresholds, singly or in concert, will preclude accurate comparison of study results and/or historical control. An expert panel of toxicologic pathologists from various aspects of our society will present the definition of thresholding, and differing perspectives on how, when and why thresholding is used. Thresholding impacts how we report our often complex data sets and can strongly affect the ability of nonpathologists to understand our reports. The audience is asked to actively participate in these discussions, and present their perspectives and concerns with the use, or lack of use, of thresholds, and recommendations for how best consistency in thresholding can be achieved. The objective of this meeting is to openly discuss and debate the topic of thresholding but not to come to a "best practice" conclusion on how and when thresholds should be applied.

Panel Participants:

Charles Wood, DVM, PhD, DACVP
US Environmental Protection Agency, Research Triangle Park, NC

Ricardo Ochoa, DVM, PhD, DACVP
Pre-Clinical Safety Inc., Niantic, CT

Glenn Elliott, DVM, PhD, DACVP
Charles River Laboratories, Reno, NV

Gerald Long, DVM, PhD, DACVP
EPL, Inc., Indianapolis, IN

Andrew Suttie, BVSc, PhD, DACVP
Covance Laboratories, Inc., Chantilly, VA

David Malarkey, DVM, PhD, DACVP
National Institute of Environmental Health Sciences, Research Triangle Park, NC

Lydia Andrews-Jones, DVM, PhD, DACVP
Allergan, Lake Forest, CA

7:00 PM–10:00 PM **Sponsored Reception**
DoubleTree Hotel – Cascade Ballroom

Tuesday, June 18

Tuesday Morning

7:00 AM–8:00 AM **Continental Breakfast**
CC – Exhibit Hall A

7:00 AM–12:00 PM **Exhibits and Posters Open**
CC – Exhibit Hall A

Session 3
8:00 AM–12:00 Noon
CC—Oregon Ballroom

Digestive Tract Toxicity and Risk Assessment

Co-Chairs: **Zaher A. Radi, DVM, MBA, PhD, DABT, DACVP,** *Pfizer Worldwide R&D, Cambridge, MA, and* **Mehrdad Ameri, DVM, MS, PhD, DACVP,** *Amgen, Thousand Oaks, CA*

Drug toxicity is one of the major causes of costly late-stage development failures and market withdrawals. Xenobiotics-induced toxic effects on the gastrointestinal (GI) tract can be one of the liabilities associated with novel therapeutics. GI toxicity, preclinical to clinical translation, *in vitro* derisking strategies, and sympathetic neuroimmune interactions will be discussed in this session. Appropriate preclinical toxicology approaches to detect adverse GI events and to evaluate the relevance of preclinical findings to the clinical setting is critical to reduce attrition due to GI toxicity. Speakers from academia and pharmaceutical industries will review the GI system in health and disease, GI neural circuits, neurotransmitters, and receptors involved in the sympathetic regulation of GI tract pathophysiology, derisking small molecule receptor targets, and GI tract risk assessment strategies. The session will conclude with practical case studies and pertinent examples of drug-induced GI tract toxicities encountered in drug development of novel therapeutics.

8:00 AM–8:05 AM **Introduction**

8:05 AM–8:50 AM **Digestive Tract Toxicity: Adverse Events and Preclinical to Clinical Translation**
Judit E. Markovits, DVM, PhD, DACVP, Novartis Institutes for Biomedical Research, Cambridge, MA

8:50 AM–9:35 AM **Derisking Small Molecule Kinase Inhibitor Intestinal Toxicities**
Richard A. Westhouse, DVM, PhD, DACVP, Bristol-Myers Squibb, Princeton, NJ

9:35 AM–9:55 AM	**Student Presentation: Bicarbonate Availability for Vocal Fold Epithelial Defense to Acidic Challenge** *Abigail Durkes, Purdue University, West Lafayette, IN*
9:55 AM–10:25 AM	**Break** *CC – Exhibit Hall A*
10:25 AM–11:10 AM	**Digestive Tract Neuroimmune Interactions in Health and Disease** *Alan E. Lomax, PhD, Gastrointestinal Diseases Research Unit, Queen's University, Ontario, Canada*
11:10 AM–12:00 Noon	**Case Studies of Digestive Tract Toxicity** *Zaher A. Radi, DVM, MBA, PhD, DABT, DACVP, Pfizer Worldwide R&D, Cambridge, MA, Mehrdad Ameri, DVM, MS, PhD, DACVP, Amgen, Thousand Oaks, CA, and Prashant R. Nambiar, BVSc&AH, MS, PhD, DACVP, DABT, Pfizer, Groton, CT*
Tuesday Afternoon	**Free Time**

Wednesday, June 19

Wednesday Morning

7:00 AM–8:00 AM	**Continental Breakfast** *CC – Exhibit Hall A*
7:00 AM–11:30 AM	**Exhibits and Posters Open** *CC – Exhibit Hall A*

Session 4

8:00 AM–12:00 Noon

CC—Oregon Ballroom

Digestive Tract Carcinogenesis

Co-Chairs: **Jerrold M. Ward, DVM, PhD, DACVP,** *Global Vet Pathology, Montgomery Village, MD, and* **Kishore Guda, DVM, PhD,** *Case Western Comprehensive Cancer Center, Cleveland, OH*

The session covers comprehensive aspects of digestive tract carcinogenesis in humans and laboratory animals. The pathology and molecular aspects of carcinogenesis in the esophagus, stomach, and colon will be reviewed with the aim of targeting key molecular pathways for cancer chemoprevention, discovering novel molecular biomarkers for early detection of cancer, and molecular targets for cancer treatment. Since both genetics and environment play an equally important role in gastrointestinal cancer predisposition, the effect of diet in modulating cancer risk will be discussed. Furthermore, preclinical animal models to study the etiology, pathogenesis, methods of prevention and therapy with goals of applications to humans will be presented.

8:00 AM–8:05 AM	**Introduction**
8:05 AM–8:50 AM	**Biomarkers and the Pathogenesis of Gastrointestinal Cancer** *William M. Grady, MD, Fred Hutchinson Cancer Center, Seattle, WA*
8:50 AM–9:35 AM	**Targeting Mutated Pathways for Colon Cancer Therapy** *Zhenghe John Wang, PhD, Case Western Comprehensive Cancer Center, Cleveland, OH*
9:35 AM–10:10 AM	**Rodent Intestinal Carcinogenesis: Pathology and Evaluation Methods for Nonclinical Models** *Jerrold M. Ward, DVM, PhD, DACVP, Global Vet Pathology, Montgomery Village, MD*
10:10 AM–10:30 AM	**Break** *CC – Exhibit Hall A*
10:30 AM–11:15 AM	**Animal Models of *Helicobacter*-Associated Gastric Cancer** *James G. Fox, DVM, DACLAM, Massachusetts Institute of Technology, Cambridge, MA*
11:15 AM–12:00 Noon	**Diet, Genes, and Microbes: Complexities of Colon Cancer Prevention** *Diane F. Birt, PhD, Iowa State University Department of Food Science and Human Nutrition, Ames, IA*

Kayaking in Scappoose Bay
Credit: Tim Jewett

Practical Application of MRI Histology in Toxicologic Pathology

12:00 Noon–1:30 PM

CC—Meeting Room B113

Sponsored by IATP

(Free Event, advance registration required*)

Isotropic 3-D *in vivo* MRI images of rats and mice as well as images of formalin-fixed whole tissue specimens are possible with compact scanners that can now be safely used in an animal room, a histology laboratory, or a pathologist's office. Compact MRI *in vivo* imaging provides an opportunity for longitudinal evaluation of tissue changes and tumor development in experimental animal models. Imaging of whole fixed tissue samples permits a thorough examination of multiple digital slices with subsequent volumetric measurement of 3-dimensional structures while leaving the specimen intact for subsequent conventional H&E histology. This session will provide examples of major organ system pathologies encountered in rodent toxicity and carcinogenicity studies with emphasis on how MRI imaging technology can serve as an important adjunct to conventional pathology evaluation. The objective will be to use rodent animal models and show live animal images followed by images of the fixed specimens from the same animal model and comparison with conventional H&E-stained sections.

**Session is limited to the first 200 attendees who preregister. Lunch will be provided.*

Wednesday Afternoon

Session 5

1:30 PM–5:00 PM

CC—Oregon Ballroom

Biomarkers of Digestive Tract and Pancreatic Injury and Disease

Co-Chairs: **Allison Vitsky, BS, DVM, DACVP,** *Pfizer, San Diego, CA, and* **Florence Poitout-Belissent, DVM, DACVP, DECVCP,** *Charles River Laboratories, Senneville, Quebec, Canada*

Reliable, noninvasive biomarkers of toxicity are a crucial part of both preclinical and clinical studies, enhancing compound screening and dose selection and allowing for the development of novel drugs with optimal safety profiles. Recent advances in technology, including genomic and proteomic approaches, have improved the throughput and sensitivity of existing biomarker assays and have also helped to expand the biomarker toolkit. This session will commence with a review of commonly utilized digestive biomarkers in clinical veterinary settings, then progress to discussions of the ways that these and other novel biomarkers are being utilized to successfully detect and evaluate compound-associated gastrointestinal and pancreatic lesions in exploratory toxicity studies.

1:30 PM–1:35 PM	**Introduction**
1:35 PM–2:15 PM	**Review of Commonly Used Clinical Pathology Parameters for General Gastrointestinal Disease** *Jörg Steiner, DVM, PhD, DACVIM, DECVIM-CA, Texas A&M University, College Station, TX*
2:15 PM–2:35 PM	**Student Presentation: (S)-N'-Nitrosonornicotine, a Constituent of Smokeless Tobacco, Induces Oral Cavity Tumors in Rats** *Ramesh Kovi, College of Veterinary Medicine, University of Minnesota, St. Paul, MN*
2:35 PM–3:00 PM	**Break** *CC – Oregon Ballroom Foyer*
3:00 PM–3:40 PM	**Evaluation of Potential Biomarkers of Gastrointestinal Toxicity in Preclinical Studies** *Allison Vitsky, DVM, DACVP, Pfizer, San Diego, CA*
3:40 PM–4:20 PM	**MicroRNA Biomarkers of Gastrointestinal Toxicity in Tissues and Biofluids** *Amy H. Yang, PhD, DABT, Pfizer, San Diego, CA*
4:20 PM–5:00 PM	**Biomarkers of Exocrine Pancreatic Injury** *Jennie L. Walgren, PhD, Lilly, Indianapolis, IN*
5:30 PM–5:50 PM	**Awards Ceremony** ***CC—Oregon Ballroom***
5:50 PM–6:30 PM	**Annual Business Meeting** ***CC—Oregon Ballroom***
7:00 PM–9:00 PM	**President's Reception** ***DoubleTree Hotel—Lloyd Center Ballroom***

Thursday, June 20

Thursday Morning

7:00 AM–8:00 AM **Continental Breakfast**
CC – Oregon Ballroom Foyer

Session 6

8:00 AM–12:00 Noon

CC—Oregon Ballroom

Pancreatic Toxicity and Carcinogenesis

Co-Chairs: **Arun R. Pandiri, BVSc&AH, MS, PhD, DACVP,** *Experimental Pathology Laboratories, Inc., Durham, NC, and* **A. Eric Schultze, DVM, PhD, DACVP, FIATP,** *Eli Lilly and Company, Indianapolis, IN*

The goals of this session are to provide an update on pancreatic toxicological pathology, to present novel information on responses of the pancreas to xenobiotics, and to provide a current understanding on pancreatic tumorigenesis. The session will begin with an overview of anatomy and physiology of the pancreas as well as pancreatic responses to xenobiotics. The session will highlight various rodent models used to study nonneoplastic pancreatic diseases and the molecular pathogenesis of pancreatic tumorigenesis. In addition, real case studies emphasizing associated liabilities and derisking activities will be used to illustrate the practical aspects of pancreatic toxicity. By the end of the session, the audience will develop a better appreciation for the pancreas as a target organ in toxicological studies.

8:00 AM–8:05 AM **Introduction**

8:05 AM–8:45 AM **Overview of Exocrine Pancreatic Pathobiology with Respect to Pharmacology and Toxicology**
Arun R. Pandiri, BVSc&AH, MS, PhD, DACVP, Experimental Pathology Laboratories, Inc., Durham, NC

8:45 AM–9:25 AM **Pathogenesis of Pancreatic Cancer: Lessons Learnt from Animal Models**
L. Charles Murtaugh, PhD, University of Utah, Salt Lake City, UT

9:25 AM–10:05 AM **Pancreatic Toxicity at the Exocrine-Endocrine Interface**
Karrie A. Brenneman, DVM, PhD, DACVP, Pfizer, Andover, MA

10:05 AM–10:35 AM **Break**
CC – Oregon Ballroom Foyer

10:35 AM–11:15 AM **Animal Models of Nonneoplastic Pancreatic Diseases**
John R. Foster, BSc, PhD, FRCPath, FIATP, HonFBTS, AstraZeneca, Macclesfield, Cheshire, UK

11:15 AM–12:00 Noon **Species- and Dose-Specific Pancreatic Responses and Progression in Repeat-Dose Studies with GI181771X, a Novel Cholecystokinin-1 Receptor Agonist in Mice, Rats and Monkeys**
Chandikumar S. Elangbam, BVSc, PhD, DACVP, GlaxoSmithKline, Research Triangle Park, NC

12:00 Noon **Meeting Adjourned**

Union Station Sign Lamp and Bubbler
Credit: Jim Fullan/Travel Portland

Poster Times and Poster Setup

Poster Setup

Sunday, June 16 ..... 8:00 AM–3:00 PM
Your poster must be set up by 3:00 PM on Sunday, June 16, 2013.

Poster Presentation Times
(Please plan to attend your posters during the following times)

Sunday, June 16 (Welcome Reception) ..... 5:30 PM–7:00 PM (Optional)
Monday, June 17 ..... 10:00 AM–10:30 AM and 3:05 PM–3:35 PM
Tuesday, June 18 ..... 9:55 AM–10:25 AM
Wednesday, June 19 ..... 10:10 AM–10:30 AM

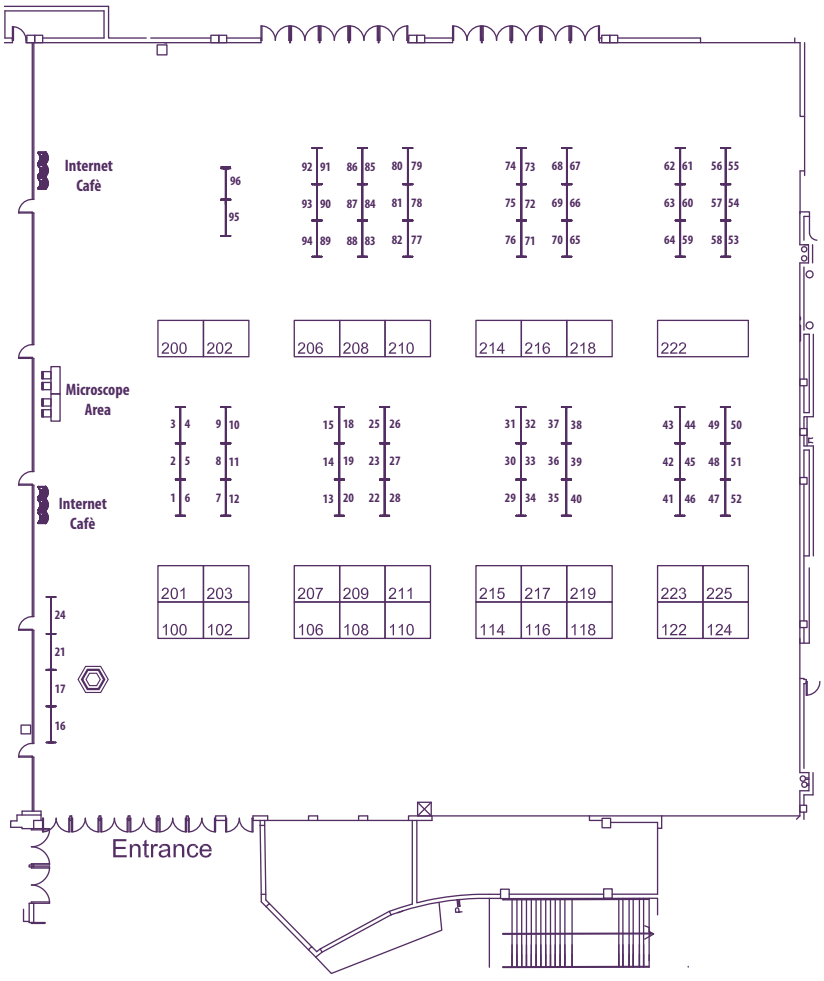
Poster Teardown

Wednesday, June 19 ..... 11:30 AM–1:00 PM
If your poster is not removed before 1:00 pm on Wednesday, June 19, it will be removed and placed near the Registration Desk for pickup.

Young Investigator Judging Times

Monday, June 17 ..... 7:15 AM–8:00 AM, 10:00 AM–10:30 AM, and 3:05 PM–3:35 PM
Tuesday, June 18 ..... 9:55 AM–10:25 AM

Oregon Convention Center—Exhibit Hall A



Booths, Posters, Internet Café, Microscope and Digital Slide Viewing Area

Student posters 16,17,21, and 24 will be displayed directly on the left, inside the entrance of Exhibit Hall A.

Society of Toxicologic Pathology

STP Modular Education Series Inaugural Course: Neuropathology

July 21-24, 2013

Chauncey Conference Center
One Chauncey Road
Princeton, NJ 08541

Course Objective

The Society of Toxicologic Pathology (STP) is offering the inaugural course in the Modular Education Series which will focus on Neuropathology. The first course is planned in partnership with the British Society of Toxicological Pathology (BSTP) and with help from the STP Special Interest Group in Neuropathology (SIGN).

Course Description

The BSTP has offered a Modular Education Series for many years offering two to three courses a year focusing on specific organ systems. In bringing these modular courses to the United States, the STP will offer these same opportunities to pathologists who might not otherwise be able to attend those offered by the BSTP. These courses will include both didactic lectures and practical data and slide review sessions. Microscopic evaluation of histologic sections will be done using whole-slide digital pathology images and practical evaluation/interpretation of toxicologic pathology data will be emphasized.

Who Should Attend

The modular courses are designed primarily for novice practitioners of toxicologic pathology. However, pathology residents with an interest in this specialty or experienced pathologists who desire a refresher course are welcome. In addition, nonpathologists with an interest in the normal histology, pathology or toxicology of the nervous system will also benefit from this module.

Location and Lodging

The modular course will be held in central New Jersey very close to Princeton University at the Chauncey Conference Center, Princeton, New Jersey. This facility is easy to drive to from the US Eastern Mid-Atlantic Region and has abundant parking. Attendees who need to fly to this event are encouraged to use the Newark-Liberty Airport. Princeton is readily accessible from the airport via either Shuttle Service (Olympic Airporter) or the New Jersey Transit Train System (part of the NE Amtrak Corridor) to the Princeton Junction train station. A shuttle from the train station to/from the conference center is readily available by calling the Chauncey Conference Center. The Philadelphia airport is also within a reasonable drive of the facility; however, public transportation is not directly available between this airport and Princeton.

When registering for this event, a carpool request will be made available and conference organizers will put attendees in contact who are interested in this option. Once at the event, there will be no requirement for transportation. The lodging, dining, and course location are all immediately adjacent to each other. Exercise and outdoor recreation facilities are also readily available to all attendees.

Faculty

Mark T. Butt, DVM, DACVP, *Tox Path Specialists*

Ken Schafer, DVM, PhD, DACVP, *Vet Path Services*

Carrie Markgraf, MD, PhD, *Merck & Co. Ltd.*

Alok Sharma, BVSc, MVSc, MS, PhD, DACVP, DABT, *Covance Laboratories, Inc.*

Jim Morrison, DVM, DACVP, *Charles River Laboratories, Pathology Associates*

Robert H. Garman, DVM, DACVP, *Consultants in Veterinary Pathology*

Ingrid D. Pardo, DVM, MS, DACVP, *Pfizer, Inc.*

Course Registration *(includes lodging, meals, and materials)*

	Registration Fee
STP Member (Single lodging)	**$1,450**
STP Member (Double lodging)	**$1,330**
STP Nonmember (Single lodging)	**$1,675**
STP Nonmember (Double lodging)	**$1,555**
Student Member* (Double lodging)	**$950**

The course registration fee is all-inclusive of lodging, meals, and course material. The meals will begin with a reception on Sunday evening, July 21, 2013 and conclude with lunch on Wednesday, July 24, 2013. Registration is limited. Online registration is available at **www.toxpath.org.**

**A letter of verification from a department chair must accompany student registration.*

Continuing Education

This program has been submitted (but not yet approved) for 21 hours of continuing education credit in jurisdictions which recognize AAVSB RACE approval; however participants should be aware that some boards have limitations on the number of hours accepted in certain categories and/or restrictions on certain methods of delivery of continuing education.

Cancellation Policy

If you must cancel your registration, a written request must be received by STP Headquarters no later than June 1, 2013. The registration fee will be refunded less a $25 processing fee. No refunds will be issued after June 1, 2013. STP reserves the right to cancel the course if necessary. In the event of a course cancellation, all registrants will receive a full refund.

Visit* www.toxpath.org *for more details.

Society of Toxicologic Pathology

STP Modular Education Series Inaugural Course: Neuropathology

Tentative Schedule:

Sunday, July 21

2:00 PM–5:30 PM	**Arrival and Check-in**
5:30 PM–7:00 PM	**Welcome Reception BBQ**
7:00 PM–8:00 PM	**Dr. Robert H. Garman: Introductory Lecture**

Monday, July 22

7:00 AM–8:00 AM	**Breakfast**
8:00 AM–12:00 Noon	**Dr. Robert H. Garman: Brain Histology, Special Stains, Artefacts, Neurochemistry, and Selected Lesions in the Cranial and Caudal Brain**
12:00 Noon–1:00 PM	**Lunch**
1:00 PM–3:00 PM	**Dr. Ingrid D. Pardo: Patterns of Neurotoxicity Part I: Nonproliferative Lesions**
3:00 PM–5:00 PM	**Dr. Jim Morrison: CNS/PNS Proliferative Lesions in Rodents**
5:00 PM–7:30 PM	**Recreation Time and Dinner**
7:30 PM–9:00 PM	**Monday Evening Small Group Review and Work Session**

Tuesday, July 23

7:00 AM–8:00 AM	**Breakfast**
8:00 AM–11:00 AM	**Dr. Alok Sharma: Patterns of Neurotoxicity Part II: Nonproliferative Lesions**
11:00 AM–12:00 Noon	**Dr. Ingrid D. Pardo: Brain Sampling and Processing Protocols in Preclinical Species**
12:00 Noon–1:00 PM	**Lunch**
1:00 PM–4:00 PM	**Dr. Ken Schafer: Ocular Toxicity and Ototoxicity in Large Animals**
4:00 PM–5:00 PM	**Dr. Carrie Markgraf: Neurotoxicity Safety Pharmacology Studies**
5:00 PM–7:30 PM	**Recreation Time and Dinner**
7:30 PM–9:00 PM	**Tuesday Evening Small Group Review and Work Session**

Wednesday, July 24

7:00 AM–8:00 AM	**Breakfast**
8:00 AM–12:00 Noon	**Dr. Mark T. Butt: Evaluation of the Adult Nervous System, Evaluation of Intrathecal Drugs, Clinical Neurology, Functional Observation Battery, and Regulatory Guidelines for Neural Active Drugs**
12:00 Noon–1:00 PM	**Lunch and Room Checkout**
1:00 PM–3:00 PM	**Final Review and Attendee Feedback Session**

Questions and Special Accommodations

For any questions please contact STP Headquarters at stp@toxpath.org, or the Course Organizing Committee at:

Director: Kevin Keane	kevin.keane@mac.com	973-919-1785
Co-Director: Bhanu Singh	sbhanu@its.jnj.com	215-628-5344

If you have any special needs or special dietary requirements, please inform the STP modular course organizing committee at least 14 working days in advance of the event.

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1 **International Harmonization of Nomenclature and Diagnostic Criteria for Lesions in Rats and Mice (INHAND): Proposed Bone Nomenclature**

Laura Healy[1], Wanda High[2], John Vahle[3], Matthias Rinke[4], Heinrich Ernst[5], Rogely Boyce[6], Scott Schelling[7], Philip Long[8], Michael Boyle[9], Brad Bolon[10], Stacey Fossey[11], Alison Bendele[12], Jacquelin Jolette[13], Daniel Roth[14], Joel Leininger[15], *[1]HistoTox Labs, Inc, Boulder, CO, USA, [2]Genessee College, Batavia, NY, USA, [3]Lilly Research Laboratories, Indianapolis, IN, USA, [4]Bayer Pharma AG, Wuppertal, Germany, [5]Fraunhofer Institute of Toxicology and Experimental Medicine, Hannover, Germany, [6]Amgen, Inc, Clay, WV, USA, [7]Pfizer, Andover, MA, USA, [8]Vet Path Services, Inc, Mason, OH, USA, [9]NIH/NIEHS, Research Triangle Park, NC, USA, [10]The Ohio State University, Columbus, OH, USA, [11]AbbVie, Inc, North Chicago, IL, USA, [12]Bolder Biopath, Inc, Boulder, CO, USA, [13]Charles River Laboratories, Senneville, QC, Canada, [14]Novartis, Courroux, JU, Switzerland, [15]WIL Research, Hillsborough, NC, USA*

2 **International Harmonization of Nomenclature and Diagnostic Criteria for Lesions in Rats and Mice (INHAND): Proposed Joint and Tooth Nomenclature**

Philip Long[1], Heinrich Ernst[2], Scott Schelling[3], Laura Healy[4], Wanda High[5], John Vahle[6], Matthias Rinke[7], Rogely Boyce[8], Michael Boyle[9], Brad Bolon[10], Stacey Fossey[11], Alison Bendele[12], Jacquelin Jolette[13], Daniel Roth[14], Joel Leininger[15], *[1]Vet Path Services, Inc, Mason, OH, USA, [2]Fraunhofer Institute of Toxicology and Experimental Medicine, Hannover, Germany, [3]Pfizer, Andover, MA, USA, [4]HistoTox Labs, Inc, Boulder, CO, USA, [5]Genessee College, Batavia, NY, USA, [6]Lilly Research Laboratories, Indianapolis, IN, USA, [7]Bayer Pharma AG, Wuppertal, Germany, [8]Amgen, Inc, Clay, WV, USA, [9]NIH/NIEHS, Research Triangle Park, NC, USA, [10]The Ohio State University, Columbus, OH, USA, [11]AbbVie, Inc, North Chicago, IL, USA, [12]Bolder Biopath, Inc, Boulder, CO, USA, [13]Charles River Laboratories, Senneville, QC, Canada, [14]Novartis, Courroux, JU, Switzerland, [15]WIL Research, Hillsborough, NC, USA*

3 **Update on INHAND Collaboration with the FDA on SEND**

Charlotte M. Keenan[1], Dawn G. Goodman[2], *[1]C.M. Keenan ToxPath Consulting, Doylestown, PA, USA, [2]Consultant, Potomac, MD, USA*

4 **History and Evolution of the MPI Research/Michigan State University Combined Residency—A Case Study of an Ongoing, Successful Toxicologic Pathology Training Program**

Keith G. Nelson[1], Scott D. Fitzgerald[2], Daniel J. Patrick[1], *[1]MPI Research, Mattawan, MI, USA, [2]Michigan State University, DCPAH, East Lansing, MI, USA*

5 **Bisphenol A Toxicologic Pathology Study in Swiss Albino Mice Model**

Sameya Anjum[1], Sheikh Raisuddin[1], *[1]Jamia Hamdard, New Delhi, India*

6 **An Investigative Study Using a Novel Zebrafish (*Danio rerio*) Embryonic Adhesion Model to Predict Cholic Acid Rescuing Potential for Fetal Alcohol Syndrome**

Shemikah Colleton[1], James Marrs[2], Lora Becker[1], Courtney Curtis[2], Curtis Colleton[3], *[1]University of Evansville, Evansville, IN, USA, [2]Indiana University-Purdue University Indianapolis, Indianapolis, IN, USA, [3]Bristol-Myers Squibb Company, Mt. Vernon, IN, USA*

§7 **Bicarbonate Availability for Vocal Fold Epithelial Defense to Acidic Challenge**

Abigail Durkes[1], Mahalakshmi Sivasankar[1], Paul Snyder[1], *[1]Purdue University, West Lafayette, IN, USA*

§8 **To Evaluate the Protective Effect of *Vitis vinifera* and *Solanum lycopersicum* in Diet-Induced Obesity in Rats**

Shubham Goyal[1], Nitin Verma[1], Vaneeta Goyal[2], [1]*School of Pharmacy and Emerging Sciences, Baddi University of Emerging Sciences and Technology, Vill- Makhnumajra, Baddi, Distt. Solan, India,* [2]*Himalyan Institute of Pharmacy, Kala-Amb, Distt. Sirmour, India*

9 **Atypical Nodular Astrocytosis in Simian Immunodeficiency Infected Rhesus Macaques (*Macaca mulatta*)**

Keiko Petrosky[1], Susan Westmoreland[2], Andrew Miller[2], [1]*Tufts Cummings School of Veterinary Medicine, North Grafton, MA, USA,* [2]*Division of Comparative Pathology, New England Primate Research Center, Harvard Medical School, Southborough, MA, USA*

§10 **The Impact of Altered Thyroid Function and High-Fat Diets on Lipid Accumulation and Adipose Deposition in Sprague-Dawley Rats**

Venus Welch-White[1], Thomas Graham[1], Norma Dawkins[1], [1]*Tuskegee University, Tuskegee, AL, USA*

11 **Detection of Pathogenic Prion Protein in Formalin-Fixed Tissues by Protein Misfolding Cyclic Amplification (PMCA)**

Alexandra Chesney[1], Chad Johnson[1], Joel Pedersen[1], [1]*University of Wisconsin, Madison, WI, USA*

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Yael S. Schiffenbauer[1], Catherine Tempel-Brami[1], Rinat Abramovitch[2], Abraham Nyska[3], Robert Maronpot[4], [1]*Aspect Imaging, Shoam, Israel,* [2]*Hadassah Hebrew University Medical Center, Jerusalem, Israel,* [3]*Tel Aviv University, Tel Aviv, Israel,* [4]*Maronpot Consulting, Raleigh, NC, USA*

§13 **Myocardial Differentiation in Mouse Embryonic Stem Cells Promoted by Physiological Stiffness of Substrate**

Artem Shkumatov[1], Hyun Joon Kong[1], [1]*University of Illinois at Urbana-Champaign, Urbana, IL, USA*

§14 **Transcriptomic Profiling of Hepatoblastomas and Associated Hepatocellular Carcinomas in B6C3F1 Mice**

Sachin Bhusari[1], Arun Pandiri[1,4], *Yu Wang[1], Julie Foley[1], Hue-Hua Hong[1], Thai-Vu Ton[1], Keith Shockley[2], Shyamal Peddada[2], Kevin Gerrish[3], David Malarkey[1], Robert Sills[1], Mark Hoenerhoff[1],* [1]*Cellular and Molecular Pathology Branch, Division of the National Toxicology Program, National Institute of Environmental Health Sciences, Research Triangle Park, NC, USA,* [2]*Biostatistics Branch, National Institute of Environmental Health Sciences, Research Triangle Park, NC, USA,* [3]*Microarray Core, National Institute of Environmental Health Sciences, Research Triangle Park, NC, USA,* [4]*Experimental Pathology Laboratories, Research Triangle Park, NC, USA*

15 **Risk Factors for Prostate Cancer Patients among Gezira State-Central of Sudan**

Fatima Hamad[1], Dafaallahi Abuidris[1], [1]*Gazira University, Wad-Madani, Sudan*

*§16 **(S)-N'-Nitrosonornicotine, a Constituent of Smokeless Tobacco, Induces Oral Cavity Tumors in Rats**

Charles S. Johnson[1,2], Ramesh C. Kovi[1], *Sandra James-Yi[1,2], M. Gerard O'Sullivan[1,2], Silvia Balbo[3], Stephen S. Hecht[3],* [1]*Department of Veterinary Population Medicine, University of Minnesota, St. Paul, MN, USA,* [2]*Comparative Pathology Shared Resources, University of Minnesota, St. Paul, MN, USA,* [33]*Masonic Cancer Center, University of Minnesota, Minneapolis, MN, USA*

*§17 **Role of Peptidylarginine Deiminase 2 (PAD2) in Cancer Cell Adhesion and Migration**

Sunish Mohanan[1], John L. McElwee[1], Sachi Horibata[1], Paul R. Thompson[2], Scott A. Coonrod[1], [1]*Baker Institute for Animal Health, Department of Biomedical Sciences, Cornell University, Ithaca, NY, USA,* [2]*Department of Chemistry, The Scripps Research Institute, Jupiter, FL, USA*

18 **Synthesis of Hybrid Molecules of Benzimidazole As New Anticancer Agents by Assessed Green Organic Chemistry**

Mohd Rashid[1], Asif Hussain[1], Mohammad Shaharyar[1], Ravinesh Mishra[1], Sameya Anjum[1], Shama Parveen[1], [1]*Jamia Hamdard, New Delhi, India*

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Cynthia J. Willson[1], Heather A. Simmons[2], Amy Usborne[2,3], *Charles E. Wood[1,4], Sunish Mohanan[1,5], J. Mark Cline[1],* [1]*Wake Forest School of Medicine, Winston-Salem, NC, USA,* [2]*Wisconsin National Primate Research Center, Madison, WI, USA,* [3]*Eli Lilly and Company, Indianapolis, IN, USA,* [4]*Environmental Protection Agency, Research Triangle Park, NC, USA,* [5]*Cornell University, Ithaca, NY, USA*

20 Mice Heterozygous for the F508del Mutation in the Cystic Fibrosis Transmembrane Conductance Regulator Anion Channel Display Attenuated Cardiopulmonary Dysfunction and Lung Injury after Influenza H1N1 Infection

Famke Aeffner[1], Lisa L. Joseph[1], Alice A. Gaughan[1], Basant Abdulrahman[2], Judy M. Hickman-Davis[3], Paul Janssen[4], Don Hayes[5], Amal Amer[2], David M. Bedwell[6], Eric J. Sorscher[7], Ian C. Davis[1], *[1]The Ohio State University; Department of Veterinary Biosciences, Columbus, OH, USA, [2]The Ohio State University; Department of Pulmonary and Critical Care Medicine, Columbus, OH, USA, [3]The Ohio State University; Department of Veterinary Preventive Medicine, Columbus, OH, USA, [4]The Ohio State University; Department of Physiology and Cell Biology, Columbus, OH, USA, [5]Nationwide Children's Hospital, Columbus, OH, USA, [6]University of Alabama at Birmingham; Department of Microbiology, Birmingham, AL, USA, [7]University of Alabama at Birmingham; Department of Medicine, Birmingham, AL, USA*

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Michael C. Boyle[1], Jackson A. Hoffman[1], David E. Malarkey[1], Trevor K. Archer[1], *[1]NIEHS, Research Triangle Park, NC, USA*

§22 The Aryl Hydrocarbon Receptor (AHR) in Cardiovascular Development, Developmental Toxicity, and Adult Disease

Vinicius Carreira[1], Yunxia Fan[1], Min Jiang[1], Sheryl Koch[1], Jack Rubinstein[1], Alvaro Puga[1], *[1]University of Cincinnati, Cincinnati, OH, USA*

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Kristin Lewis[1,2], *T. Aaron West[2], Pamela A. Lucchesi[1,2], [1]The Ohio State University, Columbus, OH, USA, [2]Nationwide Childrens Hospital, Columbus, OH, USA*

***§24 Development of Ozone-Induced Eosinophilic Rhinitis in Mice**

Chee Bing Ong[1,2], *Katryn Allen[1,2], Christina Brandenberger[1,2], Daven Jackson-Humbles[1,2], Lori Bramble[1,2], Ryan Lewandowski[1,2], James Wagner[1,2], Jack Harkema[1,2], [1]Michigan State University, Lansing, MI, USA, [2]EPA Great Lakes Air Center for Integrated Environmental Research, Ann Arbor, MI, USA*

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Richard A. Byrd[1], Jamie L. Blackbourne[1], Kim G. Hilbish[1], Albert E. Schultze[1], John L. Vahle[1], *[1]Toxicology and Drug Disposition, Eli Lilly and Company, Indianapolis, IN, USA*

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Tao Chen[1,2], *Yanchun Du[1,2], Chunyan Hu[1,2], [1]National Chengdu Center for Safety Evaluation, West-China Hospital, Sichuan University, Chengdu, China, [2]WestChina-Frontier Pharma Tech Co., Ltd, Chengdu, China*

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Jennifer Chilton[1], Robert Kaiser[1], Stephen Tichenor[1], Dennis Meyer[1], *[1]Charles River, Reno, NV, USA*

28 An Investigative Embryonic Comparative Tolerability and Toxicity Study of Chronic Rectified and Medical-Grade Ethanol Exposure in the Zebrafish (Danio rerio)

Shemikah Colleton[1], Christian Lawrence[3], Margaret Stevenson[1], Lora Becker[1], Kara Maloney[3], Curtis Colleton[2], *[1]University of Evansville, Evansville, IN, USA, [2]Bristol-Myers Squibb Company, Mt. Vernon, IN, USA, [3]Boston Children's Hospital Aquatic Resources Program Karp Family Research Laboratories, Boston, MA, USA*

29 Pathology of Tris (2-Chloroisopropyl) Phosphate (TCPP) Dietary Exposure for Thirteen Weeks in B6C3F1/N Mice and Harlan Sprague-Dawley Rats

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Erik Hagendorn[1], David Young[1], Steven Potts[1], *[1]Flagship Biosciences, Boulder, CO, USA*

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Shim-mo Hayashi[1], Yoichi Konishi[2], Shoji Fukushima[3], Robert R. Maronpot[4], [1]*San-Ei Gen F.F.I., Inc., Osaka, Japan,* [2]*Nara Medical University, Kashihara, Nara, Japan,* [3]*Japan Bioassay Research Center, JISHA, Hadano, Kanagawa, Japan,* [4]*Maronpot Consulting, LLC, Raleigh, NC, USA*

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Schantel Hayes[1], Linda Kooistra[1], Julie Foley[2], Susan Elmore[2], [1]*Charles River Laboratories, Pathology Associates, Durham, NC, USA,* [2]*Cellular and Molecular Patholog Branch, National Toxicology Program, NIEHS, Research Triangle Park, NC, USA*

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34 **Hypertrophy of Rat Parotid Glands Induced by Feeding Treatment with Grape Skin Extract Is Not an Adverse Effect**

Kaoru Inoue[1], Tomomi Morikawa[1], Miwa Takahashi[1], Saori Matsuo[1], Kei Tamura[1], Kumiko Ogawa[1], Midori Yoshida[1], [1]*National Institute of Health Sciences, Tokyo, Japan*

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Varuna P. Panicker[1], Dhanush Krishna B[1], Sisilamma George[1], N. Divakaran Nair[1], Uma R[1], [1]*College of Veterinary and Animal Sciences, KVASU, Mannuthy, Kerala, India*

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Mee-Young Lee[1], In-Sik Shin[1], Chang-Seob Seo[1], Youg-Bum Kim[2], Jung-Hoon Kim[1], Hyeun-Kyoo Shin[1], [1]*Korea Institute of Oriental Medicine, Daejeon, Republic of Korea,* [2]*Korea Institute of Toxicology, Daejeon, Republic of Korea*

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Prashant Yewale[1], Bhanudas More[1], [1]*K. N. P. College of Veterinary Science, Maharashtra, India*

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Mayu Mutsuga[1], Yoshiji Asaoka[1], Yuko Togashi[1], Yohei Miyamoto[1], [1]*Toray Industries, Inc., Kamakura, Kanagawa, Japan*

39 **The "GIST" of Murine Gastrointestinal Spindle Cell Tumors**

Arun Pandiri[1], Priyanka Venakannagari[2], Sachin Bhusari[3], Heather Jensen[3], Ronald Herbert[3], Robert Sills[3], Mark Hoenerhoff[3], Kyathanahalli Janardhan[4], [1]*Experimental Pathology Laboratories, Inc, Durham, NC, USA,* [2]*Enloe High School, Raleigh, NC, USA,* [3]*Cellular and Molecular Pathology Branch, Division of the National Toxicology Program, National Institute of Environmental Health Sciences, Research Triangle Park, NC, USA,* [4]*Integrated Laboratory Systems, Inc, Morrisville, NC, USA*

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Viviane Pascotto[1], Carla Franchi[1], Nathália Souza[1], João Lauro de Camargo[1], [1]*Sao Paulo State University UNESP Medical School, Botucatu/São Paulo, Brazil*

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42 **Similar Deposition and Histopathological Lesions following Inhalation of Three Different Titanium Dioxide Nanoparticles in Wistar Rats**

Dirk Schaudien[1], Heinrich Ernst[1], Susanne Rittinghausen[1], Otto Creutzenberg[1], [1]*Fraunhofer Institute for Toxicology and Experimental Medicine, Hannover, Germany*

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Fumi Shimizu[1], Hitoshi Kandori[1], Naomi Inui[1], Takeshi Watanabe[1], Ryo Fukuda[1], [1]*Takeda Phamaceutical Company Limited., Fujisawa-City, Kanagawa, Japan*

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Shigeaki Takami[1], Atsushi Shiga[1], Kazushige Hasegawa[1], Masayo Hosoi[1], Rumiko Miyajima[1], Yoshihide Ueda[1], Yasufumi Ota[1], Isao Narama[1], [1]*Biosafety Research Center, Iwata, Shizuoka, Japan*

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Rommel Max Tan[1], Zhizhou Kuang[1], Gee Lau[1], [1]*University of Illinois, Urbana, IL, USA*

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Jayne Wright[1], Simon Plummer[2], Rolly Weigand[3], Mike Millar[3], [1]*Syngenta, Bracknell, UK,* [2]*Micromatrices, Dundee, UK,* [3]*MRC Centre for Reproductive Health, Edinburgh, UK*

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Brian Laffin[1], David Young[1], Mohamed Salama[2], Steven Potts[1], Erik Hagendorn[1], Holger Lange[1], [1]*Flagship Biosciences, Boulder, CO, USA,* [2]*University of Utah and ARUP, Salt Lake City, UT, USA*

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Fatima Hamad[1], [1]*Gazira University, Wad-Madani, Sudan*

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Lisa Berman-Booty[1,2], *Po-Chen Chu[1], I-Lu Lai[1], Dasheng Wang[1], Samuel Kulp[1], Ching-Shih Chen[1],* [1]*College of Pharmacy, The Ohio State University, Columbus, OH, USA,* [2]*College of Veterinary Medicine, The Ohio State University, Columbus, OH, USA*

58 **Using Genetically Engineered Mouse Tumor Allografts to Support Drug Discovery**
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59 Occurrence of Spontaneous Amphophilic-Vacuolar Renal Tubule Tumors in Sprague-Dawley Rats from Subchronic Toxicity Studies

Torrie A. Crabbs[1], Steve R. Frame[2], Victoria A. Laast[3], Daniel J. Patrick[4], Johnson Thomas[5], Bevin Zimmerman[6], Jerry F. Hardisty[1], *[1]EPL, Inc., Research Triangle Park, NC, USA, [2]DuPont Haskell Global Centers for Health and Environmental Sciences, Newark, DE, USA, [3]Covance Pharmaceutical R&D (Shanghai) Co., Ltd., Shanghai, China, [4]MPI Research, Mattawan, MI, USA, [5]The Dow Chemical Company, Midland, MI, USA, [6]WIL Research, Ashland, OH, USA*

60 Spontaneous Complex Odontoma in the Molar Region of a Syrian Hamster: A Case Report

Heinrich Ernst[1], Dirk Schaudien[1], Susanne Rittinghausen[1], Elizabeth F. McInnes[2], Paul-Georg Germann[3], *[1]Fraunhofer Institute for Toxicology and Experimental Medicine, Hannover, Germany, [2]Healthscope, Glenside, Australia, [3]Takeda GmbH, Konstanz, Germany*

61 Characterization of IAPP in a Polar Bear Suffering from a Pancreatic Islet Cell Tumor

Jessica Fortin[1], Marie-Odile Benoit-Biancamano[1], *[1]Department of Veterinary Pathology, University of Montreal, Saint-Hyacinthe, Québec, Canada*

62 The Role of ERC/mesothelin in Tumor Growth and Metastasis of the Bhd Gene Mutant Renal Carcinoma Cell Lines (NR cell)

Izumi Matsumoto[1], Kaoru Toyosawa[1], Mami Kouchi[1], Tomoaki Tochitani[1], DANQING ZHANG[2], Toshiyuki Kobayashi[2], Okio Hino[2], Juki Kimura[1], Hitoshi Funabashi[1], *[1]Dainippon Sumitomo Pharma Co., Ltd., Osaka, Japan, [2]Juntendo University School of Medicine, Tokyo, Japan*

63 Inhibitory Effect of Postnatal Exposure to Cyclopamine on Medulloblastoma Development in Ptch1 Heterozygous Mice

Saori Matsuo[1], Miwa Takahashi[1], Kaoru Inoue[1], Kaoru Irie[1], Kei Tamura[1], Midori Yoshida[1], *[1]National Institute of Health Sciences, Tokyo, Japan*

64 Sebaceoma in a Cynomolgus Monkey (*Macaca fascicularis*)

Meliton Novilla[1], Narine Lalayeva[1], Calvert Louden[1,2], *Timothy Coogan[1,2], George De Los Santos[1], Jo Ellen Schielke[1], Stewart Jacobson[1], [1]SNBL USA, Ltd, Everett, WA, USA, [2]Janssen Research & Development, LLC, Spring House, PA, USA*

65 Evaluation of a Negative Carcinogenicity Model for Testing of Environmental Compounds

Charles Wood[1], Andrew Kligerman[1], Christopher Corton[1], *[1]US EPA, Research Triangle Park, NC, USA*

66 Species and Sex Differences in Carcinogenicity Study Outcomes in the US EPA Toxicity Reference Database

Charles Wood[1], Imran Shah[1], Christopher Corton[1], *[1]US EPA, Research Triangle Park, NC, USA*

67 N-Methyl-N-Nitrosourea-Induced Renal Tumors in Rats: Immunohistochemical Comparison to Human Wilms Tumors

Katsuhiko Yoshizawa[1], Yuichi Kinoshita[1,2], *Yuko Emoto[1,2], Takashi Yuri[1], Nobuaki Shikata[2], Airo Tsubura[1], [1]Kansai Medical University, Hirakata, Osaka, Japan, [2]Kansai Medical University Takii Hospital, Moriguchi, Osaka, Japan*

68 Carvedilol Effectively Prevents Experimentally-Induced Colitis Through its Antioxidant Properties

Salim Al-Rejaie[1], Hatem Abuohashish[1], M. Ahmed[1], Abdulaziz Alroujayee[2], Osama Al-Khamees[2], Abdulaziz Aleisa[1], Khaled Al-Hosaini[1], Mihir Parmar[1], *[1]College of Pharmacy, King Saud University, Riyadh, Saudi Arabia, [2]College of Medicine, Al Imam Mohammad Ibn Saud Islamic University, Riyadh, Saudi Arabia*

69 The Chicken As an *In Vivo* Chemical Model for Study of Gastrocnemius Tendon Degeneration

Uriel Blas-Machado[1], Sarah Quattlebaum[1], Jaroslava Halper[1], *[1]University of Georgia, Athens, GA, USA*

70 Characterization of Skeletal Muscle Toxicity following Simvastatin and Clofibrate Administration in Rats

Karen Bodié[1], Andreas Popp[1], *[1]Abbvie Deutschland GmbH & Co. KG, Ludwigshafen, Germany*

71 Potential Endocrine Disruption by a Drinking Water Sample from the State of São Paulo, Brazil

M. L. Marzo Solano[1], C. C. Montagner Raimundo[2], I. Cardoso Pescara[2], W. Figueiredo Jardim[2], D. Dayrell França[3], G. Alves Quinaglia[3], J. A. Anselmo-Franci[4], R. O. Gomes Carolino[4], J F Lozano Luvizutto[1], G Aragão Umbuzeiro[5], J L Viana De Camargo[1], *[1]Botucatu Medical School, UNESP, Botucatu, SP, Brazil, [2]Institute of Chemistry, UNICAMP, Campinas, SP, Brazil, [3]Environmental Toxicology, Genotoxicity and Microbiology Division, CETESB, São Paulo, SP, Brazil, [4]Department of Morphology, Stomatology and Physiology, School of Dentistry, USP, Ribeirão Preto, SP, Brazil, [5]Faculty of Technology, UNICAMP, Limeira, SP, Brazil*

72 Glypican 3 (Gpc3) Expressions in the Urinary Bladder Mucosa of Rats Exposed to the Herbicide Diuron during One or Twenty Weeks

Ligia Gomide[1], Fabiola E Rosa[2], J L V de Camargo[1,2], *Shadia M I Catalano[1], [1]Botucatu Medical School, UNESP, Botucatu, SP, Brazil, [2]Botucatu Medical School Hospital, SP State Secretary of Health, Botucatu, SP, Brazil*

73 Histomorphologic Evaluation of the Rat Pancreas by Three Different Sectioning Methods

Christopher DeMaula[1], Thomas Forest[1], Nagaraja Muniappa[1], Srinivasa Prahalada[1], *[1]Merck & Co., Inc, West Point, PA, USA*

74 Spectral Domain Ocular Coherence Tomography (SD-OCT) and Microscopy: Three Studies in Nonhuman Primates (NHP) Taken Together Elucidate Retinal Morphology

Richard Dubielzig[1], Michael Nork[2], Carol Rasmussen[2], Brian Christian[3], Jacqueline Miller[3], *[1]School of Veterinary Medicine, University of Wisconsin, Madison, WI, USA, [2]School of Medicine and Public Health, University of Wisconsin, Madison, WI, USA, [3]Covance Laboratories, Madison, WI, USA*

75 Characterization of the Exocrine Pancreas in the Zucker Diabetic Fatty (ZDF) Rat Model of Type 2 Diabetes (T2DM) Treated with Sitagliptin, A Dipeptidyl Peptidase-4 (DPP4) Inhibitor

Thomas Forest[1], Daniel Holder[1], Adam Smith[1], Caron Cunningham[1], Markus Dey[1], Clay Frederick[1], Srinivasa Prahalada[1], *[1]Merck Research Labs, Merck & Co, West Point, PA, USA*

76 Application of Hepatotoxicity Guidelines in Drug Development

Sherry Morgan[1], Stacey Fossey[1], Daniel Bow[1], Ryota Kikuchi[1], Yi Yang[1], Barbara Da Silva-Tillman[1], *[1]AbbVie Inc, North Chicago, IL, USA*

77 "Atypical Islet Cell Hyperplasia" an Unusual Proliferative Lesion of Pancreatic Islets in Crl:WI (Han) Rats, or Just a Malformation?

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80 The Effect of Ileal Transposition on Gut Volume and Endocrine Cell Numbers—A Stereological Study in the UCD-T2DM Rat Model

Frederik Hansen[1,2], *Efstathios Vassiliadis[1], Niels Vrang[1], Bethany Cummings[3], Peter Havel[3],* Jacob Jelsing[1], *[1]Gubra, Hørsholm, Denmark, [2]Department of Human Nutrition, University of Copenhagen, Frederiksberg, Denmark, [3]Department of Molecular Biosciences, University of California, Davis, CA, USA*

81 Medium-Sized Vessel Arteritis in Cynomolgus Monkeys Induced by an Agonist Monoclonal Antibody

Joan Lane[1], Amy Usborne[2], Greg Snow[2], Kenny Mackay[1], Matt Stagray[1], Joe Senn[1], Suezanne Parker[1], Janet Clarke[1], *[1]Biogen Idec, Inc, Cambridge, MA, USA, [2]Charles River Laboratories, Inc., Wilmington, MA, USA*

82 Characterization and Validation of the Kainic Acid-Induced Seizure Model in Rats

Jing Ying Ma[1], William A. Eckert III[1], Anindya Bhattacharya[1], *[1]Janssen R&D, San Diego, CA, USA*

83 Study of Protective Effect of *Sida rhombifolia* Linn. Plant Extract on Cadmium Chloride-Induced Toxicity in Wistar Rats

Prathap Kumar Mahalingaiah[1], Logeswari Ponnusamy[2], Dinesh Kumar[2], Usha P.T.A[2], *[1]Texas Tech University, Lubbock, TX, USA, [2]Kerala Veterinary and Animal Sciences University, Thrissur, Kerala, India*

84 Inhibition of Notch2/3 Results in Altered Dentin Formation in Rodent Incisors

Rene Meisner[1], Jean Yen[1], Tim Hoey[1], *[1]OncoMed Pharmaceuticals, Redwood City, CA, USA*

85 Morphological Characteristics of L-glutamate-Induced Retinal Lesions in Neonatal Sprague-Dawley and Brown-Norway Rats: A Time Course Study

Hikaru Mitori[1], Mihoko Ono[1], Naomi Saitoh[1], Kanae Kuroda[1], Toshirou Kasuga[1], Shunji Nakatsuji[1], Masahiro Matsumoto[1], *[1]Drug Safety Research Laboratories, Astellas Pharma Inc., Osaka, Japan*

86 Comparative Sensitivities of the Rat, Dog, and Monkey Larynx and Tracheal Bifurcation in Inhalation Toxicity Studies

Andrew Pilling[1], Vasanthi Mowat[2], David Alexander[3], [1]*ToxPath Consultancy Ltd, Bedfordshire, UK,* [2]*Huntingdon Life Sciences, Huntingdon, UK,* [3]*DA Nonclinical Safety Ltd, Cambridgeshire, UK*

87 Use of Digital Whole Slide Scanning and Automated Image Analysis to assess Bleomycin-Induced Interstitial Fibrosis of the Lung in a Rodent Model: An Objective Analysis of the Efficacy of Potential Therapies

W. Chan[2], Josiah Dungwa[2], Steve Jordan[1], Richard Carrington[1], David Lanham[1], James Cartwright[1], Rachel Armstrong[1], Kenneth Meecham[1], Vasanthi Mowat[1], Madhuri Warren[2], [1]*Huntingdon Life Sciences, Huntingdon, UK,* [2]*Pathology Diagnostics, Cambridge, UK*

88 Drug-Induced Cutaneous Lesions in Cynomolgus Macaques Treated with Metabotropic Glutamate Receptor 5 (mGluR5) Negative Allosteric Modulators

Gopinath Palanisamy[1], John Marcek[1], Gregg Cappon[1], Jessica Whritenour[1], Joseph Brady[1], Christopher Houle[1], [1]*Pfizer, Groton, CT, USA*

89 Sperm Quality in Adult Male Rats after Pre and Postnatal Exposure to Azole Fungicides

Nathalia Almeida Souza[1,2], *Renata Carolina Piffer*[3], *Patricia Carvalho Garcia*[1,2], *Viviane Mattos Pascotto*[1], *Carla Adriene Silva Franchi*[1], *J L Viana de Camargo*[1], [1]*Botucatu Medical School, UNESP, Botucatu, SP, Brazil,* [2]*UNIP, Bauru, SP, Brazil,* [3]*Faculdade Sudoeste Paulista, FSP, Avaré, SP, Brazil*

90 Evaluating the Eye Irritation Potential in BCOP Assay by a Semiquantitative Histopathological Method

Maria C. Rey Moreno[1], Susanne N. Kolle[1], Sibylle Gröters[1], Robert Landsiedel[1], Bennard van Ravenzwaay[1], [1]*BASF SE, Experimental Toxicology and Ecology, Ludwigshafen, Germany*

91 Target-Related Histologic Changes Associated with Selective Inhibition of Stearoyl-CoA Desaturase (SCD) in Sprague-Dawley Rats

Bhanu Singh[1], LeRoy Hall[1], Michele Taylor[1], Jean McCarty[1], Yin Liang[2], Calvert Louden[1], [1]*Department of Drug Safety Sciences, Janssen Research and Development LLC, Spring House, PA, USA,* [2]*Department of Cardiovascular and Metabolic Diseases, Janssen Research and Development LLC, Spring House, PA, USA*

92 Outer Retinal Degeneration in a Cynomolgus Monkey (*Macaca fascicularis*)

Steven Sorden[1], Gopakumar Gopalakrishnan[2], Emily Meseck[1], Dale Dunn[1], Leslie McPherson[1], Scott Williams[1], Roberta Schwartz[1], [1]*Covance Laboratories, Inc., Madison, WI, USA,* [2]*Non-Clinical Safety, Hoffman-La Roche, Nutley, NJ, USA*

93 Immunopathologic Effects of Intravitreal Bevacizumab (Avastin) Injections in Cynomolgus Monkeys

Leandro Teixeira[1], Richard Dubielzig[1], M Suresh[1], Alexandra Almazan[2], James Burke[2], Meg Ramos[2], Michael Robinson[2], [1]*University of Wisconsin-Madison, Madison, WI, USA,* [2]*Allergan Inc., Irvine, CA, USA*

94 Reference Intervals and Comparison of Clinical Pathology Parameters from Cynomolgus Monkeys of Chinese, Mauritius, and Cambodian Origin

Angela Wilcox[1], Danice Wilkins[1], Steven Bulera[1], Brandon Russell[1], Glenn Elliott[1], [1]*Charles River, Reno, NV, USA*

95 Comparison of Lung Lesions in Rats Treated with Nano-Suspensions of Silica, Silver, and Zinc oxide

Midori Yoshida[1], Kaoru Inoue[1], Kazuo Isama[2], Tsuyoshi Kawakami[2], Yukio Kadama[3], Atsuko Matsuoka[4], [1]*Division of Pathology, National Institute of Health Sciences, Tokyo, Japan,* [2]*Division of Environmental Chemistry, National Institute of Health Sciences, Tokyo, Japan,* [3]*Division of Cellular and Molecular Toxicology, National Institute of Health Sciences, Tokyo, Japan,* [4]*Division of Medical Devices, National Institute of Health Sciences, Tokyo, Japan*

96 Image Analysis Quantification of Liver Fibrosis in Animal Models of Nonalcoholic Steatohepatitis (NASH)

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The first 30-minute presentation will demonstrate how the application of stereological methods to the gut can provide unbiased quantitative measures of this complex organ in normal and gastric bypass operated rats. The second 30-minute presentation will demonstrate how the use of image analysis can provide quantitative data on changes of beta-cell mass, replication, and amyloid deposition in pancreatic islets.

Learning Objectives:

- Learn how gastric surgery leads to massive alterations in the gut epithelium, including endocrine L-cells.
- Learn how stereological results can affect research.
- Discuss the need for proper development of immunohistochemistry and image analysis protocol including but not limited to sampling of tissues, antibody specificity and selection of detection systems.
- Discussion on the use of image analysis to provide quantitative data on function of pancreatic islets.
- Lunch will be provided. Limited seating so please register to attend. You must also be registered for the STP Annual Symposium.

Lunch will be provided. Limited seating and registration required. Visit Booth # 219 for more information. You must also be registered for the STP Annual Symposium.

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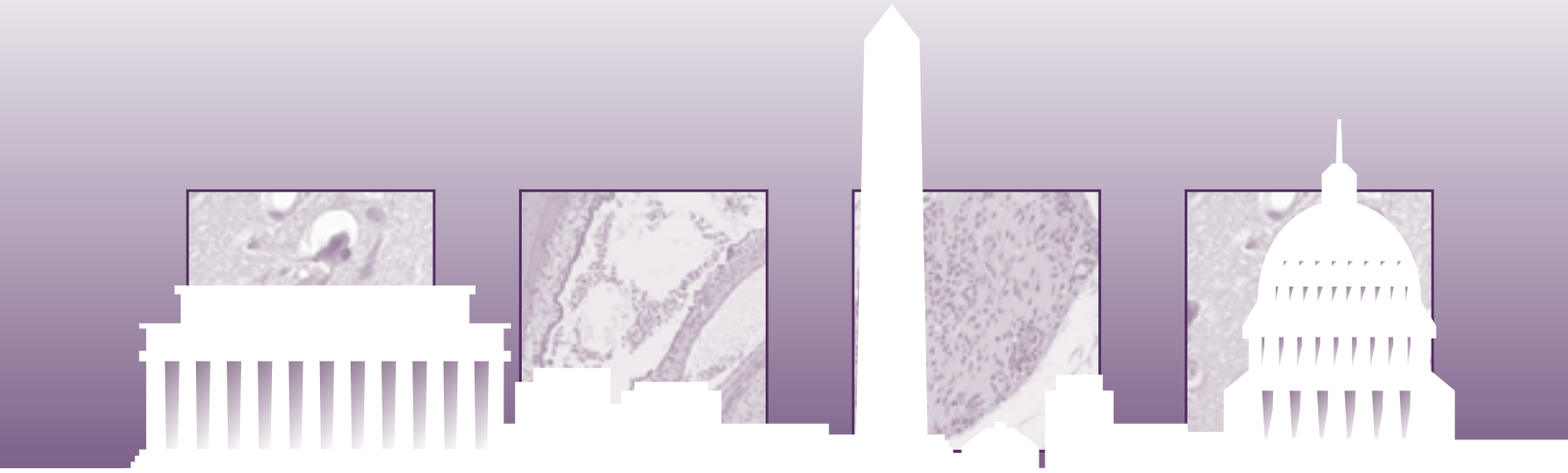

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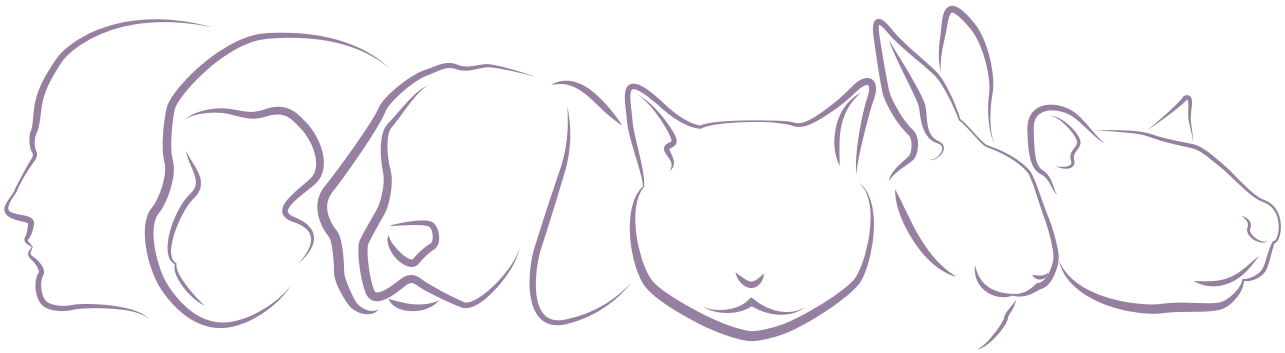

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Website: www.nsalabs.com

NeuroScience Associates (NSA) provides mass production neurohistology services for safety and R&D studies. NSA specializes in the design and execution of safety studies including GLP safety certifications, low-cost R&D safety screens and evaluations. NSA also provides histology services for R&D including traditional histology staining, immunohistochemistry, and a variety of proprietary staining offerings.

Categories: CRO—Contract Research Organization, High Throughput Test Systems, Pharmaceutical Product Safety/Toxicology, Preclinical Research/Testing

Olympus 218

3500 Corporate Parkway
Center Valley, PA 18034
Phone: 484-896-5000

Email: karen.phillips@olympus.com
Website: www.olympusamerica.com

Olympus America is a precision technology leader, creating innovative opto-digital solutions in healthcare, life science, and consumer electronics products. Olympus provides innovative microscope imaging solutions for doctors, clinicians, researchers, and educators. Olympus microscope systems offer unsurpassed optics, superior construction, and system versatility to meet the ever-changing needs of microscopists.

Categories: Instruments

PDS Preclinical Data Systems 106

100 Valley Road, Suite 204
Mount Arlington, NJ 07856
Phone: 973-398-2800

Email: info@PDS-America.com
Website: www.pds-preclinical.com

PDS has been helping accelerate drug development efforts with global clients in the Pharma, CRO, Biotech and Regulatory fields for over 33 years. Universally recognized as "the Gold Standard of preclinical information systems"™, our ToxData®, and PathData® solutions lower preclinical development costs while improving quality. Our optional subscription service hosts licensed PDS applications from the industry's only GLP-Certified Hosting Center. This is the ideal solution for clients looking to reduce their IT costs or accelerate implementation.

Categories: Computing Systems, Data Acquisition, Pathology, Software

Premier Laboratory, LLC 118

PO Box 18592
Boulder, CO 80308
Phone: 303-682-3949
Fax: 303-682-9060

Email: liz@premierlab.com
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Categories: CRO—Contract Research Organization, GLP—Good Laboratory Practice Services, Histology, Immunohistochemistry Research/Supplies

QPS, LLC 210

Three Innovation way, Suite 240
Newark, DE 19711
Phone: 302-690-4962
Fax: 302-369-5602

Email: bhavna.malhotra@qps.com
Websitewww.qps.com

QPS is a GLP/GCP-compliant contract research organization. We provide quality services to pharmaceutical and biotechnology clients worldwide. Our core competencies include DMPK, Toxicology, Bioanalysis, Translational Medicine, Early Stage Clinical Research, Phase 2–4 Clinical Research and Program Management. At QPS-CTPS Taiwan, our commitment is to provide our valued customers with a fast and reliable route to clinical phase 1–2 studies. We offer a wide range of toxicology and DMPK studies as well as other preclinical safety tests that are essential for drug development programs.

Categories: Bioanalytical Services, GLP—Good Laboratory Practice Services, Histopathology, Preclinical Research/Testing

SNBL USA, Ltd. 206

6605 Merrill Creek Parkway
Everett, WA 98203
Phone: 425-407-0121
Fax: 425-407-8601

Email: info@snblusa.com
Website: www.snblusa.com

SNBL USA offers a unique range of safety assessment services to fulfill our commitment of freeing patients from suffering. Managed and operated by a team world renowned for its wide-ranging NHP experience and expertise, we offer programs ranging from regulatory toxicology to customized study designs. Our specialized capabilities include safety assessment of biologics, repro toxicology, cardiovascular, respiratory and CNS pharmacology, immunotoxicology and carcinogenicity. SNBL USA's state of the art facility can house nearly 4,000 NHPs. Our available in house colony assures a quick study start.

Categories: CRO—Contract Research Organization, Pathology, Preclinical Research/Testing, Reproductive Toxicology

Society of Toxicologic Pathology 222

1821 Michael Faraday Drive, Suite 300
Reston, VA 20190
Phone: 703-438-7508
Fax: 703-438-3113

Email: mkettering@toxpath.org
Website: www.toxpath.org

The Society of Toxicologic Pathology (STP) is a nonprofit association of pathologists and other scientists whose principal aim is the advancement of pathology as it pertains to changes elicited by pharmacological, chemical and environmental agents, and factors that modify these responses. The Society's Vision: Be an international leader for improvement of human, animal, and environmental health using an interdisciplinary scientific approach based in pathology and toxicology. This vision will be accomplished through four primary goals: advocacy, education, globalization, and recruitment.

Categories: Education, Organizations, Pathology

Spring Bioscience 217

6920 Koll Center Parkway, Suite 211
Pleasanton, CA 94566
Phone: 925-474-8446
Fax: 925-474-8469

Email: info@springbio.com
Website: www.springbio.com

Spring Bioscience develops carefully selected products that provide both research and diagnostic communities with strategic antibody biomarkers for assessing protein expression in tissue. Spring's expertise lies in the creation of rabbit monoclonal antibodies (SP clones), complemented by advanced detection and ancillary products used in immunohistochemistry (IHC).

Categories: Antibody Products, Cancer Biology/Carcinogenicity, Histopathology, Immunohistochemistry Research/Supplies

Vet Path Services, Inc. 203

6450 Castle Drive
Mason, OH 45040
Phone: 513-469-0777
Fax: 513-469-2474

Email: info@vetpathservicesinc.com
Website: www.vetpathservicesinc.com

Vet Path Services, Inc. (VPS) is a GLP-compliant corporation providing veterinary pathology services (anatomic, clinical, and peer review), histology services (paraffin and plastics), and long-term pathology specimen archiving services. VPS employs nine highly-experienced board-certified pathologists, supporting standard toxicology, transgenic, target animal safety, and medical device studies. VPS supports clients in North America, Asia, and Europe.

Categories: Archiving/GLP Compliant Archiving, Histology, Pathology

Visiopharm 219

PO BOX 486
Broomfield, CO 80038
Phone: 877-843-5268-705
Fax: 877-843-5268

Email: sales@visiopharm.com
Website: www.visiopharm.com

Over the past 12 years, Visiopharm image analysis and stereology software has become the preferred Quantitative Digital Pathology solution for leading biopharmaceutical companies, clinical researchers, and academic researchers all over the world. Our software is featured in over 450 scientific publications, and is compatible with leading slide scanner manufacturers, data management software, and a wide variety of microscopes and cameras. In 2012, Visiopharm introduced an innovative new approach to Quantitative Digital Pathology with the APPCenter and the delivery of our software in the Cloud.

Categories: Microarrays, Pathology, Research, Software

Xybion Medical Systems 122

240 Cedar Knolls Road
Cedar Knolls, NJ 07927
Phone: 973-538-5111
Fax: 973-540-9712

Email: cfrade@xybion.com
Website: www.xybion.com

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Categories: Computing Systems, Data Management, Data Reporting Systems, Statistical Analysis Services

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STP Headquarters: 1821 Michael Faraday Drive, Suite 300, Reston, VA 20190
Tel: 703-438-7508 Fax: 703-438-3113 Email: stp@toxpath.org Website: **www.toxpath.org**