Course Objective:
The objective of this STP Modular Education Course on the Toxicologic Pathology of Special Senses is to educate individuals in the principles of toxicology and pathology of the special senses, focusing on the pathologic evaluation of the ocular and otic systems. Attendees will gain a solid understanding of the normal anatomy and histology of the eye and associated structures, including both theory and practical classes of current accepted terminology through GoRENI, rodent and non-rodent ocular and otic pathology, physiology and function, study requirements to assess ocular and otic toxicity, as well as discussion of gene and cell-based therapies in the eye and ear.

Course Description:
This STP Modular Education Course will bring together attendees and subject experts for didactic lectures and practical sessions including whole-slide digital images and data sets.

- Comparative Anatomy of the Eye;
- Physiology of the Eye and Ocular Structures of Laboratory Animals;
- In Life Ocular Assessments, Modalities, and Clinical Observations;
- INHAND Evaluation and Pathology of the Cornea, Lens, and Anterior Segment;
- INHAND Evaluation and Pathology of the Posterior Segment;
- INHAND Adnexa and Periocular Structures;
- Ocular Therapies;
- Comparative Anatomy and Histology of the Ear;
- Physiology and in Vivo Assessment of the Ear;
- Histological Preparation of the Ear;
- Pathology of the External/Middle Ear and Peri-Otic Structures;
- Pathology of the Inner Ear;
- Case Studies, and More.

The format will include interactive presentations, case studies and active participation of attendees. The course will run for 2.5 days with up-to-date training in an environment that facilitates an intensive learning experience. Sessions listed are for example only and subject to change.

Who Should Attend:
The STP Modular Education courses are designed with the novice toxicologic pathologist in mind; however, pathology residents/graduate students with an interest in toxicologic pathology or experienced pathologists who desire a more in-depth review of the special senses will also benefit from the course.

Faculty:
- **Course Co-Chair**: Tracy Carlson, DVM, PhD, DACVP (Charles River Laboratories)
- **Course Co-Chair**: Helen Booler, BvetMed, DECVP, PhD, MRCVS (Genentech)
- **Course Co-Chair**: Alok Sharma, BVSc, MVSc, MS, PhD, DACVP, DABT (Covance)
- **Course Scientific Advisor**: Ken Schafer, DVM, PhD, DACVP (Greenfield Pathology Services, Inc.)
- **Course Scientific Advisor**: Bradley Njaa, DVM, MVSc, DACVP (Kansas State University)
- **Joshua Bartoe, MS, DVM (Northern Biomedical Research)
- **Brad Bolon, DVM, MS, PhD, DACVP, DABT, FATS, FIATP, FRCPath (GEMpath)
- **Phaedra Cole, DVM, PhD, DACVP (Farman Pathology)
- **Meg Ramos, DVM, PhD, DACVP (AbbVie)
- **Brian Short, DVM, PhD, DACVP (Consultant)
- **Steve Sorden, DVM, PhD (Covance)
- **Leslie Lemke-Boucher, PhD, DABT (Covance)

Location and Lodging:
The Hilton Indianapolis Hotel & Suites is centrally located in downtown Indianapolis, walking distance to shops and dining options and treasured local attractions. Save some free time after the Modular Course to visit the Indianapolis Motor Speedway, Lucas Oil Stadium, and Indianapolis Arts Garden.

The Hilton is readily accessible from the Indianapolis International Airport via local taxi service or Uber. Click here for more on Maps & Directions to the hotel.

Cancellation Policy
A written request for cancellation must be received by STP Headquarters no later than September 20, 2019. The registration fee will be refunded less a $50 processing fee. No refunds will be issued after September 20, 2019. STP reserves the right to cancel the course, in which case all registrants will receive a full refund.

Questions and Special Accommodations
For any questions please contact STP Headquarters. If you have any special needs or special dietary requirements, please inform the STP modular course organizing committee at least three weeks in advance of the event.

Course Registration
Includes lodging Sunday afternoon through Wednesday morning
*A letter of verification from a department chair must accompany student registration.

<table>
<thead>
<tr>
<th>Registration Type</th>
<th>Until September 9</th>
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Image Credits: Eye Image/Alok Sharma and Ear Image/Tracy Carlson
Agenda

**Sunday, October 20, 2019**

4:00 PM–5:00 PM  
Registration

5:00 PM–6:00 PM  
Social Hour

**Monday, October 21, 2019**

**Session 1**

<table>
<thead>
<tr>
<th>Time</th>
<th>Event</th>
</tr>
</thead>
<tbody>
<tr>
<td>7:30 AM–8:00 AM</td>
<td>Breakfast</td>
</tr>
</tbody>
</table>
| 8:00 AM–8:10 AM  | Welcome and Introduction  
Helen Booler, BVetMed, DECVP, PhD, MRCVS, Genentech  
Tracy Carlson, DVM, PhD, DACVP, Charles River Laboratories  
Alok Sharma, BVSc, MVSc, MS, PhD, DACVP, DABT, Covance |
| 8:10 AM–9:00 AM  | Comparative Anatomy of the Eye and Ocular Structures of Laboratory Animals  
Steve Sorden, DVM, PhD, Covance |
| 9:00 AM–10:00 AM | Physiology of the Eye and Ocular Structures of Laboratory Animals  
Joshua Bartoe, MS, DVM, Northern Biomedical Research |
| 10:00 AM–10:30 AM | Break  
Optional Case Study: Sundeep Chandra, BVSc, PhD, DACVP, Biomarin |
| 10:30 AM–12:00 Noon  | In-Life Ocular Assessments, Modalities, and Clinical Observations  
Joshua Bartoe, MS, DVM, Northern Biomedical Research |
| 12:00 Noon–1:00 PM  | Lunch |

**Session 2**

<table>
<thead>
<tr>
<th>Time</th>
<th>Event</th>
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</table>
| 1:00 PM–2:30 PM  | INHAND Evaluation and Pathology of the Cornea, Lens, and Anterior Segment  
Cindy Farman, DVM, PhD, DACVP, Farman Pathology |
| 2:30 PM–3:00 PM  | Break  
Optional Case Study: Alok Sharma, BVSc, MVSc, MS, PhD, DACVP, DABT, Covance |
| 3:00 PM–4:30 PM  | INHAND Evaluation and Pathology of the Posterior Segment  
Meg Ramos, DVM, PhD, DACVP, AbbVie |
| 4:30 PM–5:30 PM  | INHAND Adnexa and Periocular Structures  
Ken Schafer, DVM, PhD, DACVP, Greenfield Pathology Services, Inc. |

**Tuesday, October 22, 2019**

**Session 3**

<table>
<thead>
<tr>
<th>Time</th>
<th>Event</th>
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<tbody>
<tr>
<td>8:00 AM–8:30 AM</td>
<td>Breakfast</td>
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</tbody>
</table>
| 8:30 AM–9:30 AM  | Potpourri of Ocular Therapies  
Moderator: Helen Booler, BVetMed, DECVP, PhD, MRCVS, Genentech  
Ken Schafer, DVM, PhD, DACVP, Greenfield Pathology Services, Inc.  
Alok Sharma, BVSc, MVSc, MS, PhD, DACVP, DABT, Covance  
Steve Sorden, DVM, PhD, Covance |
| 9:30 AM–10:30 AM | Regulatory Considerations for Toxicology Studies of the Eye  
Brian Short, DVM, PhD, DACVP, Consultant |
| 10:30 AM–11:00 AM | Break  
Optional Case Study: Typhaine Lejeune, DVM, ECVP, Charles River Laboratories |
| 11:00 AM–12:00 Noon  | Olfactory Neuroanatomy and Neuropathology  
Brad Bolon, DVM, MS, PhD, DACVP, DABT, FATS, FIATP, FRCPath, GEMpath |
| 12:00 Noon–1:00 PM  | Lunch |

**Session 4**

<table>
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<tr>
<th>Time</th>
<th>Event</th>
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</table>
| 1:00 PM–2:00 PM  | Comparative Anatomy and Histology of the Ear  
Phaedra Cole, DVM, MS, DACVP, Zoetis |
| 2:00 PM–3:00 PM  | Physiology and In Vivo Assessment of the Ear  
Leslie Lemke-Boucher, PhD, DABT, Covance |
| 3:00 PM–3:30 PM  | Break  
Optional Case Study: Sundeep Chandra, BVSc, PhD, DACVP, Biomarin |
| 3:30 PM–4:30 PM  | Histological Preparation of the Ear  
Ken Schafer, DVM, PhD, DACVP, Greenfield Pathology Services, Inc. |
| 4:30 PM–5:30 PM  | Comparative Anatomy and Pathology of the External/Middle Ear and Peri-Otic Structures  
Tracy Carlson, DVM, PhD, DACVP, Charles River Laboratories |

**Session 5**

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<th>Time</th>
<th>Event</th>
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<tbody>
<tr>
<td>8:00 AM–8:30 AM</td>
<td>Breakfast</td>
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| 8:30 AM–10:00 AM  | Pathology of the Inner Ear  
Ken Schafer, DVM, PhD, DACVP, Greenfield Pathology Services, Inc. |
| 10:00 AM–10:30 AM | Break  
Optional Case Study: Cindy Fishman, VMD, PhD, GlaxoSmithKline |
| 10:30 AM–12:00 Noon  | Neuroanatomy and Neuropathology of Central Projections for Special Sense Organs  
Brad Bolon, DVM, MS, PhD, DACVP, DABT, FATS, FIATP, FRCPath, GEMpath |
| 12:00 Noon        | Course Ends                                |

On behalf of STP Education Committee

**Course Co-Chair:**  
Tracy Carlson (Charles River); Helen Booler (Genentech); Alok Sharma (Covance);

**Course Scientific Advisors:**  
Ken Schafer (Greenfield Pathology Services, Inc.); Bradley Njaa (Kansas State University)

Please contact STP headquarters (stp@toxpath.org) with additional questions.