



## Preliminary Program (subject to change)

### Friday, November 8, 2019

5:00 p.m.-7:00 p.m.

**Registration Open**

### Saturday, November 9, 2019

7:00 a.m.-7:30 p.m.

**Registration and Information Desk**

8:00 a.m.-5:00 p.m.

**ACVP Pre-Meeting Workshop**

Comparative Pathologists Special Interest Group

***Mouse Models of Immunobiology and Immunotherapy:  
Emerging Topics and Trends***

Organizers:

Jessica M. Snyder, DVM, DACVP

University of Washington, Seattle, WA

Hibret Adissu-Amare, DVSc, DVM, PhD, DACVP

National Cancer Institute, Bethesda, MD

Susan Knoblauch, DVM, DACVP

The Ohio State University, Columbus, OH

Heather Tillman, DVM, PhD, DACVP

St. Jude Children's Research Hospital, Memphis, TN

This one-day workshop will provide four unique sessions that cover aspects of the emerging field of immune-centered approaches to treating human diseases as modeled in the laboratory mouse. Sessions include: 1) Background lesions relevant to basic and preclinical investigations using immunodeficient mouse strains, 2) Mouse models for understanding cancer immunity and testing immunotherapies, 3) Mouse models of autoimmune diseases and 4) Mouse models of infectious diseases. Comparative pathologists from both academia and industry will give short (20-25 minute long) presentations on topics including background lesions arising in the NSG stock strain as well as other severely immunodeficient, humanized, and germ free mouse strains. Additional disease focused talks will include the development and characterization of critical model systems in mice to study non-lymphoid leukemias, lymphoma, the effects of CAR-T cell therapies, immune complex disease, graft-versus-host disease, and multiple sclerosis. The session will end with discussions of models of infectious diseases to include: mouse models of Lyme disease, Helicobacter infections, and fungal infections in immunocompromised patients.

Presentations will focus on practical, take-home and readily applicable information for pathologists working with mouse models of human disease in these disease areas.

8:00 a.m.-8:20 a.m.

Introduction

8:20 a.m.-8:45 a.m.

NSG and Other Immunodeficient Mice in Immunotherapy

8:50 a.m.-9:10 a.m.

Humanized Mouse: Granulomatous Enteritis

9:15 a.m.-9:30 a.m.

Germ Free Mice

9:35 a.m.-10:00 a.m.

Outbreak of Enterotoxigenic E. coli in NSG Colony

10:00 a.m.-10:30 a.m.

Refreshment Break

10:30 a.m.-10:55 a.m.

Non-lymphoid Leukemias

11:00 a.m.-11:25 a.m.

Lymphoma

11:30 a.m.-11:50 a.m.

CAR-T Cell Therapies

11:50 a.m.-1:00 p.m.

Lunch Break (on your own)

1:00 p.m.-3:00 p.m.

Infections Disease Models and Immunotherapies

1:00 p.m.-1:25 p.m.

Immune Complex: Immune Complex Disease

1:30 p.m.-1:55 p.m.

Multiple Sclerosis Mouse Model and Gut Microbiome

2:00 p.m.-2:25 p.m.  
GVHD

2:30 p.m.-2:45 p.m.  
Mouse Models of Miscellaneous Autoimmune Diseases

2:50 p.m.-3:15 p.m.  
Refreshment Break

3:15 p.m.-3:35 p.m.  
TBA

3:40 p.m.-4:00 p.m.  
Mouse Models of Lyme Disease

4:05 p.m.-4:25 p.m.  
Helicobacter

4:30 p.m.-4:50 p.m.  
Fungus

4:50 p.m.-5:00 p.m.  
Questions and Discussion

8:00 a.m.-5:00 p.m.

### **ACVP Pre-Meeting Workshop**

Primate Pathology Special Interest Group

#### ***Back to Basics: A Primer on NHP Pathology***

The theme of this year's Primate Pathology Workshop is Back to Basics: A Primer on Non-Human Primate Pathology. Each lecture will review classic pathologic conditions in different classes of NHPs, including baboons, marmosets, macaques, and apes. A separate lecture will present an overview of clinical pathology in NHPs, with a focus on differences between species (especially macaques). The workshop will be valuable to students and young pathologists but also appeal to all who don't get to work regularly with these species and would like to learn more.

In addition to presentations by invited speakers, there will be "mystery" NHP case presentations from workshop attendees in the afternoon. Case material with a focus on classic cases in different primate models is encouraged, but material can be from any interesting or unique primate case. Oral case presentations will be 10-12 minutes with 3-5 minutes for questions/discussion. Any interested parties, including clinicians, pathologists, and research scientists, are encouraged to submit cases.

- Review of baboon pathology
- Review of marmoset pathology
- Review of macaque pathology (maybe could be combined with marmoset)
- Review of ape pathology
- Back to basics review of primate clinical pathology
- Short cases with encouragement of presenting classic cases in different primate models

8:00 a.m.-5:00 p.m.

### **ASVCP Pre-Meeting Workshop**

#### ***Comparative Bone Marrow Hematopathology***

Session Chairs:

Kurt Zimmerman, DVM, PhD, DACVP  
Virginia Tech, Blacksburg, VA  
Laura Snyder, DVM, DACVP  
Marshfield Labs, Marshfield, WI

Participants will review the comparative (cytology and histopathology) for a spectrum of marrow disorders followed by an interactive guided discussion using mystery cases lead by hematopathology experts from both veterinary and human medicine.

8:10 a.m.-10:30 a.m.

Bone Marrow Histopathologic Evaluation and Bone Marrow Cytologic Evaluation

Joanne Messick, VMD, PhD, DACVP  
Purdue University, West Lafayette, IN  
Rose E. Raskin, DVM, PhD, DACVP  
Purdue University, West Lafayette, IN

10:30 a.m.-11:00 a.m.

Refreshment Break

11:00 a.m.-12:00 noon

Bone Marrow Case Presentations  
Joanne Messick, VMD, PhD, DACVP  
Rose E. Raskin, DVM, PhD, DACVP

12:00 noon-1:30 p.m.

Lunch Break (on your own)

1:30 p.m.-3:30 p.m.

Guided Hematopathology Case Discussions

Anne Avery, VMD, PhD  
Colorado State University, Fort Collins, CO  
Dorothee Bienzle, DVM, PhD, DACVP  
University of Guelph, Guelph, Ontario, Canada  
Joanne Messick, VMD, PhD, DACVP  
Rose E. Raskin, DVM, PhD, DACVP  
Sa Wang, MD, DABP  
University of Texas-MD Anderson Cancer Center, Houston, TX

3:30 p.m.-4:00 p.m.

Refreshment Break

4:00 p.m.-5:00 p.m.

Flow Cytometry in the Diagnosis of T-/NK Cell Neoplasms  
Sa Wang, MD, DABP

8:00 a.m.-5:00 p.m.

### **C.L. Davis-Thompson Foundation Pre-Meeting Workshop**

#### ***Skin and Mammary Tumors: Standardization and Simplification***

Session Chairs: Bruce H. Williams, DVM, DACVP

Joint Pathology Center, Silver Spring, MD

Jennifer L. Chapman, DVM, DACVP

Defense Health Agency, Falls Church, VA

The workshop will be divided into two sections: Epithelial Tumors of the Skin and Tumors of the Mammary Gland. The presentations will emphasize material from Volumes 1 and 2 of *Surgical Pathology of Tumors of Domestic Animals*, published by the Davis-Thompson DVM Foundation. The presentation on Skin Tumors will be focused specifically on more challenging diagnoses, and include distinctive histologic features of neoplastic and non-neoplastic epithelial "tumors" of the skin, differential diagnosis and clinically important information. A majority of the session will be comprised of presentations on Mammary Tumors. This discussion will emphasize those criteria that are important in establishing a definitive diagnosis, including criteria of malignancy and grading of mammary tumors. Diseases of the teat will focus on neoplastic and non-neoplastic diseases that may be encountered in veterinary

diagnostic pathology. Finally, difficult cases will be discussed; attendees will have an opportunity to review these cases before the workshop.

8:00 a.m.-8:15 a.m.  
Welcome and Introductions

8:15 a.m.-10:00 a.m.  
Tumors of the Skin  
Anatomy and Histology of the Canine and Feline Mammary Gland

10:00 a.m.-10:30 a.m.  
Refreshment Break

10:30 a.m.-12:00 noon  
Mammary Tumors: Important Diagnostic Criteria

12:00 noon-1:00 p.m.  
Lunch Break (on your own)

1:00 p.m.-3:00 p.m.  
Mammary Tumors: Grading and Criteria for Determining  
Malignancy

3:00 p.m.-3:30 p.m.  
Refreshment Break

3:30 p.m.-4:15 p.m.  
Diseases of the Canine and Feline Teat

4:15 p.m.-5:00 p.m.  
Mammary Tumors: Cases Discussion

1:00 p.m.-8:00 p.m.  
**Career Center**

5:00 p.m.-6:15 p.m.  
**Meet the Pathologist:**  
**A Discussion of Careers in Pathology**  
Session Chair: R. Mark Simpson, DVM, PhD, DACVP  
National Cancer Institute, Bethesda, MD

6:15 p.m.-7:15 p.m.  
**Student and Resident Reception**  
**Sponsored by Antech**

7:30 p.m.-10:00 p.m.  
**Opening Reception and Veterinary Student Poster Session**  
**including a special performance at 9:00 p.m. by the AC/VP**  
**Band, all the way from Stillwater, Oklahoma**

## Sunday, November 10, 2019

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6:30 a.m.-7:30 a.m.  
**Yoga Basics for Pathologists**<sup>new</sup>  
Katherine Gibson-Corley, DVM, PhD, DACVP  
University of Iowa, Iowa City, IA

7:00 a.m.-8:00 a.m.  
**Committee Meetings**

7:00 a.m.-8:00 a.m.  
**Veterinary Student Breakfast**

7:00 a.m.-5:00 p.m.  
**Registration and Information Desk**

8:00 a.m.-12:00 noon  
**ASVCP Current Topics in Clinical Pathology**  
**Infectious Diseases**

Session Chair: Kristina Meichner, DVM, DACVP  
University of Georgia, Athens, GA

This session will cover clinical pathology relevant aspects of different infectious diseases in a variety of species, with a focus on diagnostics including clinical and laboratory findings. Topics include bovine anaplasmosis and other relevant bovine hemoparasites, an update on diagnostics for Feline Infectious Peritonitis, a comparative talk on recent advances in the identification of fungal infections, and a comparison between Lyme Disease and Tick-borne Relapsing Fever in the dog.

8:00 a.m.-8:50 a.m.  
Bovine Anaplasmosis and Other Relevant Bovine Hemoparasites  
Jessie Monday, MS, DVM  
Texas A&M Veterinary Medical Diagnostic Laboratory (TVMDL)  
Amarillo, Amarillo, TX

8:50 a.m.-9:40 a.m.  
Feline Infectious Peritonitis (FIP): Diagnostic Dilemmas and  
Future Perspectives  
Kelly S. Santangelo, DVM, PhD, DACVP  
Colorado State University, Fort Collins, CO

9:40 a.m.-10:10 a.m.  
Refreshment Break

10:10 a.m.-11:00 a.m.  
Update on the Identification of Fungal Diseases: Perspectives  
from a Human International Clinical Mycology Reference  
Laboratory  
Connie F.C. Gibas, PhD  
University of Texas Health Science Center, San Antonio, TX

11:00 a.m.-11:50 a.m.  
Borrelia spp. Infections: Lyme Disease or Tick-Borne Relapsing  
Fever (TBRF)?  
Julie Piccione, MS, DVM, DACVP  
Texas A&M Veterinary Medical Diagnostic Laboratory (TVMDL),  
College Station, TX

11:50 a.m.-12:00 noon  
Questions and Discussion

8:00 a.m.-12:00 noon  
**Career Development**  
**Coping with Technology-Real People and Real-life Stories of**  
**Digital Pathology Applications**

Session Chair:  
Kelli L. Boyd, DVM, PhD, DACVP  
Vanderbilt University Medical Center, Nashville, TN  
Session Co-Chair: Gillian L. Beamer, VMD, PhD, DACVP  
Tufts University, Grafton, MA

This half-day session will give examples of real life uses of digital pathology applications in research, diagnostic, and academic settings. The emphasis of the session is to introduce the audience to multiple digital pathology platforms and demonstrate the ways pathologists will be using these applications in the future. The first part of the program will focus on quantitative applications including some examples using artificial intelligence. The latter half of the program will focus on the implementation of digital pathology and artificial intelligence into large diagnostic laboratories. The

final presentation will be an overview of how digital pathology platforms have been used in medical education and present concepts on how these technologies can be adapted to veterinary pathology training programs. The session will end with a round table discussion providing participants the opportunity to discuss key topics with the panel of speakers.

8:00 a.m.-8:10 a.m.

Real World Uses for Digital Pathology Introduction  
Kelli Boyd DVM, PhD, DACVP

8:10 a.m.-8:30 a.m.

Using Aiforia  
Gillian Beamer DVM, PhD, DACVP

8:30 a.m.-8:50 a.m.

"Qu Can Do it! "An Image Analysis Case Study in QuPath  
Lauren Himmel, DVM, PhD, DACVP  
Vanderbilt University Medical Center, Nashville, TN

8:50 a.m.- 9:10 a.m.

Practical Applications of VisioParm Image Analysis in  
Comparative Pathology  
Jessica M. Snyder, DVM, MS, DACVIM, DACVP  
University of Washington, Seattle, WA

9:10 a.m.-9:30 a.m.

Approaches to Quantifying Lipid Accumulation in a Mouse  
Model of Chemotherapy-induced Toxicity: Analysis of Hepatic  
Lipidosis and adipocyte size using ImageScope and ImageJ/Fiji  
Laura Janke, DVM, PhD, DACVP  
St. Jude Children's Research Hospital, Memphis, TN

9:30 a.m.-9:50 a.m.

Halo: An Intuitive and Versatile Image Analysis Tool  
Nicholas A. Crossland DVM, PhD, DACVP  
Boston University, Boston MA

9:50 a.m.-10:20 a.m.

Refreshment Break

10:20 a.m.-10:40 a.m.

Transitioning Diagnostic Lab to Whole Slide Image  
Richard Luong, BVSc, DACVP  
IDEXX, Portland, OR

10:40 a.m.-11:00 a.m.

The Cutting Edge of Clinical Pathology  
Jan Andrews, DVM, PhD, DACVP  
Antech Diagnostics, Raleigh, NC

11:00 a.m.-11:20 a.m.

Digital Pathology in an Academic Setting  
Alex Baras MD, PhD  
John Hopkins, Baltimore, MD

11:20 a.m.-12:00 noon

Roundtable Discussions

8:00 a.m.-12:00 noon

### **Concurrent Session I Peripheral Nervous System**

Session Chairs: Lisa Lanigan, DVM, PhD, DACVP  
Charles River Laboratories, Inc., Ashland, OH  
Brad Bolon, DVM, PhD, DABT, FATS, FIATP, DACVP  
GEMPath, Longmont, CO

This half-day session will present an overview of peripheral nervous system (PNS) biology, lesions, and disease mechanisms. The session will begin with talks on PNS organization and function, specialized sampling and processing practices for PNS tissues, and common morphologic lesions and artifacts. After the break, our speakers will delve into the specific PNS lesions and mechanisms including infectious inflammatory diseases, neoplastic diseases, and metabolic/paraneoplastic diseases. The goal of this session is to provide a brief but well-rounded synopsis of the PNS—a frequently overlooked, but extremely important, system.

8:00 a.m.-8:30 a.m.

Biology of the Peripheral Nervous System in Vertebrates  
Ingrid D. Pardo, MS, DVM, DACVP  
Pfizer, Inc., Gales Ferry, CT

8:30 a.m.-9:10 a.m.

Sampling and Fixation Techniques for Routine and Dedicated  
Peripheral Nerve and Ganglion Evaluation in Rodents, Dogs,  
and Primates  
Mark T. Butt, DVM, DACVP  
TPS (a StageBio Company), Frederick, MD

9:10 a.m.-9:45 a.m.

Pathologic Assessment of the Peripheral Nervous System:  
Lesions of Myelinated Fibers and Selected Artifacts  
Bernard S. Jortner, VMD, DACVP  
Virginia-Maryland College of Veterinary Medicine, Hewitt, TX

9:45 a.m.-10:15 a.m.

Refreshment Break

10:15 a.m.-10:50 a.m.

Inflammatory Diseases of the Peripheral Nervous System  
Duncan S. Russell, BVMS (Hons), DACVP  
Oregon State University, Corvallis, OR

10:50 a.m.-11:25 a.m.

Neoplastic Diseases of the Peripheral Nervous System  
Kevin D. Woolard, DVM, PhD, DACVP  
University of California, Davis, CA

11:25 a.m.-12:00 noon

Metabolic/Paraneoplastic Diseases of the Peripheral Nervous  
System  
Virginia L. Godfrey, DVM, PhD, DACVP  
University of North Carolina School of Medicine, Chapel Hill, NC

8:00 a.m.-12:00 noon

### **Industrial and Toxicologic Pathology Focused Scientific Session I**

Session Chair: Katherine A. Knostman, DVM, PhD, DACVP  
Histo-Scientific Research Labs, Mount Jackson, VA

Invited Speakers

New Developments in Carcinogenicity Testing – Should We Do  
Away with it?

Aaron M. Sargeant, DVM, PhD, DACVP  
Charles River Laboratories, Spencerville, OH

Challenges in Multiplexing and Imaging Techniques

Manu M. Sebastian, DVM, PhD, DABT, DAACLAM, DACVP  
The University of Texas MD Anderson Cancer Center, Smithville, TX

8:00 a.m.-12:00 noon

**Natural Disease Focused Scientific Session I**

Session Chair: Angela Pillatzki, MS, DVM, DACVP  
South Dakota State University, Brookings, SD

Pathology of Virulent Newcastle Disease: The 2018-19 California Outbreak

Francisco A. Uzal, DVM, MSc, PhD, DACVP  
University of California, Davis, San Bernardino, CA

9:00 a.m.-5:00 p.m.

**Career Center**

9:30 a.m.-4:30 p.m.

**Focused Scientific Poster Session A<sup>new</sup>** (authors present for discussion at the refreshment breaks)

10:00 a.m.-10:30 a.m.

**Industrial and Toxicologic Pathology and Natural Disease Focused Scientific Poster Session** (author present for discussion and questions)

12:00 noon-2:00 p.m.

**Veterinary Pathology Resident/Trainee Luncheon**

12:15 p.m.-1:15 p.m.

**Emerging Disease Focused Seminar**

Session Chair: A. Sally Davis, DVM, PhD  
Kansas State University, Manhattan, KS

African Swine Fever: How it Got a Global Passport  
Mary Louise Penrith, BSc, BSc (Hon), PhD Zoology, PhD Entomology, BVSc, BVSc (Hon)  
University of Pretoria, Menlo Park, South Africa

1:30 p.m.-4:30 p.m.

**ASVCP Veterinary Laboratory Professionals Session I**

Session Chair: Nicole Rosen, MT (ASCP)  
Purdue University, West Lafayette, IN

1:00 p.m.-2:00 p.m.

Managing Conflict: Me First!  
John Christian, DVM, PhD  
Purdue University, West Lafayette, IN

2:00 p.m.-3:00 p.m.

Advia Hematology Multispecies Cytogram Review  
David Odneal, BS, MT  
Siemens-Healthineers, Kirbyville, MO

3:00 p.m.-3:30 p.m.

Refreshment Break

3:30 p.m.-4:30 p.m.

ProCyte Dx Cytograms Interpretations  
Dennis B. DeNicola, DVM, PhD, DACVP  
IDEXX Laboratories, Inc., Westbrook, ME

1:30 p.m.-5:00 p.m.

**Mini-Symposium I**

**Cutting Edge Biologic Cancer Therapeutics**

Session Chairs: James B. Rottman, DVM, PhD, DACVP  
bluebird bio, Cambridge, MA  
Keith G. Mansfield, DVM, DACVP  
Novartis, Cambridge, MA

1:30 p.m.-2:15 p.m.

Engineered Cell Therapy Products for Oncology  
Richard A. Morgan, PhD  
Editas Medicine, Cambridge, MA

2:15 p.m.-3:00 p.m.

Learnings from Blincyto<sup>®</sup> and the BiTE<sup>®</sup> (Bispecific T-Cell Engager) Platform, from Bench to Bedside  
Benno Rattel, DVM, PhD  
Amgen, Munich, Germany

3:00 p.m.-3:30 p.m.

Refreshment Break

3:30 p.m.-4:15 p.m.

Development of ONCR-177, a miR-attenuated Oncolytic HSV-1 Designed to Potently Activate Systemic Anti-tumor Immunity  
Christophe Queva, PhD  
Oncorus, Cambridge, MA

4:15 p.m.-5:00 p.m.

Therapeutic mRNA s: Overview and Examples  
Daher Ibrahim Aibo, DVM, PhD, DACVP  
Novartis, East Hanover, NJ

1:30 p.m.-4:30 p.m.

**Clinical Pathology Focused Scientific Session I**

Session Chair: Amy L. Warren, BVSc, PhD, DACVP  
University of Calgary, Calgary, Alberta, Canada

Invited Speakers

We're Not Crazy! Integration of Clinical Pathology and Tissue Analysis for Comprehensive Kidney Evaluation  
Rachel E. Cianciolo, VMD, PhD, DACVP  
The Ohio State University, Columbus, OH

Mary B. Nabity, DVM, PhD, DACVP

Texas A&M University, College Station, TX

1:30 p.m.-5:00 p.m.

**Diagnostic Pathology Focused Scientific Session I**

Session Chair: Aline Rodrigues Hoffmann, DVM, PhD, DACVP  
Texas A&M University, College Station, TX

1:30 p.m.-5:00 p.m.

**Experimental Disease Focused Scientific Session I**

Session Chair: Oded Foreman, DVM, DACVP  
Genentech Inc., South San Francisco, CA

Invited Speakers

The Connection Between Cancer and the Microbiome with an Emphasis on the Gut  
Vanessa B. Jensen, DVM, DACLAM  
The University of Texas MD Anderson Cancer Center, Houston, TX

Analyzing Genetic and Microenvironmental Mediators of Carcinogenesis with the Zebrafish Model  
Heather R. Shive, DVM, PhD, DACVP  
North Carolina State University, Raleigh, NC

1:30 p.m.-5:00 p.m.

**Natural Disease Focused Scientific Session II**

Session Chair: Angela Pillatzki, MS, DVM, DACVP

The Wonderful World of Vitamin D: Bone Disease and More  
Keren E. Dittmer, BVSc, Dist PhD, DACVP  
Massey University, Palmerston North, New Zealand

Newly Described Diseases in Arctic Foxes, Elephant Seals and Harbor Seals  
Terry Spraker, DVM, PhD, DACVP  
Colorado State University, Fort Collins, CO

3:00 p.m.-3:30 p.m.

**Clinical Pathology, Diagnostic Pathology, Experimental Disease, and Natural Disease Focused Poster Sessions** (author present for discussion and questions)

4:30 p.m.-6:00 p.m.

**ASVCP Business Meeting**

5:15 p.m.-6:00 p.m.

**Maintenance of Certification Q&A Session**

6:00 p.m.-7:30 p.m.

**ACVP Town Hall Business Meeting**

7:30 p.m.-8:45 p.m.

**ACVP Speed Networking Event<sup>new</sup>** (attendance complimentary, advance registration required)  
Expand your professional network across career stages and work environments. The event allows for time to share both in randomly assigned pairs and unstructured networking. Attendance is limited and available in order of registration. The networking event is free and will provide an opportunity to build professional relationships. The number of attendees is limited to allow an intimate atmosphere. Attendees will be leveraged to represent variable career stages in industry, academia and CRO.

7:30 p.m.-9:30 p.m.

**Mystery Slide Review Session: Neuropathology**  
Session Chair: Andrew D. Miller, DVM, DACVP  
Cornell University, Ithaca, NY

## Monday, November 11, 2019

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6:30 a.m.-7:30 a.m.

**Yoga for the Microscope<sup>new</sup> (Chair Yoga)**  
Katherine Gibson-Corley, DVM, PhD, DACVP

7:00 a.m.-8:00 a.m.

**Committee Meetings**

7:30 a.m.-1:00 p.m.

**Registration and Information Desk**

8:00 a.m.-12:00 noon

**ACVP and ASVCP Plenary Session  
Cancer Immunotherapy**  
Session Chairs: Peter Vogel, DVM, PhD, DACVP  
St. Jude Children's Research Hospital, Nashville, TN  
Lauri Diehl, DVM, PhD, DACVP  
Gilead Sciences, Inc., Foster City, CA

8:00 a.m.-9:00 a.m.

The End of the Beginning: Cancer, Immunity and the Future of a Cure  
Michael S. Knich, PhD  
Washington University, St. Louis, MO

9:00 a.m.-9:45 a.m.

T-cell Intrinsic and Extrinsic Mechanisms Limiting Tumor Immunotherapy  
Benjamin A. Youngblood, PhD  
St. Jude Children's Research Hospital, Memphis, TN

9:45 a.m.-10:15 a.m.

Refreshment Break

10:15 a.m.-11:00 a.m.

New Approaches to Cancer Immunotherapy in Dogs: More Than Checkpoint Inhibitors  
Steven Dow, DVM, PhD, DACVP  
Colorado State University, Fort Collins, CO

11:00 a.m.-11:45 a.m.

Adoptive T Cell Therapies for Dogs with Cancer and Autoimmune Disease  
Nicola Mason, BVetMed, PhD, DACVIM  
University of Pennsylvania, Philadelphia, PA

11:45 a.m.-12:00 noon

Questions and Discussion

8:00 a.m.-12:00 noon

**ASVCP Veterinary Laboratory Professionals Session II**  
Session Chair: Nicole Rosen, MT (ASCP)

8:30 a.m.-9:30 a.m.

Laboratory Professionals as Stewards for Quality Point-of-Care Testing  
Kim Futrell, MT(ASC), MSHI  
Orchard Software Company, Carmel, IN

9:30 a.m.-10:30 a.m.

A Tale of Four Glucose Measurements: Comparison of Three POC Glucometers to a Reference Standard  
Aimee Brooks, MS, DVM, DACVECC  
Purdue University, West Lafayette, IN

10:30 a.m.-11:00 a.m.

Refreshment Break

11:00 a.m.-12:00 noon

Implementing a Point-of-Care Testing (POCT) Quality Assessment Program in an Academic Veterinary Medical Center: Challenges and Lessons Learned  
Bente Flatland, DVM, DACVIM, DACVP  
University of Tennessee, Knoxville, TN

9:00 a.m.-1:00 p.m.

**Focused Scientific Poster Session B<sup>new</sup>**  
ACVP Young Investigator Award Posters on display – authors present for discussion at the morning refreshment break.

9:00 a.m.-5:00 p.m.

**Career Center**

10:00 a.m.-10:30 a.m.

**ACVP Young Investigator** (Award poster authors present for questions and discussion)

12:00 noon-1:30 p.m.

**Community Service Activity** (free event, register online)

12:15 p.m.-1:45 p.m.

**Latin Comparative Pathology Group Presents**

Session Chairs: Melissa Sanchez, VMD, PhD, DACVP  
University of Pennsylvania, Philadelphia, PA  
Ana Alcaraz, DVM, PhD, DACVP  
Western University of Health Science, Pomona, CA

Zoonotic Diseases: How Animals and Humans Trade Disease  
Claus Buergelt, DVM, PhD, DACVP  
University of Florida, Gainesville, FL

How Would You Call it: Axonal Swelling, Spheroid or Dystrophy?  
Ingrid D. Pardo, MS, DVM, DACVP  
Pfizer, Groton, CT

Parrot Bornavirus  
Jeann Leal, DVM, MS, PhD  
Universidade Federal da Paraiba - UFPB (Brazil)

1:30 p.m.-3:30 p.m.

**ASVCP Case Discussion Session**

Session Chair: Sharon M. Dial, DVM, PhD, DACVP  
University of Arizona, Tucson, AZ

1:30 p.m.-4:00 p.m.

**70<sup>th</sup> Anniversary Pillars of Pathology**

Session Chair: Krista LaPerle, DVM, PhD, DACVP  
The Ohio State University, Columbus, OH

Speakers:  
1:30 p.m.-2:00 p.m.  
Seventy Years of ACVP  
Krista LaPerle, DVM, PhD, DACVP

2:00 p.m.-2:30 p.m.  
Clinical Pathology  
Rose E. Raskin, DVM, PhD, MRCVS, DACVP  
Purdue University, West Lafayette, IN

2:30 p.m.-3:00 p.m.  
Pillars of Pathology: Diagnostic Pathology  
M. Grant Maxie, DVM, PhD, DACVP  
University of Guelph, Guelph, Ontario, Canada

3:00 p.m.-3:30 p.m.  
Zoo & Wildlife Pathology  
Linda J. Lowenstine, DVM, PhD, DACVP  
University of California, Davis, Davis, CA

3:30 p.m.-4:00 p.m.  
Pillars of Pathology: Lab Animal & Toxicologic Pathology  
Jerrold M. Ward, DVM, PhD, DACVP  
Global VetPathology, Montgomery Village, MD

3:45 p.m.-5:15 p.m.

**ASVCP Education Forum for Discussion: Teaching Practical QA/QC to Clinical Pathology Residents**

Session Chairs: Ashleigh W. Newman, VMD, DACVP  
Cornell University College of Veterinary Medicine, Ithaca, NY

Austin K. Viall, DVM, DACVP  
Iowa State University, Ames, IA

4:00 p.m.-5:15 p.m.

**Veterinary Student and Resident Forum**

5:15 p.m.-6:45 p.m.

**ASVCP Reception**

6:00 p.m.-7:30 p.m.

**ACVP New Diplomates Reception**

7:00 p.m.-8:00 p.m.

**ASVCP Team Jeopardy: Clinical Pathologist and Resident Meet and Greet**

7:00 p.m.-9:00 p.m.

**Mystery Slide Review Session**

Session Chairs: Tanya LeRoith, DVM, PhD, DACVP  
Virginia Tech, Blacksburg, VA  
Gary Conboy, BSc, DVM, PhD  
Atlantic Veterinary College, Prince Edward Island, Canada  
Francisco R. Carvallo, MV, DSc, DACVP  
CAHFS, San Bernardino, CA

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**Tuesday, November 12, 2019**

6:30 a.m.-7:30 a.m.

**Yoga Flow for the Necropsy Floor<sup>new</sup>**

Katherine Gibson-Corley, DVM, PhD, DACVP

7:30 a.m.-5:00 p.m.

**Registration and Information Desk**

8:00 a.m.-12:00 noon

**Mini-Symposium II: Challenges of Animal Models**

Session Chairs: Mark J. Hoenerhoff, DVM, PhD, FIATP, DACVP  
University of Michigan Medical School, Ann Arbor, MI  
David K. Meyerholz, DVM, PhD, DACVM, DACVP  
University of Iowa Carver College of Medicine, Iowa City, IA

Genetically engineered animal models are powerful tools utilized in biomedical research. However, a good understanding of the utility and limitations of these models is necessary in order to ensure proper interpretation, experimental rigor, and reproducibility. The veterinary pathologist plays a critical role in their proper use and interpretation, and should be included as an important member of any team utilizing these models. Although the use of genetically engineered animal models is widespread in research and have advanced the understanding of human disease, knowledge of appropriate model selection, various factors that influence interpretation, and an appreciation of the limitations of these models is important in their effectiveness and utility. In this session, we provide information on the common techniques of genetic manipulation, considerations when choosing the most appropriate model, common factors influencing interpretation of these models, and the pathologist's role in working with the investigator to establish optimal conditions for pathology endpoints when using these models. Examples of common pitfalls where the expertise of a pathologist would have prevented misinterpretation of these models will also be provided.

8:00 a.m.-8:30 a.m.

Opportunities and Latent Limitations of Gene Editing Techniques  
David K. Meyerholz, DVM, PhD, DACVM, DACVP  
University of Iowa Carver College of Medicine, Iowa City, IA

8:30 a.m.-9:00 a.m.

Choosing the Most Appropriate Models: Considerations When Studying Human Disease  
Amanda Beck, DVM, DACVP  
Albert Einstein College of Medicine/Albert Einstein Cancer Center, Bronx, NY

9:00 a.m.-9:30 a.m.  
Common Factors (Gender, Strain, Age, Species) that Affect Interpretation  
Cory Brayton, DVM, DACLAM, DACVP  
Johns Hopkins University, School of Medicine, Baltimore, MD

9:30 a.m.-10:00 a.m.  
Refreshment Break

10:00 a.m.-10:30 a.m.  
Common Factors continued

10:30 a.m.-11:15 a.m.  
Communication, Education, Interpretation: Putting it All Together  
Mark J. Hoenerhoff, DVM, PhD, FIATP, DACVP  
University of Michigan Medical School, Ann Arbor, MI

11:15 a.m.-12:00 noon  
Panel Discussion

8:00 a.m.-12:00 noon  
**Concurrent Session II:**  
**Emerging Technologies for Tissue Based Analysis**  
Session Chairs: Joshua Webster, DVM, PhD, DACVP  
Genentech, Daly City, CA  
Christiane V. Löhner, DrMedVet, DVM, PhD, DACVP  
Oregon State University, Corvallis, OR

Although traditional tools of pathology including gross examination, hematoxylin and eosin-based histopathologic interpretation, and immunohistochemistry are fundamental to a pathologist's daily work, the field of pathology is increasingly impacted by a multitude of new technologies. While digital pathology, whole-slide imaging, and image analysis have been applied across many sub-disciplines of veterinary pathology, and are becoming increasingly fundamental in many pathology workflows, additional imaging technologies that will impact pathologists in the future are emerging. While classical pathology approaches will not be replaced, it is important for pathologists to be aware of and engaged in these developing tissue imaging technologies. This session will include three speakers that will each provide unique perspectives on cutting edge technologies and/or adoption of these technologies including mass spectrometry based tissue imaging, cleared tissue histology with multiphoton microscopy, and advances in novel microscopy technologies. The fourth speaker will discuss adoption of novel technologies in research pathology.

8:00 a.m.-8:55 a.m.  
New Techniques in Tissue Imaging  
Meredith S. Sagolla, PhD  
Genentech, South San Francisco, CA

8:55 a.m.-9:45 a.m.  
CHiMP - Practical, High Quality, Direct to Digital Histology  
Richard Torres, MS, MD  
Yale School of Medicine, New Haven, CT

9:45 a.m.-10:15 a.m.  
Refreshment Break

10:15 a.m.-11:10 a.m.  
Mass Spectrometry Imaging: A Review of Methodology and Potential Applications of this Emerging Technology in Pathology  
Rajanikanth Maganti, BVSc, PhD, DACVP  
Moderna, Inc., Cambridge, MA

11:10 a.m.-12:00 noon  
Navigating the Promise and Perils of New Technology for Tissue-Based Analysis  
Lauri Diehl, DVM, PhD, DACVP  
Gilead, Foster City, CA

8:00 a.m.-12:00 noon  
**Clinical Pathology Focused Scientific Session II**  
Session Chair: Amy L. Warren, BVSc, PhD, DACVP

Invited Speaker  
International Reference Preparations for Protein Biomarker Development for Species Specific Assays  
David Eckersall, BSc, MBA, PhD  
University of Glasgow, Glasgow, United Kingdom of Great Britain and Northern Ireland

8:00 a.m.-12:00 noon  
**Education Focused Scientific Session**  
Session Chair: Mee-Ja Sula, DVM, DACVP  
University of Tennessee, Knoxville, TN

8:05 a.m.-9:30 a.m.  
Wellbeing in the Workplace: Identifying and Responding to Mental Health Needs  
Stephanie W. Johnson, BA, MSW, LCSW  
Louisiana State University, Baton Rouge, LA

9:30 a.m.-10:00 a.m.  
Refreshment Break

10:00 a.m.-11:30 a.m.  
Individual Wellbeing: Identifying and Responding to Your Own Needs  
Stephanie W. Johnson, BA, MSW, LCSW

11:30 a.m.-12:00 noon  
Questions and Discussion

9:00 a.m.-5:00 p.m.  
**Career Center**

9:30 a.m.-3:30 p.m.  
**Focused Scientific Poster Session C<sup>new</sup>** (authors present for discussion at the refreshment breaks)

10:00 a.m.-10:30 a.m.  
**Clinical Pathology and Education Focused Scientific Poster Session** (authors present for discussion and questions)

12:15 p.m.-1:15 p.m.  
**ACVP Training Program Network Luncheon**

1:30 p.m.-5:00 p.m.  
**ASVCP Mystery Slide Case Session**  
Session Chair: Sharon M. Dial, DVM, PhD, DACVP

1:30 p.m.-5:00 p.m.  
**Concurrent Session III**  
**An Overview of Contemporary Topics on Chagas Disease in Wildlife, Domestic and Laboratory Animals**  
Session Chairs: Gregory K. Wilkerson, DVM, PhD, DACVP  
MD Anderson Cancer Center, Houston, TX  
Carolyn L. Hodo, DVM, DACVP  
Texas A&M University, College Station, TX



This half-day session will present an overview of *Trypanosoma cruzi* biology and will review contemporary information related to Chagas disease in domestic and laboratory animal species. The session will begin with talks on the life cycle and basic biology of *T. cruzi*, methods of diagnosis and strain differentiation, the epidemiology of Chagas disease in U.S. wildlife and domestic species and will discuss the zoonotic relevance of Chagas disease to their human owners. After the break, the session will include talks addressing the challenges of Chagas-related research, animal models commonly utilized in research, and Chagas pathology and epidemiology in naturally-infected and experimentally-infected nonhuman primates. The goal of this session is to provide a contemporary overview as to the importance of Chagas disease and Chagas disease research in the United States.

1:30 p.m.-2:10 p.m.

Brief Review of *Trypanosoma Cruzi* Biology and a Contemporary Overview of Chagas Epidemiology in Domestic Species Within the United States and the Zoonotic Relevance to Animal Owners

Sarah A. Hamer, PhD, DVM, DACVPM  
Texas A&M University, College Station, TX

2:10 p.m.-3:00 p.m.

Contemporary Review of Chagas Disease Diagnoses Methods and Strain Typing and an Overview of Chagas Disease Epidemiology of Specific Wildlife Populations Within the United States

Carolyn L. Hodo, DVM, PhD, DACVP  
Texas A&M University, College Station, TX

3:00 p.m.-3:30 p.m.

Refreshment Break

3:30 p.m.-4:10 p.m.

Chagas Disease in Captive Nonhuman Primate Populations: Pathology, Epidemiology, and Diagnostic Challenges

Gregory K. Wilkerson, DVM, PhD, DACVP  
MD Anderson Cancer Center, Bastrop, TX

4:10 p.m.-5:00 p.m.

The Current State and Challenges of Animal-Model Based Chagas Disease Research

Rick L. Tarleton, PhD  
University of Georgia, Athens, GA

1:30 p.m.-5:00 p.m.

### **Diagnostic Pathology Focused Scientific Session II**

Session Chair: Aline Rodrigues Hoffmann, DVM, PhD, DACVP

1:30 p.m.-5:00 p.m.

### **Combined Experimental Disease and Industrial & Toxicologic Pathology Focused Scientific Session<sup>new</sup>**

Session Chairs: Oded Foreman, DVM, DACVP  
Katherine A. Knostman, DVM, PhD, DACVP

Invited Speakers

Hydrogen Sulfide-induced Neurotoxicity  
Elizabeth McRae Whitley, DVM, PhD, DACVP  
MD Anderson Cancer Center, Houston, TX

Circulating MicroRNAs as Biomarkers of Canine Cancer

Geoffrey A. Wood, DVM, PhD, DVSc  
Ontario Veterinary College, University of Guelph, Guelph, Ontario, Canada

3:00 p.m.-3:30 p.m.

### **Diagnostic Pathology, Experimental Disease, and Industrial and Toxicologic Pathology Focused Scientific Poster Session**

(authors present for discussion and questions)

5:15 p.m.-6:45 p.m.

### **ACVP Awards and Recognition Event**

7:00 p.m.-9:30 p.m.

### **ACVP President's Reception**

## **Wednesday, November 13, 2019**

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6:30 a.m.-7:15 a.m.

### **Yoga for Relaxation<sup>new</sup>**

Katherine Gibson-Corley, DVM, PhD, DACVP

8:00 a.m.-1:00 p.m.

### **Registration and Information Desk**

8:00 a.m.-12:00 noon

### **Concurrent Session IV:**

#### **One Liver Health: Comparative Hepatic Pathobiology**

Session Chairs: Chandra Saravanan, DVM, MS, PhD, DACVP  
Novartis Institutes for Biomedical Research, Cambridge, MA

Arlin B. Rogers, DVM, PhD, DACVP

Alnylam Pharmaceuticals, Cambridge, MA

This session brings a One Health approach to the liver. Topics covered include animal models of nonalcoholic steatohepatitis (NASH), scoring and translating experimental NASH data to humans, how sexual bias in human liver disease is replicated in rodents, domestic animal liver diseases with close human counterparts, and nonhuman primate model contributions to the intervention of chronic viral hepatitis.

8:00 a.m.-8:40 a.m.

Humanized Mouse Models

Karl-Dimiter Bissig, MD, PhD

Baylor College of Medicine, Houston, TX

8:40 a.m.-9:20 a.m.

Translational Aspects of NAFLD/NASH Models: A Pathologist's Perspective

Chandra Saravanan, DVM, PhD, DACVP

Novartis Institutes for Biomedical Research, Cambridge, MA

9:20 a.m.-10:00 a.m.

Pathology of Proliferative Liver Lesions in Rodent Models and Their Relevance to Humans

Bhanu P. Singh BVSc, MS, DABT, FIATP, DACVP

Johnson & Johnson Pharmaceutical Research & Development, Philadelphia, PA

10:00 a.m.-10:30 a.m.

Refreshment Break

10:30 a.m.-11:10 a.m.

Most Human Liver Diseases Show a Sex Bias: Why?

Arlin B. Rogers, DVM, PhD, DACVP

Alnylam Pharmaceuticals, Cambridge, MA

11:10 a.m.-11:50 a.m.

Domestic Animal Liver Diseases With Human Correlates

John Cullen, VMD, PhD, FIATP, DACVP

North Carolina State College of Veterinary Medicine, Raleigh, NC

11:50 a.m.-12:00 noon  
Questions and Discussion

8:00 a.m.-12:00 noon

**Concurrent Session V:**

***A Timely Update on Transboundary Animal Diseases***

Session Chairs: A. Sally Davis, DVM, PhD  
Kansas State University, Manhattan, KS  
Angela Arenas Gamboa, DVM, PhD, DACVP  
Texas A&M University, College Station, TX

We will focus on emerging transboundary animal diseases, particularly in larger production animals, including pigs, small and large ruminants. Both bacterial and viral pathogens, some vector-borne diseases, will be included. Specific diseases will include foot and mouth disease, seneca virus disease, Rift Valley fever and brucellosis. While invited talks will all focus on pathology of these diseases, the talks may also cover current understanding of the mechanisms of disease pathogenesis, epidemiology, diagnostics, control, vaccine and therapy status as well as obstacles to disease management in endemic countries. Look-a-like diseases will be discussed. Since we will also solicit cases for short talks, the full scope in terms of diseases to be discussed is yet to be determined.

8:00 a.m.-8:40 a.m.  
Senecavirus A and FMD: The New Normal for Differential Diagnosis of Vesicular Disease In Pigs  
Fabio Vennucci, DVM, PhD, DBAVP  
University of Minnesota, Minneapolis, MN

8:40 a.m.-9:20 a.m.  
Brucellosis: A Neglected or Emerging Disease?  
Angela M. Arenas Gamboa, DVM, PhD, DACVP  
Texas A&M University, College Station, TX

9:20 a.m.-10:00 a.m.  
Rift Valley Fever Virus: A Category A Enigma  
A. Sally Davis, DVM, PhD  
Kansas State University College of Veterinary Medicine,  
Manhattan, KS

10:00 a.m.-10:30 a.m.  
Refreshment Break

10:30 a.m.-11:10 a.m.  
Reproductive Infectious Diseases in Ruminants: What We Should Be Looking For  
John F. Edwards, DVM, PhD, DACVP  
Texas A&M University, College Station, TX

11:10 a.m.-12:00 noon  
Case Presentations

8:00 a.m.-12:00 noon

**Mini-Symposium III:**

***Select Topics in Veterinary Forensic Pathology***

Session Chairs: Sean P. McDonough, DVM, PhD, DACVP  
Cornell University, Ithaca, NY  
Beverly J. McEwen, DVM, MSc, PhD, DACVP  
University of Florida College of Medicine, Gainesville, FL

8:00 a.m.-8:50 a.m.  
Lessons Learned From the Goudge Commission on the Status of Service, Education and Research in Forensic Pathology  
Michael Pollanen, MD, PhD, FRCPATH, DMJ (PATH), FRCPC  
University of Toronto, Toronto, Ontario, Canada

8:55 a.m.-9:15 a.m.  
Case Study of a Gunshot Wound in a Dog  
Jason W. Brooks, VMD, PhD, DACVP  
Pennsylvania State University, University Park, PA

9:15 a.m.-10:00 a.m.  
Introduction to Crime Scene Investigation: What the Pathologist Needs to Know  
Jason Byrd  
William R. Maples Center for Forensic Medicine, Gainesville, FL

10:00 a.m.-10:15 a.m.  
Refreshment Break

10:15 a.m.-11:05 a.m.  
Duabert Standard for Expert Witness Testimony  
Shawn Porter  
Attorney

11:10 a.m.-12:00 noon.  
Standards for Forensic Pathology  
Hannah C. Jarvis, MBBS, AICSM BSc(Hons), MRCS(Eng), FCAP, FASCP  
Harris County Institute of Forensic Sciences

8:00 a.m.-12:00 noon  
**ACVP Young Investigator Award Poster Session**

12:00 noon  
Annual Meeting Concludes



San Antonio's Riverwalk - photo courtesy of Kids on a Plane



Spires of Downtown San Antonio - photo courtesy of Arpad Benedek