

American College of Veterinary Internal Medicine (ACVIM) Forum 2012

**New Orleans, Louisiana, USA
30 May - 2 June 2012**

Editors:

Dianne McFarlane

Rance Sellon

ISBN: 978-1-62276-153-1

Printed from e-media with permission by:

Curran Associates, Inc.
57 Morehouse Lane
Red Hook, NY 12571



Some format issues inherent in the e-media version may also appear in this print version.

Copyright© (2012) by the American College of Veterinary Internal Medicine
All rights reserved.

Printed by Curran Associates, Inc. (2012)

For permission requests, please contact the American College of Veterinary Internal Medicine
at the address below.

American College of Veterinary Internal Medicine
1997 Wadsworth Boulevard Suite A
Lakewood CO 80214-5293

Phone: (800) 245-9081
Fax: (303) 231-0880

acvim@acvim.org

Additional copies of this publication are available from:

Curran Associates, Inc.
57 Morehouse Lane
Red Hook, NY 12571 USA
Phone: 845-758-0400
Fax: 845-758-2634
Email: curran@proceedings.com
Web: www.proceedings.com

ACVIM Specialty Symposium (Pre-Forum) Proceedings

Cardiology

Session#	Title / Author	Page#
PFC01	Molecular Genetic Research in Dogs from a Veterinary Cardiologist's Perspective Jens Haggstrom, DVM, PhD, DECVIM-CA (Cardiology)	1
PFC02	Interpretation and Use of Genetic Testing for Cardiac Disease Kathryn Meurs, DVM, PhD	4
PFC03	Veterinary Cardiology History James Buchanan, DVM, MMedSci, DACVIM	6
PFC04	Therapeutic Gene Delivery: How Close is It to Prime Time? Margaret Sleeper, VMD, DACVIM (Cardiology)	8
PFC06	Assessment of Systolic Function John Bonagura, DVM, DACVIM	10
PFC07	Feline Hypertrophic Cardiomyopathy: Screens and Genes Mark Kittleson, DVM, PhD, DACVIM (Cardiology)	14
PFC08	Tissue Engineered Canine Mitral Valves: Value in Valve Disease Research Brendan Corcoran, MVB, DPharm, PhD, MRCVS	18
PFC09	Canine Adult Stem Cells: Their Biology and Therapeutic Potential in Heart Disease Hannah Hodgkiss-Geere, BVM&S, MSc, MRCVS	21

Neurology

Session#	Title / Author	Page#
PFN01	Stereotactic Radiosurgery for Brain Tumors: Clinical Trial Update	25

Michael Kent, DACVIM

PFN04	UGA Brain Tumor Trial	27
	Simon Platt, BVM&S, MRCVS, DACVIM (Neurology), DECVN	

PFN05	TOCA-511 Gene Therapy Clinical Trial Update	29
	Peter Dickinson, BVSc, PhD, DACVIM (Neurology)	

Oncology

Session#	Title / Author	Page#
PFO01	PET Imaging in Veterinary Medicine: Oncology and Beyond Amy LeBlanc, DVM, DACVIM (Oncology)	32
PFO02	Advanced MRI for Cancer Diagnosis, Staging and Evaluation of Treatment Response Susan Kraft, DVM, PhD, DACVR, DACVR-RO	35
PFO05	Methods for Diagnosis and Prognosis in Canine Lymphoma and Leukemia Anne Avery, VMD, PhD	38
PFO07	Cytology Review for Diplomates and Candidates Anne Barger, DVM, MS, DACVP	41

Large Animal Internal Medicine - Equine

Session#	Title / Author	Page#
PFL04	Havemeyer Highlights: Focus on EHV-1 Workshop Paul Lunn, BVSc, MS, PhD, MRCVS, DACVIM (LAIM)	43

Large Animal Internal Medicine - Food Animal

Session#	Title / Author	Page#
PFL08	Resident Training: Clinical Experiences Outside of the Teaching Hospital Sebastien Buczinski, DACVIM	44

PFL09	Zoonotic Diseases: Case Scenarios	47
	David Van Metre, DVM, DACVIM (LAIM)	

Small Animal Internal Medicine

Session#	Title / Author	Page#
PFS01a	Mesenchymal Stem Cells for Immunotherapy: Nature's Alternative to Steroids Steven Dow, DVM, PhD, DACVIM (SAIM)	50
PFS01b	Monocytes Rediscovered: Their Critical Role in Cancer and Infection Steven Dow, DVM, PhD, DACVIM (SAIM)	53
PFS03a	SOTA: Mouse Models to Study Normal and Malignant Hematopoiesis Daniel Lacorazza, PhD	56
PFS03b	SOTA: Differentiation of Effector and Memory T Cells upon Immune Response Daniel Lacorazza, PhD	59
PFS04a	Human Intravenous Immunoglobulin: Current Indications in Small Animal Medicine Domenico Bianco, DACVIM	62
PFS04b	All Creatures, Great and Small: A Review of Regulatory T-Cells in Mice, Humans, Dogs and Other Domestic Species Oliver Garden, DACVIM	65
PFS05a	Oncology Reviews: Current Controversies in Canine Mast Cell Tumors Laura Garrett, DVM, DACVIM (Oncology)	69
PFS05b	Diagnostic Utility of Immunocytochemistry and Cytochemistry for Clinical Cytology Anne Barger, DVM, MS, DACVP	73
PFS06a	Neurology Reviews: Epilepsy 101 for Internists Michael Podell, MSc, DVM, DACVIM (Neurology)	76
PFS06b	Advanced Treatment Options for Epilepsy Michael Podell, MSc, DVM, DACVIM (Neurology)	80
PFS07a	Cardiology Reviews: Diagnosis, Prognosis and Risk Stratification of Heart Disease Using NT-proBNP Assay	84

Mark Oyama, DVM, DACVIM (Cardiology)

PFS07b	Rational Use of Pimobendan: What Uses are Evidence-Supported?	85
--------	--	-----------

John MacGregor, DVM, DACVIM (Cardiology)

PFS08a	Turning a Clinical Question Into a Testable Hypothesis	86
--------	---	-----------

Lauren Trepanier, DVM, PhD, DACVIM, DACVCP

PFS08b	Fellowship Opportunities and Funding Sources for Internists	89
--------	--	-----------

Lauren Trepanier, DVM, PhD, DACVIM, DACVCP

PFS09a	Making a Contribution to Evidence-Based Medicine: How to Design a Study	92
--------	--	-----------

Mark Mitchell, DVM, MS, PhD, DECZM (Herpetology)

PFS09b	Making a Contribution to Evidence-Based Medicine: How to Analyze a Study	93
--------	---	-----------

Mark Mitchell, DVM, MS, PhD, DECZM (Herpetology)

Veterinary Scientific Program Proceedings

AAEP

Session#	Title / Author	Page#
250	Movement Disorders in Horses: Shivers, Stringhalt and Other Conundrums Stephanie Valberg, DVM PhD DACVIM (LAIM), ACVSMR	95
251	Genetic and Nutritional Aspects of Equine Neuroaxonal Dystrophy Carrie Finno, BSc, DVM, DACVIM (LAIM)	98
252	Immunity to Sarcocystis Neurona Sharon Witonsky, DACVIM (LAIM)	101
253	Gastric Ulcers in Horses: Pathophysiology and Diagnosis Frank Andrews, DVM, MS, DACVIM (LAIM)	103

AAVN/ACVN

Session#	Title / Author	Page#
190	Intralipid Therapy: From Nutrition to Antidote Daniel Chan, DVM, DACVECC, DACVN, FHEA, MRCVS	106
192	Dietary Isoflavones and their Biological Effects Nick Cave, BVSc, MVSc, PhD, DACVN	108
194	Equine Metabolic Syndrome - Nutritional Management Raymond Geor, BVSc, PhD, DACVIM (LAIM)	111
195	Metabonomic Studies: Potential for Identification and Prevention of OCD in Foals Sarah Ralston, VMD, PhD, DACVN	114
196	Forage-Based Total Mixed Rations: An Economic Alternative? Sarah Ralston, VMD, PhD, DACVN	117

197a	Anti-Inflammatory Drugs and EHV-1 Infection Lutz Goehring, DVM, MS, PhD, DACVIM (LAIM)	119
------	--	------------

AAVN/ACVN (Small Animal)

Session#	Title / Author	Page#
191	The "Human Factor" to Feeding Pets Nick Cave, BVSc, MVSc, PhD, DACVN	120
193	Equine Metabolic Syndrome - New Insights on Pathophysiology Raymond Geor, BVSc, PhD, DACVIM (LAIM)	123

ABVP

Session#	Title / Author	Page#
230	Drug Induced Liver Injury in Dogs Cynthia Webster, DVM, DACVIM	126
232	Diagnostic and Managerial Pearls for Selected Hepatobiliary Disorders Sharon Center, DVM, DACVIM	129
233	Controversies in the Management of Ureteroliths in Cats Larry Adams, DVM, PhD, DACVIM (SAIM)	135

ACVCP/AAVPT

Session#	Title / Author	Page#
19	The Challenges of Empirical Antimicrobial Therapy: A Focus on UTI and Pyoderma Mark Papich, DVM, MS, DACVCP	138
20	Antimicrobial Use Guideliens: Treatment of UTI Dawn Boothe, DVM, PhD, DACVIM, DACVCP	141
21	Antimicrobial Therapy of Superficial Bacterial Folliculitis in Dogs	145

David Lloyd, PhD, BVetMed, FRCVS, DECVD

47	T-Cell Targets for Immune Modulation Steven Dow, DVM, PhD, DACVIM (SAIM)	148
48	Probiotics: Influencing the Immune Response "Naturally" J. Scott Weese, DVM, DVSc, DACVIM (LAIM)	151
49	The Role of Cyclosporin in Immunomodulation Todd Archer, DVM	154
50	Non-Glucocorticoid Immunomodulators Clare Gregory, DVM, DACVS	157

ACVIM Business Management

Session#	Title / Author	Page#
210	Hiring Winners: Emotional Intelligence-Based Hiring Shawn McVey, MA, MSW	161
211	Managing Change and Growth: Key Performance Indicators Shawn McVey, MA, MSW	164
212	Managing in an Economic Downturn Shawn McVey, MA, MSW	166
213	Pulmonary Hypertension: Physiology and Diagnosis Heidi Kellihan, DVM, DACVIM (Cardiology)	168
262	E-mail Communication with Your Clients and Colleagues: The Good, the Bad, and the Ugly Nancy Kay, DVM, DACVIM (SAIM)	170
263	Systematizing the Money Talk to Clients Peter Weinstein, DVM, MBA	172
264	How Transparent Communication can Help the Bottom Line Peter Weinstein, DVM, MBA	175

ACVIM Cardiology

Session#	Title / Author	Page#
1	Myxomatous Mitral Valve Disease in Dogs Lisbeth Olsen, DVM, DrVetSci	178
2	Controversies in Mitral Valve Disease in Dogs Jens Haggstrom, DVM Ingrid Ljungvall, DVM	181
3	Predicting First Onset of Congestive Heart Failure in Dogs with Mitral Valve Disease Mark Oyama, DVM, DACVIM (Cardiology)	184
31	Transcatheter Mitral Valve Implantation (TMVI) for Dogs E. Orton, DVM, PhD, DACVS	185
32	Diuretic Resistance in Dogs Treated for Heart Failure Mark Oyama, DVM, DACVIM (Cardiology)	188
33	Real-Time Three-Dimensional Echocardiography: From Diagnosis to Intervention Joao Orvalho, DACVIM	189
34	Auscultation of Murmurs in the Dog and Cat: How Color Flow Mapping IMproves Our Understanding Gerard Le Bobinnec, DVM, DECVIM (Cardiology)	191
89a	The Action of a New Prototype Cardiotonic Drug (LASSBio 294) on the Cardiovascular System of Dogs Rosangela Alves	193
89b	Prognostic Indicators in Feline Hypertrophgic Cardiomyopathy Jessie Payne, PhD	194
90a	Efficacy of Bay 41-9202 (Bisoprolol Oral Solution) for the Treatment of Chronic Valvular Heart Disease (CVHD) in Dogs. Bruce Keene, DVM, MSc, DACVIM (Cardiology)	195
90b	Pimobendan Improves Survival in Doberman Pinscher's with Preclinical DCM: The Results of Protect a Double-Blind, Placebo-Controlled, Randomized Clinical Trial Adrian Boswood, MA, VetMB, MRCVS, DVC	196
153a	Longitudinal Strain and Strain Rate by Two-Dimensional Speckle Tracking in Felines Ruthnea Muzzi, MV, Msc, Dcs, Pós-Doutora	197

153b	Vp on Diastolic Function in Dogs Ruthnea Muzzi, MV, Msc, Dcs, Pós-Doutora	198
154a	Hemodynamic & Biochemical Alterations in Canine Lymphoma Deborah Fine, DVM, MS, DACVIM (Cardiology)	199
154b	Cardiologists' Treatment of Canine Tachyarrhythmias John MacGregor, DVM, DACVIM (Cardiology)	200
155a	Microcirculatory Imagine: A New Frontier in Hemodynamic Monitoring Edward Cooper, VMD, MS, DACVECC	201
155b	Aldosterone-Breakthrough with ACE-I in Experimental RAAS-Activation Clarke Atkins, DVM, DACVIM (SAIM, Cardiology)	202
156a	Utility of Flecainide for the Treatment of Ventricular Arrhythmias Gerard Le Bobinnec, DVM, DECVIM (Cardiology)	203
156b	BP, HR and Catecholamines in Genotyped Healthy Dogs in a Clinical Situation Katja Hoglund	204
157	Pimobendan Vs. Benazepril Vs. Metildigoxin in Irish Wolfhounds with Preclinical DCM or AF Andrea Vollmar, Dr.med.vet., DECVIM (Cardiology)	205
158	Controversies and Dilemmas in Management of Canine Heartworm Infection Clarke Atkins, DVM, DACVIM (SAIM, Cardiology)	207
159	Echocardiographic Assessment of RV Function in 150 Dogs with Pulmonic Stenosis Brian Scansen, DVM, MS, DACVIM (Cardiology)	210
160	Cardiology Mythbusters: Dispelling Diagnostic Dogma in Veterinary Cardiology Mark Rishniw, BVSc, MS, PhD, DACVIM (Cardiology & SAIM)	213
214	Clinical Application of Pulmonary Hypertension Diagnosis and Treatment Heidi Kellihan, DVM, DACVIM (Cardiology)	216
215	Pathophysiology of Dilated Cardiomyopathy Michael O'Grady, DACVIM (Cardiology)	217
216	Treatment of Dilated Cardiomyopathy Lynne O'Sullivan, DACVIM	220

217a	Cervical Disc Arthroplasty in 12 Dogs Affected by Disc Associated Wobbler Syndrome. Preliminary Results.	223
	Filippo Adamo, DVM, DECVN	

ACVIM Large Animal Internal Medicine - Equine

Session#	Title / Author	Page#
22	The Role of Platelets in Equine Inflammation and Immunity Bettina Dunkel, DVM, PhD, DACVIM, DACVECC, MRCVS	224
23	Current Recommendations Regarding the Use of Corticosteroids in Septic Foals Kelsey Hart, DVM, DACVIM (LAIM)	228
24	Regulation of Glucose Transport in Insulin-Sensitive Tissue: From Health to Disease Veronique Lacombe, DVM, PhD, DACVIM (LAIM), DECEIM	232
55	Physiological Responses of the Horse to Exercise - Causes of Poor Performance Kenneth Hinchcliff, BVSc, PhD, DACVIM (LAIM)	235
56	Field Exercise Testing of Horses - Clinical Applications Emmanuelle van Erck, DVM, PhD, DECEIM	238
57	Cardio-Respiratory Causes of Poor Performance Emmanuelle van Erck, DVM, PhD, DECEIM	241
58	Muscular Causes of Poor Performance in Athletic Horses Erica McKenzie, BSc, BVMS, PhD, DACVIM (LAIM)	245
83	Detection of <i>S. equi</i> in Wash Samples and SeM Titers Post Strangles Outbreaks Ashley Boyle, DACVIM	248
84	Methicillin-Resistant <i>Staphylococcus Aureus</i> (MRSA) in Horses J. Scott Weese, DVM, DVSc, DACVIM (LAIM)	250
85a	Comparison of Plasma ACTH Concentration, Plasma β-MSH Concentration, and Overnight Dexamethasone Suppression Test for Diagnosis of PPID Dianne McFarlane, DVM, PhD, DACVIM (LAIM)	253
85b	Efficacy of Prascint for Treatment of PPID	254

Harold Schott, DVM, PhD, DACVIM (LAIM)

86a	Biochemistry, Morphometrics and Breed Comparisons Molly McCue, DACVIM	255
86b	Dietary Impact on Phenotypic Measurements Raymond Geor, BVSc, PhD, DACVIM (LAIM)	256
137	SOTA: The HPA Axis and the Stress Response Paul Marik, MD, FCP(SA), FRCP(C), FCCP, FCCM, FACP	B#5
138	SOTA: Critical Illness Related Corticosteroid Insufficiency; Diagnosis and Management Paul Marik, MD, FCP(SA), FRCP(C), FCCP, FCCM, FACP	257
139a	Endotoxemia as a Predisposition for Laminitis Elizabeth Tadros	261
139b	Comparison of Endocardiographic Measurements in Elite and Non-Elite Arabian Horses Mary Durando, DVM, PhD, DACVIM (LAIM)	262
140a	Factors Associated with Survival in 50 Horses with Potomac Horse Fever Sandra Taylor, DVM, PhD, DACVIM (LAIM)	263
140b	Mare-Associated Predictors of Passive Antibodies in Foals Christopher Riley, DACVS	264
141	Starling Forces in the Lung of Horses Modest Vengust, DVM, DACVIM (LAIM)	265
142	Equine Interstitial Lung Diseases: Clinical and Radiographic Assessment Bettina Dunkel, DVM, PhD, DACVIM, DACVECC, MRCVS	268
143	Upper and Lower Airway Inflammation in Horses: Endoscopic Scoring, Diagnosis and Treatment Renaud Leguillette, DMV, MSc, PhD, DACVIM (LAIM)	271
144	Thoractomy for Persistent Pleural Abscesses Associated with Equine Pleuropneumonia Morgan Chaffin, DVM, MS, DACVIM	275
197b	Weight Gain in Hospitalized Foals Guy Lester, BSc (Hons) BVMS PhD DACVIM (LAIM)	277
198a	Evaluation of Employment Opportunities, Career Satisfaction, and Financial Compensation of Recently-Boarded ACVIM -LAIM Diplomates	278

Sarah Reuss, VMd, DACVIM (LAIM)

198b	Sodium Bicarbonate Administration Exacerbates Post Exercise Hypokalemia in Standardbreds Undergoing a Simulated Race Protocol Stacy Tinkler, DACVIM	279
199a	Effects of Hyperbarbic Oxygen Therapy in Horses Renaud Leguillette, DMV, MSc, PhD, DACVIM (LAIM)	280
199b	Is Metformin Useful in EMS Cases? Andy Durham, DECEIM, DRCVS	281
200a	Digital Hypothermia Applied After the Onset of Lameness Prevents Lamellar Failure in the Oligofructose Laminitis Model Andrew van Eps, BVSc, PhD, MACVSc, DACVIM (LAIM)	282
200b	Emergence of Widespread Macrolide and Rifampin Resistance in Rhodococcus Equi Isolates from a Horse Breeding Farm Steeve Giguere, DVM, PhD, DACVIM (LAIM)	283
201	What's New in Gastrointestinal Surgery? Sylvain Nichols, DMV, MS, DACVS	284
254	Gastric Ulcers in Horses: Pharmacologic and Management Strategies Frank Andrews, DVM, MS, DACVIM (LAIM)	286
255	Equine Glandular Ulceration: Epidemiology and Pathophysiology Richard Hepburn, BVSc MS(Hons) CertEM(IntMed) DACVIM (LAIM) MRCVS RCVS MRCVS	289
256	Equine Glandular Ulceration: Comparative Aspects and Management Richard Hepburn, BVSc MS(Hons) CertEM(IntMed) DACVIM (LAIM) MRCVS RCVS MRCVS	292

ACVIM Large Animal Internal Medicine - Food Animal

Session#	Title / Author	Page#
26	Welfare Issues in Beef and Dairy Cattle (Beef Cattle Emphasis) Jan Shearer, DVM, MS	295
27	Proper Euthanasia Methods Jan Shearer, DVM, MS	299
28	Arthropod Borne Food Animal Diseases David McVey, DVM, PhD, DACVM	302

29	Bovine Anaplasmosis: An Overview of Current Challenges Katherine Kocan, PhD	305
30	Update on the Diagnosis and Treatment of Bovine Anaplasmosis Johann (Hans) Coetzee, BVSc, Cert CHP, PhD, MRCVS, DACVCP	309
87	SOTA: Anthelmintic Resistance in Small Ruminants Thomas Craig, DVM, MS, PhD	311
88	SOTA: Control of Helminth Parasites in Cow Calf Operations Thomas Craig, DVM, MS, PhD	313
145a	Epidemiology of Blue Tongue Virus Infection Among California Ruminants Christie Mayo	316
145b	Salmonella Typhimurium Genetics During Intestinal Inflammation Johanna Elfenbein, DACVIM (LAIM)	320
146a	Mastitis, Biofilms, and Bioluminescent Streptococcus Uberis Maria Prado, MV PhD DACVIM (LAIM)	321
146b	Antibody Titers in Calves Fed Colostrum or a Replacer Manuel Chamorro, DACVIM	322
147a	Enterocyte Response to Cryptosporidium Parvum Derek Foster, DVM, MS, DACVIM (LAIM)	323
147b	Evaluation of Environmental Samples to Predict Mycobacterium Avium Subsp. Paratuberculosis Prevalence in Quebec Dairy Herds Elizabeth Dore, DACVIM	324
148a	Study of Metabolism in Pregnant and Postpartem Ovine Stacey Byers, DVM, MS, DACVIM (LAIM)	325
148b	The Diagnostic Criteria Used in Bovine Bacterial Endocarditis: A Meta-Analysis Of 460 Published Cases from 1973 to 2011 Sebastien Buczinski, DACVIM	326
149	Diagnosing BRD: Have we Gotten any Better Over the Years? Joanne Hewson, DVM, PhD, DACVIM (LAIM)	327
150	PK-PD Integration and Modeling for Antimicrobials Used in the Management of BRD Tim Potter, BVetMed, PhD, MRCVS	330

151	Efficacy of Vaccinating Cattle Against Bovine Viral Diarrhea Virus Paul Walz, DVM, MS, PhD, DACVIM (LAIM)	333
152	BVD Virus in Wildlife and Domestic Species Other than Cattle Thomas Passler, DACVIM	336
202	Complicated or Challenging Umbilical Surgery in Calves Sylvain Nichols, DMV, MS, DACVS	339
203	Idiopathic Hemorrhagic Pericardial Effusion Simon Peek, BVSc, PhD, DACVIM	342
204	Novel Strategies for the Prevention of Johnne's Disease in Cattle Marie-Eve Fecteau, DACVIM	344
205	Anthelmintic Resistance and Application of FAMACHA in Camelids Lisa Williamson, DVM, MS, DACVIM	346
206	Coccidiosis in New World Camelids Christopher Cebra, VMD, MA, MS, DACVIM	349
207	Camelid Disease of Public Significance Christopher Cebra, VMD, MA, MS, DACVIM	352
208	Evaluating and Managing the Neurologic or Recumbent Camelid Erica McKenzie, BSc, BVMS, PhD. DACVIM (LAIM)	354
209	Money & Medicine Shawn McVey, MA, MSW	358
257	Issues in Antimicrobial Resistance Morgan Scott, DVM, PhD	360
258	Disaster Preparedness for Food Animal Practitioners and Producers Christine Navarre, DVM, MS, DACVIM (LAIM)	363
259	The Best Papers of 2011 Allen Roussel, DVM, MS, DACVIM (LAIM)	366
260	The Other Best Papers of 2011 Gilles Fecteau, DVM, DACVIM (LAIM)	36*
261	Transforming Your Clients' Internet Research into a Win-Win Situation Nancy Kay, DVM, DACVIM (SAIM)	370

ACVIM Neurology

Session#	Title / Author	Page#
4	Surgical Management of Congenital Brain and Cervical Spine Disorders in Dogs Sofia Cerda-Gonzalez, DVM, DACVIM (Neurology)	371
5	Comparison of Cervical Spondylotic Myelopathy in People and Cervical Spondylomyelopathy in Dogs Ronaldo da Costa, DMV, MSc, PhD, DACVIM (Neurology)	373
6	Critical Evaluation of Treatment Methods for Cervical Spondylomyelopathy Ronaldo da Costa, DMV, MSc, PhD, DACVIM (Neurology)	377
35	The NeuroMap: A Simple Guide to Localizing Neurological Lesions - Spinal Cord and Peripheral Nervous System Christine Thomson, DACVIM	381
36	The NeuroMap: A Simple Guide to Localizing Neurological Lesions - the Brain Map Christine Thomson, DACVIM	384
37	The Neurobiology of Music and the Healing Power of the Blues Charles Vite, DVM, PhD, DACVIM (Neurology)	387
38	Analgesia for Neurological Patients Phillip Lerche, BVSc, PhD, DACVA	389
93	Cognitive Dysfunction Syndrome: The Canine Version of Human Alzheimer's Disease Sofia Cerda-Gonzalez, DVM, DACVIM (Neurology)	392
94	Hereditary Cerebellar Ataxia Dennis O'Brien, DVM, PhD, DACVIM (Neurology)	394
96	Biomarker Development for Canine Degenerative Myelopathy Joan Coates, DVM, MS, DACVIM (Neurology)	397
161a	Genome-Wide Association Analysis Identifies a Mutation Associated with Alaskan Husky Encephalopathy Karen Vernau, DACVIM (Neurology)	400

Biological In-Situ Fusion Technique for Congenital Vertebral Anomalies in

161b	Brachycephalic Dogs Alireza Gorgi, DACVIM	401
162a	Pharmacokinetics of Midazolam After Intravenous, Rectal and Intramuscular Administration in Dogs Karen Munana, DACVIM (Neurology)	402
162b	18F-Fluorodeoxyglucose Uptake and Magnetic Resonance Imaging Findings in a Canine Model of Ischemic Stroke Using a High-Resolution Research Tomograph-Positron Emission Tomography and 7T-MR Fusion System Byeong-Teck Kang, DVM, PhD	403
163a	Diffusion Tensor Imaging in Dogs with Cervical Spondylomyelopathy Ronaldo da Costa, DMV, MSc, PhD, DACVIM (Neurology)	404
163b	Minimally Invasive Brain Biopsy in Canine Encephalitis Thomas Flegel, DACVIM	406
164a	Urination Control by Sacral Root Stimulator Nicolas Granger, DVM, MRCVS, DECVN	408
164b	Neuronal Cell Cultures for the Investigation of the Normal and Diseased Nervous System Christine Thomson, DACVIM	409
165	Stereotactic Brain Biopsy: Outcomes, Complications and Recommendations Peter Dickinson, BVSc, PhD, DACVIM (Neurology)	410
166	Structural Brain Pathology in Canine Primary Epilepsy: Does It Exist? Marjorie Milne, BVSc(Hons), FANZCVS(Radiology)	412
167	Advances in the Pathogenesis and Treatment of Spinal Cord Injury Nicolas Granger, DVM, MRCVS, DECVN	414
168	Intraoperative Ultrasound for Intracranial Surgery Andy Shores, DVM, MS, PhD, DACVIM(Neurology)	416
217b	Repeatability of a modified dorsal technique for Electronic Von Frey Anesthesiometry to Assess Sensory Threshold in Six Normal Dogs. Sarah Moore, DVM, DACVIM (Neurology)	417
218a	Validation of Neuropsychological Test Protocols for Cognitive Assessment of Senior Dogs and Cats Gary Landsberg, BSc, DVM, DACVB, DECVBM-CA	418
218b	Protein Disulphide Isomerase Colocalisation with Superoxide Dismutase	419

1 in Canine Degenerative Myelopathy: Evidence for Endoplasmic Reticulum Stress

Sam Long, BVSc, PhD, DECVN

219a	Evaluation of a Potential Candidate Gene mGluR4 for Necrotizing Meningoencephalitis in Dogs	420
------	--	------------

Karen Vernau, DACVIM (Neurology)

219b	Matrix Metalloproteinase-2 and -9 in Canine Central Nervous System Tumors	421
------	--	------------

Christopher Mariani, DACVIM (Neurology)

220a	Signalling Proteins and Toll-like Receptors May Induce a Th-17 Immune Response in Canine Steroid-Responsive Meningitis-Arteritis	422
------	---	------------

Arianna Maiolini

220b	The Magnetic Resonance Imaging Appearance of Canine Intra-Axial Primary Brain Tumors Relates More Strongly to Tumor Grade than Tumor Type	423
------	--	------------

R. Bentley, DACVIM (Neurology)

ACVIM Oncology

Session#	Title / Author	Page#
-----------------	-----------------------	--------------

7a	Mutagen Sensitivity in Golden Retriever Lymphoma	424
----	---	------------

Douglas Thamm, VMD, DACVIM (Oncology)

7b	GS-9219/VDC-1101 Efficacy in Canine Lymphoma	426
----	---	------------

Douglas Thamm, VMD, DACVIM (Oncology)

8a	Freeze Core Brain Biopsy Comparison with Surgical Biopsy	428
----	---	------------

Dominic Marino, DVM, DACVS, DACCT, CCRP

8b	Fatal Hyperthermia After Diencephalic Mass Removal	429
----	---	------------

Dominic Marino, DVM, DACVS, DACCT, CCRP

9a	Evaluation of NBD Peptide as a Novel Therapeutic in Canine Lymphoma	430
----	--	------------

Nicola Mason, DVM, PhD, DACVIM (SAIM)

9b	Safety of Metronomic Cyclophosphamide Combined with Carboplatin for Dogs with Cancer	431
----	---	------------

Jenna Burton, DACVIM

39	Pet Dogs Lead the Way in the Fight to Stop Urinary Bladder Cancer	432
----	--	------------

Deborah Knapp, DVM, DACVIM (Oncology)

40	New Radiation Oncology Techniques for Treatment of Urogenital Tumors Susan LaRue, DVM, MS, PhD	435
41	Interventional Oncology and the Management of Urinary Tract Cancer William Culp, VMD, DACVS	437
42	The Future of Personalized Medicine for Canine Cancer Melissa Paoloni, DVM, DACVIM (Oncology)	440
97	Cachexia in Feline Cancer Patients Erika Krick, VMD, DACVIM (Oncology)	442
98	Complementary and Alternative Medicine for Veterinary Cancer Patients: What You and Your Clients Should Know Michael Childress, DACVIM	445
99a	Thymidine Kinase 1 and C-Reactive Protein as Biomarkers for Screening Clinically Healthy Dogs for Occult Disease Kim Selting, DACVIM	448
99b	Oncologic Outcome and Prognostic Factors in 1134 Dogs with Appendicular Osteosarcoma Treated at a Single Institution Laura Selmic, BVetMed (Hons), MRCVS, DACVS	449
100a	Folate-Targeted Therapy for Canine Urinary Bladder Deborah Knapp, DVM, DACVIM (Oncology)	450
100b	Detection of Chemicals in the Urine of Dogs Following Home Lawn Application Deborah Knapp, DVM, DACVIM (Oncology)	451
101	Targeted Antibody Therapies: Expect More, Pay Less Nicola Mason, DVM, PhD, DACVIM (SAIM)	452
102	Insights from Genetic and Functional Studies in Hemangiosarcoma Jaime Modiano, VMD, PhD	455
103	Vitamin D in the Treatment and Pathogenesis of Canine Mast Cell Tumors, Osteosarcoma and Congestive Heart Failure Kenneth Rassnick, DVM, DACVIM (Oncology)	458
104	Canine Osteosarcoma - Bench to Bedside Molecular Targets and Therapeutics Timothy Fan, DVM, PhD, DACVIM (Oncology & SAIM)	461
169	Targeted Monoclonal Antibody Therapy in Canine Lymphoma Barbara Biller, DVM, PhD, DACVIM	463

170	Canine Lymphoma - A Cancer Gone Viral? Nicola Mason, DVM, PhD, DACVIM (SAIM)	465
171	Canine Lymphomas - Rethinking a Diverse Family of Neoplasms Michael Childress, DACVIM	468
172	Canine Lymphoma - Is There a Standard of Care? Dennis Bailey, DACVIM	471
221/222a	Canine Cutaneous Mast Cell Tumor Profile: What Does It Mean? Debra Kamstock, DVM, PhD, DACVP	474
222b/223	Treatment Recommendations for Canine Mast Cell Tumors Dennis Bailey, DACVIM	477
224	Mast Cell Tumor Cases and Controversies Laura Garrett, DVM, DACVIM (Oncology)	480
225	SIRS, Sepsis, MODS, MOF and More Claire Sharp, BSc, BVMS, MS, DACVECC	483

ACVIM One Medicine

Session#	Title / Author	Page#
105	GI Microflora and the Hygiene Hypothesis James Fox, DVM, DACLAM	487
106	DNA Methylation: Understanding Dogs to Understand Humans Jeffrey Bryan, DVM, MS, PhD, DACVIM (Oncology)	490

ACVIM Small Animal Internal Medicine

Session#	Title / Author	Page#
10	Disordered Hemostasis and What to do About it Kari Lunsford, DVM, DACVIM (SAIM)	492
11	Antiplatelet and Anticoagulant Therapy: What Do We Know? Where Are We Going? Marilyn Dunn, DMV, MVSc, DACVIM (SAIM)	494

12	Monitoring Platelet Function during Anti-Platelet Therapy John Thomason, DACVIM	497
43	Use and Misuse of Diagnostic Panels in Canine Vector-Borne Disease Testing Linda Kidd, DACVIM	500
44	Polyprenyl Immunostimulant: Adjunct for Treatment of Feline Rhinotracheitis and Feline Infectious Peritonitis Alfred Legendre, DVM, MS, DACVIM (SAIM & Oncology)	503
45	Histoplasmosis: Current Dignostic and Treatment Strategies Audrey Cook, BVM&S, MRCVS, DACVIM (SAIM), DECVIM-CA	505
46	Canine Parvovirus Type: Does it Impact Prevention, Diagnosis or Prognosis? Julia Veir, DACVIM	508
69	SOTA: Antibiotics and Antibiotic Resistance: A Practical Discussion Joseph Blondeau, MSc, PhD, RSM(CCM), SM(AAM), SM(ASCP), FCCP	511
70	SOTA: Choosing Antimicrobial Agents in a World Antimicrobial Resistance Joseph Blondeau, MSc, PhD, RSM(CCM), SM(AAM), SM(ASCP), FCCP	513
71a	On the Trace of New Biomarkers: Differential Expression of Circulating MicroRNAs in Lean, Obese and Diabetic Cats Karin Weber, DMV	515
71b	Test Development for Preclinical Detection of Hypoadrenocorticism (HOAC) in Dogs Markus Rick, Med Vet, PhD	516
72a	Chronic Pancreatitis in the English Cocker Spaniel Shows a Predominance of IgG4+ Plasma Cells Penny Watson, DECVIM, DRCVS	517
72b	Babesia Conradae Infection in Coyote Hunting Dogs Infected with Multiple Blood-Borne Pathogens Jonathan Dear, DACVIM	518
73a	Mesenchymal Stem Cells in Experimental Feline Asthma: A Pilot Study Carol Reinero, DVM, PhD, DACVIM (SAIM)	519
73b	Evaluation of the Association Benazepril/Renal Diet to Control Renal Proteinuria in Non-Azotemic Dogs Oscar Cortadellas	520

74a	Minimally-Invasive Removal of Uroliths in Female Cats Hasan Albasan, DVM, MS, PhD	521
74b	Assessment of Allogeneic Cryopreserved Mesenchymal Stem Cells for the Treatment of Feline Chronic Kidney Disease Jessica Quimby, DVM, DACVIM (SAIM)	522
75	Not "Just" Tracheal Collapse: Pathophysiology and Management Eleanor Hawkins, DVM, DACVIM (SAIM)	523
76	Feline UR Aspergillosis - How Different Is It from Canine Sinus Aspergillosis? Vanessa Barrs, BVSc (hons), MVetClinStud, MACVSc (Small Animal), FACVSc (Feline), GradCertEd (Higher Ed)	526
77	Pulmonary Disease from Canine- and Feline-Associated Intestinal Helminths Dwight Bowman, MS, PhD	529
78	Review of Parasitic Diseases Associated with the Neonatal Dog and Cat Dwight Bowman, MS, PhD	531
79	Lyme Disease: Which Test is Best? Meryl Littman, VMD, DACVIM (SAIM)	533
80	New Developments in Quantitative Testing and Vaccine Safety Canine Lyme Disease Richard Goldstein, DVM, DACVIM (SAIM), DECVIM-CA	536
109a	Misoprostol Promote Gastric Barrier Defense Against Non-NSAID Mediated Acid-Induced Injury Tracy Hill, DVM, DACVIM (SAIM), DECVIM-CA, DECVCP	539
109b	Antimicrobial Activity of Cefovecin (Convenia®) Against Borrelia burgdorferi and its Impact on Early Lyme Borreliosis in Dogs Patrick Meeus, DVM, PhD, DEVPC, DACVM (Parasitology)	540
110a	Identification of the Gene for Burmese Autosomal Recessive Hypokalemic Polymyopathy by Genome-Wide Association Study Leslie Lyons, PhD	541
110b	Anti-Alpha Aholase Antibodies in the Serum of Cats With and Without Azotemia Stratified by Vaccination Status Michael Lappin, DVM, PhD, DACVIM (SAIM)	54+
111a	High Dose Diamenazine Diacetate Does Not Eliminate Parasitemia in Cats with Chronic Cytauxzoon felis Infection	544

Leah Cohn, DVM, MS, PhD, DACVIM (SAIM)

111b	Effects of the Probiotic VSL#3 on Microbiological, Histological, and Immunomodulatory Parameters in Dogs with Inflammatory Bowel Disease	545
	Giacomo Rossi, DVM, PhD	
112a	Effects of Enterococcus Faecium SF58 on Stress Diarrhea	54'
	Arleigh Reynolds, DACVN	
112b	Determination of the Peptide-Binding Motif of a Prevalent Canine MHC Class Ia Allele	548
	Paul Hess, DACVIM (Oncology & SAIM)	
173	The Problem Diabetic: Acromegaly, Cushing's, and Other Causes of Insulin Resistance	549
	Mark Peterson, DVM, DACVIM (SAIM)	
175	Gallbladder Mucoceles: The Endocrine Connection	552
	Audrey Cook, BVM&S, MRCVS, DACVIM (SAIM), DECVIM-CA	
176	Understanding ACTH Stimulation Tests	555
	Patty Lathan, VMD, MS, DACVIM (SAIM)	
177	Advanced Considerations of Esophageal Dysfunction	557
	Michael Willard, DVM, DACVIM (SAIM)	
178	Pathophysiology of Hepatic Encephalopathy in Companion Animals: New Information	560
	Adam George Gow, DECVIM, DRCVS (Small Animal Medicine)	
179	Understanding Adaptive Immunity in Canine IBD: Cytokines and Mucosal Protection	563
	Silke Schmitz, DrMedVet, DECVIM	
180	Advanced Endoscopy Techniques in SA Gastroenterology: What Are the Potentials and Pitfalls?	567
	Caroline Mansfield, BSc, BVMS, MACVSc, MVM, DECVIM-CA	
181	Enhancing Appetite in the Feline Patient	570
	Jessica Quimby, DVM, DACVIM (SAIM)	
182	New Development in Management of Feline Diabetes	573
	Jacqueline Rand, DACVIM	
183	Feline Chronic Pain:Assessment and Management in Complex Medical Cases	575
	Lisa Moses, VMD, DACVIM	

184	Figure out Feline Pancreatitis Marnin Forman, DACVIM	578
226	Sepsis Biomarkers Claire Sharp, BSc, BVMS, MS, DACVECC	582
227	Top Ten Tips for Surviving Sepsis Claire Sharp, BSc, BVMS, MS, DACVECC	586
228	Sepsis: What the Future Holds Claire Sharp, BSc, BVMS, MS, DACVECC	588
229	Liver Sampling Methods and Considerations: Is Laparoscopy Best? Keith Richter, DVM, DACVIM	590
234	Dogma and Dilemmas in DIC Stephanie Smith, DVM, MS, DACVIM (SAIM)	593
235	Making Sense of the Nonsense - Diagnosis and Treatment of Enteropathogenic Bacterial Infections Stanley Marks, BVSc, PhD, DACVIM (SAIM & Oncology), DACVN	596
236	Milotane vs. Trilostane: What's the Evidence? Ellen Behrend, VMD, PhD, DACVIM, Joezy Griffin Professor	603
237	Two Are Not Better: Feline Chronic Kidney Disease and Heart Disease Ashley Saunders, DVM, DACVIM (Cardiology)	606
238	Two Are Not Better: Feline Chronic Kidney Disease and Nephrolithiasis Joseph Bartges, DVM, PhD, DACVIM, DACVN	608
239	Two Are Not Better: Feline Chronic Kidney Disease and Diabetes Mellitus Claudia Kirk, DVM, PhD, DACVIM (SAIM), DACVN	611
240	Two Are Not Better: Feline Chronic Kidney Disease, Inflammatory Bowel and Liver Disease Jacqueline Whittemore, DVM, DACVIM (SAIM), PhD	614
241	General Quality Assurance: Basic Definitions and Concepts Kendal Harr, DVM, MS, DACVP	617
246	Alternative Options for Managing Urinary Tract Disease in the Dog and Cat Mary Bowles, DVM, DACVIM	620
247	Obesity and Stress: Risk Factors for Feline Lower Urinary Tract Disease? Jennifer Larsen, DVM, PhD, DACVN	623

Jodi Westropp, DVM, PhD, DACVIM

248	Feline Urethral Obstruction: Traditional and Alternative Approaches to Treatment Edward Cooper, VMD, MS, DACVECC	626
249	Managing Acute Rhabdomyolysis in Horses Erica McKenzie, BSc, BVMS, PhD. DACVIM (LAIM)	629

ASVCP

Session#	Title / Author	Page#
113	Cytology of Neoplastic Diseases and Its Correlation with Histopathology Rose Raskin, DVM, PhD, DACVP	633
115	Cytology in the Diagnosis of Inflammation and Infectious Diseases James Meinkoth, DVM, PhD, DAVCP	637
116	Case Studies in Infectious Disease Cytology James Meinkoth, DVM, PhD, DAVCP	641
242	Quality Assurance for Point-of-Care Analyzers in Veterinary Medicine: What Every User Should Know Bente Flatland, DVM, DACVIM (SAIM), DACVP	644
243	Interpreting Values Outside Reference Intervals: Is It the Patient or the Machine Kendal Harr, DVM, MS, DACVP	648
244	Quality Assurance in Action: Examples from the Field Bente Flatland, DVM, DACVIM (SAIM), DACVP	651
245	Controversies in RRT: Is IHD, CRRT, or PD Better? Catherine Langston, DVM, DACVIM (SAIM)	653

AVHTM

Session#	Title / Author	Page#
117	Transfusion Therapy in Immune-Mediated Hematologic Disease	656

Ann Hohenhaus, DVM, DACVIM (Oncology & Internal Medicine)

118	Thromboprophylaxis in Immune-Mediated Hemolytic Anemia Sarah Helmond, DACVIM	659
-----	--	------------

119	Modulating Immune Responses in Disease States J. Orava, DVM	663
-----	---	------------

CGS

Session#	Title / Author	Page#
126	Clostridial Diseases in Large Animals and Horses J. Scott Weese, DVM, DVSc, DACVIM (LAIM)	665
127	Critical Assessment of Clostridial Diseases in Dogs and Cats Stanley Marks, BVSc, PhD, DACVIM (SAIM & Oncology), DACVN	668

ISCAID

Session#	Title / Author	Page#
81	ISCAID Antimicrobial Guidelines Working Group Recommendations: Respiratory Infections Michael Lappin, DVM, PhD, DACVIM (SAIM)	672
82	Feline Haemoplasmosis - a One Medicine Approach to Pathogenicity, Diagnosis and Treatment Severine Tasker, BSc, BVSc(Hons), PhD, DSAM, DECVIM-CA, PGCertHE, MRCVS	673
121	Antigen Testing of Deep Mycoses Jane Sykes, BVSc (Hons), PhD, DACVIM (SAIM) Joseph Wheat, MD	676
122	Treatment of Fungal Infections: The Which, Why and How of Antifungal Drug Therapy Jane Sykes, BVSc (Hons), PhD, DACVIM (SAIM)	678
123	Regressive and Progressive FeLV Infections: Clinical Relevance Katrin Hartmann, Prof., Dr. med. vet., Dr. habil., DECVIM	681

124	Is There an Epidemic of Feline Bartonellosis? Diagnosis, Treatment, Prevention, and Zoonotic Aspects Michael Lappin, DVM, PhD, DACVIM (SAIM)	684
-----	--	-----

Liver Study Group

Session#	Title / Author	Page#
17	Breed Specific Hepatopathies: Dalmation and English Springer Spaniel Penny Watson, DECVIM, DRCVS David Twedt, DVM, DACVIM (SAIM)	686
16	Breed Specific Hepatopathies: Labrador Retriever Cynthia Webster, DVM, DACVIM	689
18	Breed Specific Hepatopathies: Scottish Terrier and Maltese Sharon Center, DVM, DACVIM	694

SCE

Session#	Title / Author	Page#
51	Neuroendocrine Malignancies in Humans Lowell Anthony, MD, FACP	697
53	Nuclear Imaging in Veterinary Endocrinology Gregory Daniel, DVM, MS, DACVR	700
54	Diagnosis and Treatment of Canine Pheochromocytoma Claudia Reusch, Prof. Dr., DECVIM	703

SVN/U

Session#	Title / Author	Page#
129a	Creatinine: Reassessment of an Old Biomarker David Polzin, DVM, PhD, DACVIM (SAIM)	706

129b	New Biomarkers of Kidney Disease: An Update Mary Nabity, DVM, PhD, DACVP	708
130a	Application of Novel Biomarkers in Dogs with Experimental Acute Kidney Injury Carrie Palm, DACVIM (SAIM)	710
130b	Application of Novel Biomarkers in Naturally Occurring Acute Kidney Injury Gilad Segev, DVM, DACVIM-CA	711
132a	Novel Treatment Strategies for Uncomplicated UTIs in Dogs Jodi Westropp, DVM, PhD, DACVIM	713
132b	Management of Complicated UTI Dennis Chew, DVM, DACVIM	715

VCRS (Food Animal)

Session#	Title / Author	Page#
59	IAD and RAO - What have we Learned in the Last Ten Years? Melissa Mazan, DVM, DACVIM (LAIM)	717
60	Pulmonary Regenerative Therapy: How Can We Make a New Lung? Melissa Mazan, DVM, DACVIM (LAIM)	719
62	9j JXYbW! 6UgYX 5bhja JWcV]U`HfYUha YbhGhfUHY[JYg`Zcf`=bZYW]cbg`]b` @Ua Ug`UbX`5`dUWg 8UbJY`U 6YXYb]W, D57J =A, 8f``a YX``j YH`z`857J 977	722
13	Hypercoagulability in Pulmonary Disease; Where is the Evidence Elizabeth Rozanski, DVM, DACVIM (SAIM), DACVECC	724
14	Expanding the Diagnostic Approach for Feline Allergic Asthma: Functional and Immunologic Testing Carol Reinero, DVM, PhD, DACVIM (SAIM)	727

VECCS

Session#	Title / Author	Page#
----------	----------------	-------

133	The RECOVER Initiative: What the Evidence Tells Us About CPR in Small Animal and Comparative Research	730
	Manuel Boller, Dr. med. vet., MTR, DACVECC	
134	The RECOVER Initiative - Consensus on Basic and Advanced Life Support During CPR	733
	Daniel Fletcher, PhD, DVM, DACVECC	
135	The RECOVER Initiative - Consensus on Preparedness, Training and Post-Arrest Care	737
	Daniel Fletcher, PhD, DVM, DACVECC	
136	Pathophysiology of Ischemia and Reperfusion: What Matters During Arrest and CPR	739
	Manuel Boller, Dr. med. vet., MTR, DACVECC	
187	Platelet Activation in Critical Illness	742
	Armelle De Laforcade, DVM, DACVECC	
188	Lung Function and Ventilation in the Critically Ill Patient	744
	Elizabeth Rozanski, DVM, DACVIM (SAIM), DACVECC	
189	Re-Evaluation of Feeding Strategies in Critically-Ill Patients	746
	Daniel Chan, DVM, DACVECC, DACVN, FHEA, MRCVS	

Technician Program Proceedings

Technician

Session#	Title / Author	Page#
T05	Diagnosis and Nursing Care of Tetanus and Botulism in Horses Allison Stewart, BVSc (Hons), MS, DACVIM (LAIM), DACVECC	749
T06	Rabies in Large Animals: Transmission, Diagnosis, Prevention and Occupational Safety Allison Stewart, BVSc (Hons), MS, DACVIM (LAIM), DACVECC	751
T07	Evaluation of the Neurologic Patient Stephanie Gilliam, RVT, BAS, CCRP	755
T08	Degenerative Myelopathy Diagnosis and Management: The Technician's Role Stephanie Gilliam, RVT, BAS, CCRP	758
T09	Adrenal Insufficiency in Critical Illness: Is It JUST Addison's? David Liss, RVT, VTS (ECC)	760
T10	Spleen Physiology and the Treatment of Common Diseases Amy Breton, CVT, VTS (ECC)	763
T11	Medical Management of Feline Chronic Kidney Disease Jessica Quimby, DVM, DACVIM (SAIM)	766
T12	Practical Guide to Diagnosis and Prevention of Canine Leptospirosis Chad Johannes, DVM, DACVIM (SAIM)	769
T13	Diagnosis and Management of Oral Tumors in Dogs and Cats Tracy Gieger, DVM, DACVIM, DACVR	771
T14	Antiemesis Therapeutic Considerations for the Oncology Patient Chad Johannes, DVM, DACVIM (SAIM)	774
T15	Polyunsaturated Fatty Acids and Cancer: Frontiers for Cure and Control Gregory Ogilvie, DVM, DACVIM (SAIM & Oncology), DECVIM-CA	777
T16	Science Behind the Placebo Effect and the Mind-Body Connection in Veterinary Oncology	779

Gregory Ogilvie, DVM, DACVIM (SAIM & Oncology), DECVIM-CA

T17	Feline Hyperthyroidism: New Therapy (It's in the Bowl!) Vicky Ograin, MBA, RVT	781
T18	Cat and Carbohydrates: What Should Fluffy Eat? Kara Burns, MS, MEd, LVT	784
T19	Enhancing Appetite in the Feline Patient Jessica Quimby, RVT, VTS (Cardiology)	786
T20	Alternative and Raw Diets Kara Burns, MS, MEd, LVT	788
T21	Chemotherapy Administration: Keeping You Safe! Kim Albin, LVT, VTS (Oncology)	791
T22	Electrochemotherapy: The Wave of the Future Chelsea Tripp, DVM, MS, DACVIM (Oncology)	793
T23	The Roles for Radiation in Cancer Therapy Laura Garrett, DVM, DACVIM (Oncology)	795
T24	Continuous Rate Infusion: Drugs and Calculations Meri Hall, RVT, LVT, CVT, RLATG, VTS (SAIM)	798
T25	Bullying and Lateral Violence Amongst Nurses and Techs Lisa Allison, BS, LVT, CVT, VTS (Oncology) Joshua Estrin, MS, LCSW, CMFSW	799
T26	Top Ten Mistakes Made When Administering Medications to Animals Mark Papich, DVM, MS, DACVCP	800
T27	ECG Basics: Tips to Get the Best Out of It Romain Pariaut, DVM, DACVIM (Cardiology), DECVIM-CA (Cardiology)	803
T29	Emergency Management of Arrhythmias Deborah Fine, DVM, MS, DACVIM (Cardiology)	805
T30	Cardiac Pacemakers in Small Animal Cardiology H. Edward Durham, CVT, LATG	808
T31	Effective Laboratory Medicine in Equine Practice Richard Hepburn, BVSc, MS, CertEM(IntMed), DACVIM(LAIM), MRCVS	811
T32	Comparative Anatomy and Physiology of the Large Animal Female Reproductive Tract	814

Shirley Sandoval, BAS, LVT-VTS (LAIM)

T33	Understanding Common Disorders of Small Ruminants Thomas Passler, DVM, PhD, DACVIM	816
T34	Equine Rehabilitation Anna Firshman, BVSc, PhD, DACVIM, DACVSMR	819
T35	Equine Cardiology: Physiology, Acquired and Congenital Disease H. Edward Durham, CVT, LATG	821
T36	Hypertrophic Cardiomyopathy Screening in Cats Charlotte Pace, BA (Hons), RVN, VTS (Cardiology)	824
T37	Diagnosis and Treatment of Chronic Mitral Valve Degeneration in Dogs Charlotte Pace, BA (Hons), RVN, VTS (Cardiology)	826
T38	Treating the Final Stage of Heartworm Disease: Caval Syndrome Bonnie Heatwole, CVT	828
T39	Advanced Endoscopic Techniques Caroline Mansfield, BSc, BVMS, MACVSc, MVM, DECVIM-CA	830
T40	Management of Methicillin-Resistant Staphylococcal Infections J. Scott Weese, DVM, DVSc, DACVIM (LAIM)	833
T41	Respiratory Mechanics and Monitoring Bea Biddinger, LVT, VTS (ECC)	836
T42	Pleural Space Disease: Chest Taps and Tubes Bea Biddinger, LVT, VTS (ECC)	839
T44	Brain Tumors in Small Animals: Diagnosis and Management R. Bentley, DACVIM (Neurology)	842
T45	Therapeutic Lasers in Veterinary Medicine Kristin Kirkby, DVM, MS, CCRT, DACVS	845
T46	Patient Care for Non-Ambulatory Dogs with Spinal Cord Injury Jessica Weber, BS, LVT, VTS (SAIM, Neurology)	847
T47	Effective Restraint and Sedation Techniques for Performing Echocardiograms on the Dog and Cat Anne Myers, RVT, VTS (Cardiology)	850

T48	How Can Veterinary Rehabilitation Help my Patient? Kristin Kirkby, DVM, MS, CCRT, DACVS	853
T49	Infectious and Immune-Mediated Arthropathies Colleen Ruderman, RVT, VTS (SAIM)	856
T50	Liver: Physiology and Disease Amy Breton, CVT, VTS (ECC)	859