

American College of Veterinary Internal Medicine (ACVIM) Forum 2017

National Harbor, Maryland, USA
8 - 10 June 2017

Volume 1 of 2

ISBN: 978-1-5108-4279-3

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© (2017) by American College of Veterinary Internal Medicine
All rights reserved.

Printed by Curran Associates, Inc. (2017)

No part of this publication may be reproduced, stored, or transmitted in any form or by any means without the prior permission in writing from the copyright holder. Authors have granted unlimited and nonexclusive copyright ownership of the materials contained in the submitted Proceedings manuscript to the American College of Veterinary Internal Medicine (ACVIM). Unlimited means that the author agrees that the ACVIM may use various modes of distribution, including online formats. Nonexclusive means that the ACVIM grants to the author an unlimited right to the subsequent re-use of the submitted materials. The research abstracts, and research reports, contained herein are the property of the *Journal of Veterinary Internal Medicine (JVIM)*. The ACVIM and the JVIM are not responsible for the content of the lecture manuscripts, research abstracts or research reports. The articles are not peer reviewed before acceptance for publication. The opinions expressed in the proceedings are those of the author(s) and may not represent the views or position of the ACVIM. The majority of these papers were transmitted via electronic mail and then converted, when necessary, to Word for Windows (Microsoft Corporation, Redmond, Washington). In the conversion process, errors can occur; however, every reasonable attempt has been made to assure that the information contained in each article is precisely how the author(s) submitted it to the ACVIM office. If there are any questions about the information in any article, you should contact the author(s) directly.

Address correspondence to:

American College of Veterinary Internal Medicine (ACVIM)
8301 E. Prentice Avenue, Suite 300
Greenwood Village, CO 80111
www.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: 845-758-2633
Email: curran@proceedings.com
Web: www.proceedings.com

TABLE OF CONTENTS

VOLUME 1

CARDIOLOGY

Reflection of the Heart: Basic Echocardiography for Veterinary Technicians.....	1
<i>H. Edward Durham</i>	
How Fast Is Fast: Doppler Echocardiography.....	6
<i>H. Edward Durham</i>	
Understanding the Development of Arrhythmias.....	11
<i>Carol Fitzpatrick</i>	
Understanding the Treatment of Arrhythmias.....	15
<i>Carol Fitzpatrick</i>	
The Use of Anti-arrhythmic Drugs Vs. Electrical Cardioversion to Treat Tachyarrhythmias in the Canine and Feline Patient.....	18
<i>Anne Myers</i>	
Cardiac Effects of Systemic Disease: Structural, Functional, Electrical Heart Changes of Noncardiac Origin.....	21
<i>Jessica L. Ward</i>	
Recent Trends in Diagnosis and Treatment of Congestive Heart Failure in Dogs and Cats	26
<i>Jessica L. Ward</i>	

LARGE ANIMAL INTERNAL MEDICINE

Targeted Nutritional Management of Horses at Risk of Laminitis	32
<i>Harry B. Carslake</i>	
Biosecurity Measures to Prevent the Spread of Equine Infectious Transmissible Diseases	36
<i>Angelika Schoster</i>	
A Technicians Guide to Radiography in Equine Medicine.....	41
<i>Richard Hepburn</i>	
Common Clinical Presentations and Diseases of Neonatal Ruminants and Camelids	46
<i>Melissa G. Ackerman</i>	

NEUROLOGY

Advanced MRI Safety for Veterinary Professionals	52
<i>James J. Stupino</i>	
Holistic Epilepsy Management.....	55
<i>Holger A. Volk</i>	
Caring for the Down Patient	58
<i>Laurie Cook</i>	
Feline Neurology in Practice	61
<i>Laurie Cook</i>	
Neurology Technician's Role in Management of Patients With Intracranial Trauma.....	65
<i>Karen D. Inzana</i>	
How to Perform a Neurological Exam	69
<i>Maureen Sroufe</i>	
Spinal Cord Localization and Disease	73
<i>Maureen Sroufe</i>	
Pain Management Options for Dogs and Cats	74
<i>Alix Partnow</i>	

NUTRITION

Chronic Diarrhea.....	76
<i>Nicola Ackerman</i>	
Food Intolerance	79
<i>Nicola Ackerman</i>	
Prebiotics and Probiotics: What Can They Really Do for You?.....	83
<i>Ann Wortinger</i>	

ONCOLOGY

Flexible GI Endoscopy	86
<i>Liza W. Rudolph</i>	

The Incidentalomas: Splenic and Adrenal Masses	91
<i>Sandra A. Bechtel</i>	
Prevention, Management and Treatment of Chemotherapy Induced Gastrointestinal Toxicity in Veterinary Medicine	94
<i>Emma Warry</i>	
Bronchoscopy for the Endoscopy Technician	98
<i>Susan Cox</i>	
License to Pill: What You Need to Know to Keep Your Job and Your Cancer Patients Safe	101
<i>Carolyn J. Henry</i>	
The Long Goodbye: Hospice and Palliative Care in the Veterinary Hospital.....	104
<i>Liz Hughston</i>	
Cystitis or Transitional Cell Carcinoma? Differentiation of Bacterial Infection and Cancer of the Bladder	111
<i>Anne M. Corrigan</i>	
PLN: The Technicians Role in Monitoring.....	115
<i>Dawn Terrill</i>	
Bartonellosis: One Health Perspectives on an Emerging Infectious Disease.....	118
<i>Edward B. Breitschwerdt</i>	

SMALL ANIMAL INTERNAL MEDICINE

The Axis of Evil: Triaditis in the ICU	123
<i>Ashley DiPrete</i>	
Atypical Endocrine Diseases and the Role of the Veterinary Technician	128
<i>Colleen Ruderman</i>	
Semi-elemental Nutrition for Internal Medicine Patients.....	132
<i>Kara M. Burns</i>	
Parathyroid Disease.....	136
<i>Tracey Nowers</i>	
Understanding Diabetic Remission in the Cats	139
<i>Laura Van Vertloo</i>	
Stenting for the VT: Procedures, Equipment & Techniques.....	142
<i>Meri Hall</i>	
Acquisition and Analysis of Joint Fluid	144
<i>Carmela Pratt</i>	
Antibiotics: Pearls for the Veterinary Technician	146
<i>Dennis Spann</i>	

SMALL ANIMAL INTERNAL MEDICINE & LARGE ANIMAL INTERNAL MEDICINE

The Nursing Process.....	150
<i>Liza W. Rudolph</i>	
Alternative Use of Blood Products.....	153
<i>Kenichiro Yagi</i>	
Evan's Syndrome: A Technician's Role.....	157
<i>Yvonne Brandenburg</i>	

TRANSFUSION

Introduction to Transfusion Medicine for the ER and ICU Technician	164
<i>Jordin Karalunas</i>	
Right Ventricular Systolic Function in Dogs with Preclinical and Clinical Myxomatous Mitral Valve Disease (C01).....	170
<i>Emily Chapel</i>	
High-Pressure Balloon Valvuloplasty for Severe Pulmonic Stenosis: A Prospective Observational Study in 25 Dogs (C02).....	171
<i>Catherine Belanger</i>	

RESEARCH ABSTRACTS – ORAL PRESENTATIONS

Exit Block as a Mechanism of Sinus Node Dysfunction Evidenced by Geometric Heart Rate Variability (C03).....	172
<i>Flavia Giacomazzi</i>	
Is the Left Atrium Prothrombotic in Cats with Aortic Thromboembolism? (C04).....	173
<i>Tsumugi Kurosawa</i>	
Characterization of Gene Expression Profiles Linked to Degenerative Mitral Valve Disease in Small Breed Dogs (C05).....	174
<i>Eva M. Oxford</i>	
Prognostic Value of MAPSE and TAPSE in Feline Hypertrophic Cardiomyopathy (C06)	175
<i>Ilaria Spalla</i>	

Echocardiographic Assessment of Aortic Root Rotation in Dogs with Congenital Heart Disease (C07).....	176
<i>Nicole R. Wyatt</i>	
Echocardiographic Right Atrial Volumes in Cats with Cardiac Disease and Pleural Effusion Versus Pulmonary Edema (C08).....	177
<i>Katherine F. Scollan</i>	
Reader Performance of Radiographic Left Atrial Enlargement in Dogs and Comparison to Echocardiographic Left Atrial Assessment (C09)	178
<i>Laetitia Duler</i>	
Echocardiographic Effects of Butorphanol and Atenolol in Dogs with Pulmonary Valve Stenosis (C10).....	180
<i>Satoko Nishimura</i>	
Prospective Clinical Trial Evaluating Spironolactone in Dobermanns with Congestive Heart Failure due to Dilated Cardiomyopathy (C11).....	181
<i>Lynne O'Sullivan</i>	
Heart-Fatty Acid Binding Protein – A Potential Marker for Canine Cardiac Diseases (C12).....	182
<i>Christopher Lam</i>	
Non-Gated Computed Tomography Angiography for Evaluation of Coronary Artery Anomalies in Bulldogs with Pulmonic Stenosis (C13)	183
<i>Catherine T. Gunther-Harrington</i>	
Ventricular Remodelling Marker Levels Differ in Cats with Hypertrophic Cardiomyopathy with and without Atrial Thrombus (C14).....	184
<i>Sonja Fonfara</i>	
Normal Echocardiographic Parameters in Clinically Healthy Adult Captive Tigers with and without Medetomidine Sedation (C15).....	185
<i>Kiira T. Rodriguez</i>	
Evaluating Clopidogrel Effect in Cats Using Plateletworks (Arachidonic Acid) and Platelet Function Analyzer 200 (P2Y) (C16).....	186
<i>Anthony Abrams-Ogg</i>	

RESEARCH ABSTRACTS – POSTER PRESENTATIONS

Postoperative Changes in Aortic Characteristics Affect the Low Fractional Shortening in Canine Patent Ductus Arteriosus (C17).....	187
<i>Takuma Aoki</i>	
Congestive Heart Failure Associated with DOCP Therapy in 12 Dogs with Hypoadrenocorticism (C18).....	188
<i>Christophe Bourguignon</i>	
An Impaired Oculocardiac Reflex Identifies the Autonomic Imbalance in Dogs with Symptomatic Mitral Valve Disease (C19).....	189
<i>Bruna C. Brüler</i>	
Instability of the QT Interval in Dogs with Myxomatous Mitral Valve Disease (C20).....	190
<i>Bruna C. Brüler</i>	
Cardiovascular Changes in Brachycephalic Dogs (C21).....	191
<i>Marlos G. de Sousa</i>	
Dobutamine Stress Test in Dogs with Degenerative Mitral Valve Disease (C22).....	192
<i>Marlos G. de Sousa</i>	
Speckle Tracking in Dogs with Myxomatous Mitral Valve Disease Submitted to Pharmacological Stress Test (C23).....	193
<i>Marlos G. de Sousa</i>	
Cardiovascular Echocardiography Aspects During Pregnancy in Female Dogs (C24)	194
<i>Marlos G. de Sousa</i>	
TAPSEidx Echocardiographic Evaluation in Dogs with Pulmonary Hypertension Pre-Capillary and Post-Capillary (C25)	195
<i>Marlos G. de Sousa</i>	
Pre Clinical Results of LASSBIO294: An Inodilator Compound (C26)	197
<i>Rosangela Carvalho</i>	
Clinical and Echocardiographic Features, and Survival of French Bulldogs with Pulmonic Stenosis (66 Cases: 2005-2016) (C27)	198
<i>Cécile Damoiseaux</i>	
Comparative Multidimensional Imaging of Patent Ductus Arteriosus in Dogs (C28)	199
<i>Kelley R. Doocy</i>	
Changes In Neurohumoral Factors in 9 Dogs That Received Carperitide and Presented with Pulmonary Edema (C29).....	200
<i>Masayuki Enokizono</i>	
Myocardial Remodeling in Canine Dilated Cardiomyopathy (C30)	201
<i>Sonja Fonfara</i>	
Retrospective Evaluation of Effect of Heart Rate on Survival in Dogs with AF (C31)	202
<i>Anna R. Gelzer</i>	
Left Atrial Volume Can Detect Congestive Heart Failure in Dogs with Chronic Mitral Valve Disease (C32)	203
<i>André M. Gimenes</i>	

Serum Levels of ST2 Soluble Fraction in Clinically Healthy Dogs (C33).....	204
<i>André M. Gimenes</i>	
Soluble ST2 Biomarker in Heart Failure Secondary to Chronic Mitral Valve Disease in Dogs (C34).....	205
<i>André M. Gimenes</i>	
Prevalence of Heart Disease in Dogs at a Teaching Hospital: A Retrospective Populational Study (C35).....	206
<i>Guilherme T. Goldfeder</i>	
Assessment of Left Atrial Function by Speckle-Tracking Echocardiography in Dogs with Myxomatous Mitral Valvular Disease (C36).....	207
<i>Sang-Woo Han</i>	
Acute Echocardiographic Effects of Sotalol on Ventricular Function and Ectopy in Dogs with Ventricular Tachyarrhythmias (C37).....	208
<i>Joanna L. Kaplan</i>	
Speckling-Tracking Echocardiographic Alterations in Dogs with Chronic Mitral Valvular Disease and Concurrent Renal Disorders (C38).....	209
<i>Yunhye Kim</i>	
Comparative Evaluation of Dogs with Chronic Mitral Valve Regurgitation Treated with Amlodipine or Pimobendam (C39).....	211
<i>Maria Helena M. A. Larsson</i>	
Systolic Blood Pressure Obtained by Doppler Method in Dogs: Comparison Between Anatomical Positions and Evaluators (C40).....	212
<i>Maria Helena M. A. Larsson</i>	
Effects of Anti-Inflammatory Glucocorticoids on Hemodynamics and Cardiac Function in Clinically Healthy Dogs (C41).....	213
<i>Allison Masters</i>	
Effect of Ultrafiltration During Cardiopulmonary Bypass in Dogs Undergoing Mitral Valve Plasty (C42).....	214
<i>Katsuhiro Matsuura</i>	
Right Ventricular Dysfunction and Dyssynchrony Assessed by Echocardiography in Dogs with Pre-Capillary Pulmonary Hypertension (C43).....	215
<i>Tomoya Morita</i>	
Short-term Results of Quality-of-Life and Right-Ventricle Function after Palatoplasty and Rhinoplasty in Brachycephalic Dogs (C44).....	216
<i>Jeff Munoz-Pérez</i>	
Prognostic Factors in Cats with Restrictive Cardiomyopathy: A Retrospective Study of 92 Cases (2001-2015) (C45).....	217
<i>Peggy Passavin</i>	
Interindividual Variability in Clopidogrel Active Metabolite Concentrations in Feline Plasma (C46).....	218
<i>Michele C.L. Reinelt</i>	
Biological Variation Of Galectin-3 In Clinically Healthy Dogs (C47).....	219
<i>Denise S. Schwartz</i>	
Galectin-3 as Biomarker in Heart Failure Secondary to Chronic Mitral Valve Degeneration in Dogs (C48).....	220
<i>Denise S. Schwartz</i>	
Assessment of Longitudinal Systolic Function Using Tissue Motion Annular Displacement in Healthy Dogs (C49).....	221
<i>Marlos G. de Sousa</i>	
Coupling Interval and Prematurity Index in Dogs with Mitral Valve Disease and Ventricular Arrhythmias (C50).....	223
<i>Marlos G. de Sousa</i>	
Computed Tomographic Angiography and 3D Printing of Aberrant Coronary Arteries in Dogs with Pulmonic Stenosis (C51).....	224
<i>Susanne M. Steiger-Vanegas</i>	
Radial Strain and Strain Rate Assessed by Speckle-Tracking Echocardiography in Turkish Kangal Dogs (C52).....	225
<i>Osman Safa Terzi</i>	
CT-Based Anatomical Features of Large Airway and Heart Volume in Dogs with Different Body Size (C53).....	226
<i>Takuya Uehara</i>	
Long-term Outcome of Irish Wolfhound Dogs With Preclinical Cardiomyopathy Treated With Pimobendan, Methyldigoxin, Or Benazepril (C54).....	227
<i>Andrea Vollmar</i>	
Evaluation of Lung Ultrasound for the Diagnosis of Congestive Heart Failure in Dogs with Cough (C55).....	228
<i>Jessica L. Ward</i>	
Systematic Optimization of Therapy for Canine Intracranial Neoplasia Using PAC-1, a Novel and Potent Procaspace-3 Activator (VCS Award Winner) (O01).....	229
<i>Lisa J. Schlein</i>	
Development of a Histopathologic and Flow Cytometric Subclassification System In Canine B-Cell Lymphoma (VCS Award Winner) (O02).....	230
<i>Amber Wolf-Ringwall</i>	

RESEARCH ABSTRACTS – ORAL PRESENTATIONS

Incidence and Prognostic Significance of HER2/neu Expression in Canine Osteosarcoma (O03)	231
<i>Martha MaloneyHuss</i>	

MicroRNA-34a Regulates the Invasive Capacity of Canine Osteosarcoma Cell Lines (O04)	233
<i>Cecilia M. Lopez</i>	
Outcome of Cats with Intermediate or Large Cell Gastrointestinal Lymphoma Treated with Surgical Mass Resection (O05).....	234
<i>Kathleen Tidd</i>	
Retrospective Evaluation of Toceranib Phosphate (Palladia®) Use in the Treatment of Canine Gastrointestinal Stromal Tumors (O06).....	235
<i>Erika P. Berger</i>	
Association of Tumor-Infiltrating Regulatory T Cells With Adverse Outcome in Dogs With Solid Tumors (O07).....	236
<i>Kosei Sakai</i>	
Adoptive T Cell Transfer in Healthy Dogs, and Dogs with Osteosarcoma (O08).....	237
<i>Jeffrey N. Bryan</i>	
Dysregulation of Healthy Osteoblasts by Canine Osteosarcoma Exosomes (O09)	238
<i>Andrew Schlueter</i>	
Quantification and Prognostic Significance of PD-L1 Expression in Canine Diffuse Large B-cell Lymphoma (VCS Award Winner) (O10).....	239
<i>Lisbeth Ambrosius</i>	
In vitro Inhibition of Monocarboxylate Transporters Display Synergistic Activity with Doxorubicin or Metformin in Canine Osteosarcoma (VCS Award Winner) (O11)	241
<i>Heather L. Gardner</i>	

RESEARCH ABSTRACTS – POSTER PRESENTATIONS

Expression of PDGFR-β, VEGFR2, and KIT in Canine Transitional Cell Carcinoma (O12)	242
<i>Lark S. Walters</i>	
Clinical Survey of Veterinary Specialists Evaluating Management of Chemotherapy Induced Vomiting and Inappetence in Dogs (O13).....	243
<i>Natalie P. Punt</i>	
Immunohistochemical Expression of P-Glycoprotein in Dogs with Epitheliotropic and Nonepitheliotropic Cutaneous Lymphoma (O14)	244
<i>Silvia Lucas</i>	
Cell Proliferation Markers Ki-67 and Mitotic Index in Cats with Intestinal Lymphoma (O15)	245
<i>Valter M. Winkel</i>	
Common Cytogenetic Alterations Define Choroid Plexus Tumors in Dogs (N01).....	246
<i>Devin Ancona</i>	
Pullout Properties of Monocortical and Bicortical Pins and Screws in Canine Lumbar Vertebrae Bodies (N02).....	247
<i>Devin Ancona</i>	

RESEARCH ABSTRACTS – ORAL PRESENTATIONS

Pharmacokinetic Analysis of Single Dose Extended Release Levetiracetam Per OS in Healthy Cats (N03).....	248
<i>Laura R. Barnard</i>	
Surgical Decompression, With or Without Adjunctive Therapy, for Treatment of Primary Vertebral Osteosarcoma in Dogs (N04)	250
<i>Sasha Dixon</i>	
The Effects of Stabilizing Agents, Fetal Calf Serum and Vetstarch, on Canine Cerebrospinal Fluid Analysis (N05)	251
<i>Lindsey N. Peterson</i>	
GM2 Gangliosidosis in Shiba Inu Dogs with an In-Frame HEXB Deletion and Autofluorescent Storage Granules (N06).....	252
<i>Natalie A. Villani</i>	
Exosome-Associated Integrins as Liquid Biopsy Biomarkers for Canine Glioma (N07)	253
<i>Chai-Fei Li</i>	
Investigation of Immune or Infectious Etiologies in Canine Meningitis/Meningoencephalitis/Meningoencephalomyelitis (N08)	254
<i>George E. Moore</i>	
Imaging Findings at 3T and Clinical Outcome in Deep-Pain Negative Dogs with Intervertebral Disc Herniation (N09).....	255
<i>Arturo J. Otanendi</i>	
Efficacy of a Therapeutic Diet on Dogs with Signs of Cognitive Dysfunction Syndrome (N10).....	256
<i>Yuanlong Pan</i>	
Cognitive Impairment, Health Status and Overall Adaptation in Aged Dogs: An Epidemiological Study (N11)	257
<i>Anna Salas Mani</i>	
Non-Surgical Treatment of Intracranial Empyema and Abscesses in 5 Dogs (N12)	259
<i>Michelle Tensley</i>	
Cytarabine Constant Rate Infusion as Treatment for Meningoencephalomyelitis of Unknown Etiology in 22 Dogs (N13).....	260
<i>Rachel L. Arnold</i>	

RESEARCH ABSTRACTS – POSTER PRESENTATIONS

Hereditary Myotonia i Pigs Associated with Chloride Voltage-Gated Channel 1 Gene Partial Deletion (N14)	261
<i>Alexandre S. Borges</i>	
Population Pharmacokinetics of Extended-Release Levetiracetam in Epileptic Dogs When Administered Alone, with Phenobarbital or Zonisamide (N15)	262
<i>Karen Munana</i>	
Steroid-Responsive Myelitis in Five Dogs: Different Characteristics in Comparison with Steroid-Responsive Meningitis-Arteritis (N16)	263
<i>Seo-Jin Park</i>	
The Pharmacokinetics of Cytarabine Administered Subcutaneously to Dogs with Meningoencephalomyelitis of Unknown Etiology (N17).....	264
<i>Bethany Pastina</i>	
Cavernous Sinus Syndrome in Dogs and Cats: 15 Cases (2002-2015) (N18).....	265
<i>Helena Rylander</i>	
Effects of Chloride in the Diet on Serum Bromide Concentrations in Dogs (N19).....	266
<i>Go Togawa</i>	
Molecular Analyses of Pituitary Somatostatin and Dopamine Receptors in Feline Hypersomatotropism (ESVE Award Winner) (EN01).....	267
<i>Christopher J. Scudder</i>	
Comparison of Two Doses for ACTH Stimulation Testing in Dogs Suspected of Hypoadrenocorticism (EN02).....	268
<i>Annabel S. Botsford</i>	

RESEARCH ABSTRACTS – ORAL PRESENTATIONS

Performance Evaluation of a Veterinary-Specific Enzyme-Linked Immunosorbent Assay for Measurement of Canine Serum Cortisol Concentrations (EN03).....	269
<i>Michael Lane</i>	
Investigation of a Novel Modified Fixed Dose Determination Protocol for Radioiodine Treatment of Feline Hyperthyroidism (EN04).....	271
<i>Wendy A. Morre</i>	
Comparison Between Glucose Measurements in Canine Whole Blood, Serum and Plasma (EN05)	272
<i>Ellen N. Behrend</i>	
Stereotactic Irradiation of Canine ACTH-Secreting Pituitary Tumors: Clinical and MRI Time-Related Response Evaluation (EN06)	273
<i>Mario Dolera</i>	
Pharmacodynamics of Insulin Detemir and Insulin Glargine (300 U/ml) in Healthy Dogs (EN07)	274
<i>Heidi Fink</i>	
Impact of an Auditory Stimulus on Baseline Cortisol Concentrations in Clinically Normal Dogs (EN08)	275
<i>Taylor Gin</i>	
Diabetic Remission in Cats Examined in UK Primary-Care Veterinary Practices: Occurrence and Risk Factors (EN09).....	277
<i>Ruth Gostelow</i>	
One-Year Prospective Randomized Trial Comparing Efficacy of Glargine and Protamine Zinc Insulin in Diabetic Cats (EN10).....	278
<i>Ruth Gostelow</i>	
Biochemical Markers of Bone Turnover in Dogs with Naturally Occurring Hyperadrenocorticism (EN11).....	279
<i>Eilidh Gunn</i>	
A Comparison of Intact Parathyroid Hormone Assays for Use in Dogs (EN12).....	280
<i>Eilidh Gunn</i>	
Predicted Ionized Calcium Can Accurately Confirm Hypo/Hypercalcemia in Dogs, Even with Missing Biochemistry Values (EN13)	281
<i>Kevin Le Boedec</i>	
Serum Symmetric Dimethylarginine Concentrations in Hyperthyroid Cats with and without Azotemic Chronic Kidney Disease (EN14).....	282
<i>Tim Williams</i>	
Increased Adipocyte Size and Leukocyte Infiltration in Adipose Tissue of Obese Dogs (EN15)	283
<i>Carolina Z. Cavalcante</i>	
Lipid Peroxidation in Obese Dogs Before and After the Weight Loss Program (EN16)	285
<i>Carolina Z. Cavalcante</i>	

RESEARCH ABSTRACTS – POSTER PRESENTATIONS

Evaluation of Corticotropin (Actheleal) Effect iIn the ACTH Stimulation Test in Dogs with Hyperadrenocorticism (EN17).....	286
<i>Priscila V. Furtado</i>	

Evaluation of Triglycerides, Cholesterol and Glucose in Dogs with Mastocytoma Submitted to Surgery and Chemotherapy (EN18)	287
<i>Eric V. Januário</i>	
Retrospective Incidence of Hyperthyroidism in Domestic Cats at a Veterinary Hospital of São Paulo, Brazil (EN19).....	288
<i>Marcia Jericó</i>	
Alterations in the Hormones Regulating Blood Glucose Concentrations in Healthy Dogs Undergoing Hydrocortisone Administration (EN20).....	289
<i>Hakhyun Kim</i>	
Persistent Hypertonicity in Diabetic Dogs (EN21).....	290
<i>Thomas Schermerhorn</i>	
Serum 25-Hydroxyvitamin D Concentrations in Dogs with Acute Pancreatitis (EN22).....	291
<i>Purum Son</i>	
Clinical Relationship Between Cholestatic Disease and Pituitary-Dependent Hyperadrenocorticism in Dogs: A Retrospective Analysis (EN23).....	292
<i>Woo-Jin Song</i>	
Usefulness of Thyrotropin Stimulation Test in Dogs with Hypothyroidism, Non-thyroidal Illness, or Receiving Hydrocortisone (EN24)	293
<i>Chan-Joo Sung</i>	
Effect of Freezing on Biological Activity of Depot Tetracosactide in Healthy Dogs (EN25).....	294
<i>Aline B. Vieira</i>	
Evaluation of the Clinical Accuracy of 6 Portable Blood Glucose Meters in Dogs (EN26).....	295
<i>Jiyeon Yun</i>	
Relationship of the Mucosal Microbiota to Inflammation and Disease Activity in Cats with Intestinal Lymphoma (GI01).....	296
<i>Kayode Garraway</i>	
Effects of Akkermansia muciniphila Supplementation on Markers of Intestinal Permeability in Dogs Following Antibiotic Treatment (GI02)	297
<i>Maria C. Jugan</i>	

RESEARCH ABSTRACTS – ORAL PRESENTATIONS

The Impact of Oral Tylosin on the Fecal Microbiota of Healthy Dogs (GI03).....	298
<i>Alison C. Manchester</i>	
Prognostic Indicators in Dogs with Extrahepatic Bile Duct Obstruction Secondary to Pancreatitis (GI04).....	299
<i>Shannon Palermo</i>	
IL-1beta Protein Expression is Increased in Biopsies of Dogs with Severe Inflammatory Bowel Disease (GI05)	300
<i>Karin Allenspach</i>	
Histologic Findings in Endoscopically Derived Intestinal Biopsies from Clinically Healthy Cats (GI06)	301
<i>Sina Marsilio</i>	
Effect of the Bile Acid Sequestrant Cholestyramine on Fecal Bile Acid Concentrations in Healthy Dogs (GI07).....	302
<i>Blake C. Guard</i>	
Fecal Fatty Acid Concentrations in Dogs with Exocrine Pancreatic Insufficiency Receiving Enzyme Supplementation (GI08).....	303
<i>Julia B. Honneffer</i>	
Ki-67/CD3 Index in Canine Inflammatory Bowel Disease (GI09)	304
<i>Sonja Karlovits</i>	
Videofluoroscopic Swallow Study Features of Obstructive Lower Esophageal Sphincter Disorders in Dogs (GI10)	305
<i>Megan Grobman</i>	
Effect of An Extruded Vegetable Diet on Fecal Microbiota of Dogs with Food-Responsive Enteropathy (GI11).....	306
<i>Yasushi Minamoto</i>	
Evaluation of Hydromorphone and Dexmedetomidine for Emesis Induction in Cats (GI12).....	307
<i>Mike Nystrom</i>	
Identification of Jejunal Lesions in Dogs Using Capsule Endoscopy (GI13).....	308
<i>Jill S. Pomrantz</i>	
Platelet Function and Endoscopic Changes after Clopidogrel, Aspirin, Prednisone, or Combination Therapy in Dogs (GI14)	309
<i>Jacqueline Whittemore</i>	
Prevalence of Hypoadrenocorticism in Dogs with Chronic Gastrointestinal Signs (GI15).....	310
<i>Stefan Unterer</i>	
Oral Cobalamin Supplementation in Dogs with Exocrine Pancreatic Insufficiency (GI16).....	311
<i>Linda Toresson</i>	
Development of a Canine Intestinal Organoid Model (GI17).....	312
<i>Andre Meneses</i>	
Administration of Enterococcus faecium NCIMB 10415 to Normal Dogs Does Not Change Their Fecal Microbiota (GI18).....	313
<i>Linda A. Matthewman</i>	

Comparison of Maropitant to Metoclopramide Prior to Orogastic Administration of Polyethylene Glycol Solution in Dogs (GI19)	315
<i>David C. Grant</i>	
The Role of Pore-Forming Toxins in Dogs with Acute Hemorrhagic Diarrhea Syndrome (GI20).....	316
<i>Kathrin Busch</i>	
Serum 3-Bromotyrosine Concentrations in Dogs with Chronic Enteropathy (GI21)	317
<i>Jorg M. Steiner</i>	
Eosinophil Peroxidase Monoclonal Antibody Labels Intact and Degranulated Eosinophils in the Gastrointestinal Tract (GI22)	318
<i>Robert Washabau</i>	
Pilot Evaluation of the Effect of Omeprazole on the Feline Fecal Microbiome and Metabolome (GI23).....	319
<i>Sarah M. Schmid</i>	
Serum Biomarkers of Oxidative Stress as a Marker of Inflammatory Bowel Disease in Dogs (GI24).....	320
<i>Karin Allenspach</i>	

RESEARCH ABSTRACTS – POSTER PRESENTATIONS

Analytical Validation of an Enzymatic Assay for Measurement of Fecal D- and L-Lactate in Dogs (GI25).....	321
<i>Amanda Blake</i>	
Dogs with Exocrine Pancreatic Insufficiency have Dysbiosis and Abnormal Fecal Lactate and Bile Acid Concentrations (GI26)	322
<i>Amanda Blake</i>	
Analytical Validation of a Radioimmunoassay for the Measurement of Soluble CD25 Concentrations in Canine Serum (GI27).....	323
<i>Agostino Buono</i>	
Fecal Microbial Transplantation Decreases the Dysbiosis Index in Dogs Presenting with Chronic Diarrhea (GI28)	324
<i>Jennifer Chaitman</i>	
Fecal Short Chain Fatty Acid Collection, Storage and Variability in Healthy Dogs (GI29)	325
<i>Anne-claire Duchaussoy</i>	
Immunohistochemical Distribution of TGR5 Bile Acid Receptors in the Gastrointestinal Tract of Dogs (GI30).....	326
<i>Paula R. Giarettta</i>	
Immunolocalization of TGR5 Bile Acid Receptors in the Colon of Dogs with Chronic Enteropathy (GI31)	327
<i>Paula R. Giarettta</i>	
Enteropathogenic Escherichia Coli Is Associated with Diarrheal Mortality and Intestinal Inflammation in Foster-Age Kittens (GI32).....	328
<i>Victoria Watson</i>	
Development and Analytical Validation of an Assay for the Quantification of Canine Fecal Bile Acids (GI33).....	329
<i>Blake C. Guard</i>	
Longitudinal Characterization of the Fecal Metabolome in Dogs with Inflammatory Bowel Disease (GI34)	330
<i>Blake C. Guard</i>	
Longitudinal Assessment of Fecal Sterol and Fatty Acid Concentrations in Dogs with Diarrheal Diseases (GI35).....	331
<i>Julia B. Honneffer</i>	
Validation of an Assay for Quantification of Sterol and Fatty Acid Concentrations in Dog Feces (GI36)	332
<i>Julia B. Honneffer</i>	
Longitudinal Assessment of Fecal Dysbiosis in Dogs with Acute and Chronic Diarrhea (GI37)	333
<i>Hannah L. Klein</i>	
Fecal Microbiota and Body Condition in Growing Beagle Dogs Fed Unrestrictedly for 3.5h Daily (GI38).....	334
<i>Lucie Leclerc</i>	
Evaluation of the Fecal Microbiota in Cats with Chronic Enteropathy Before and After Treatment (GI39)	335
<i>Sina Marsilio</i>	
Platelet Indices as Markers of Disease Presence and Severity in Dogs with Inflammatory Bowel Disease (GI40).....	336
<i>Susan O. Meakin</i>	
Comparison of Serum Lipoprotein Profiles Between Cats with Hepatic Lipidosis and Healthy Control Cats (GI41)	338
<i>Tomomi Minamoto</i>	
Ileal and Colonic Mucosal Microbiota in Dogs with Steroid Responsive Chronic Enteropathy (GI42)	339
<i>Yasushi Minamoto</i>	
Effects of Prednisolone Administration on Pancreatic Tissue and Pancreatic Lipase Immunoreactivity Concentration in Healthy Dogs (GI43)	340
<i>Hiroshi Ohta</i>	
Corticosteroid Therapy as Initial Treatment for Dogs with Acute Pancreatitis: 65 Cases (2011-2016) (GI44)	341
<i>Hiroki Okanishi</i>	
Fecal Composition in Dogs with Naturally Occurring Exocrine Pancreatic Insufficiency (GI45)	342
<i>Joseph Parambath</i>	
Genome-Wide Association Study in German Shepherd Dogs with IBD Reveals Possible Role of TH2 Cytokines (GI46)	343
<i>Atiyeh Peiravan</i>	
Capsule Endoscopy Findings in Dogs with Hypoalbuminemia (GI47)	344
<i>Jill S. Pomrantz</i>	

Canine Adipose Tissue-derived Mesenchymal Stem Cells Reduce Severe Acute Pancreatitis by Regulating T Cells (GI48).....	345
<i>Woo-Jin Song</i>	
Likelihood and Outcome of Esophageal Perforation Associated with an Esophageal Foreign Body in Dogs (GI49)	347
<i>Allyson Sterman</i>	
The Effect of Prolonged Ambient Temperature Exposure on the Feline Fecal Microbiota (GI50).....	348
<i>Moran Tal Gavriel</i>	
Effects of Donor Sex And Pre-Conditioning on Cytokine Production of Canine Adipose-Derived Mesenchymal Stem Cells (GI51).....	349
<i>Tracy Webb</i>	
Effects of Provable-DC® on Clinical Signs, Fecal Microbiomes, and Metabolomic Profiles in Cats receiving Clindamycin (GI52).....	350
<i>Jacqueline Whittemore</i>	
Effects of Staggered Provable-DC® Administration on Fecal Microbiome and Metabolomic Profiles of Cats receiving Clindamycin (GI53)	351
<i>Jacqueline Whittemore</i>	
Serum IL-17 in Dogs with Immune-Mediated Hemolytic Anemia (HM01).....	352
<i>Benoit Cuq</i>	
Glutathione Peroxidase, Total Antioxidant Capacity, and Urinary F2-isoprostane Concentrations in Anemic Dogs (HM02).....	353
<i>Allison Kendall</i>	

RESEARCH ABSTRACTS – ORAL PRESENTATIONS

The Effect of Yunnan Baiyao on the Kinetics of Hemostasis in Healthy Dogs (HM03).....	355
<i>Robin MacRae</i>	
Prestorage Leukoreduction Attenuates Neutrophil Extracellular Trap Formation in Canine Stored Packed Red Blood Cell Units (HM04)	356
<i>Erin R. McQuinn</i>	
Retrospective Analysis of Length of Glucocorticoid Treatment in 77 Cases of Canine Autoimmune Blood Disorders (HM05).....	357
<i>Nicole Puza</i>	
Erythrocyte Damage and In-Line Pressure Changes Associated with Transfusion of Canine Blood Through Microaggregate Filters (HM06)	358
<i>Katie Cooley-Lock</i>	
Analytical Validation of a Flow Cytometric Protocol for Circulating Platelet Microparticle Quantification in Dogs (HM07).....	359
<i>Signe E. Cremer</i>	
Flow Cytometric Platelet Microparticle Quantification in Cats with Mild Cardiomyopathy (HM08)	360
<i>Signe E. Cremer</i>	
Diagnosis and Clinical Outcome Associated with a Leukemoid Response in Dogs: 81 cases (2006-2016) (HM09)	361
<i>Blakeley W. Janacek</i>	
Immediate Post-Transfusion Survival of Biotinylated Canine Red Blood Cells with Various Transfusion Techniques (HM10).....	362
<i>Pamela Y. Martin</i>	
Markers of Oxidative Damage During Storage of Feline Packed Red Blood Cells (HM11).....	364
<i>Jennifer M. Reinhart</i>	
Adherence to Human Guidelines for Plasma Transfusions in Dogs and Cats: 154 Cases (HM12)	365
<i>Tom Taney</i>	
Antiplatelet Effects of Generic Clopidogrel Compared to Trade Name Clopidogrel (Plavix®) in Cats (HM13)	366
<i>Mays Malkawi</i>	
In Vivo Effects of 7.5% Hypertonic Saline Solution on Canine Whole Blood Coagulation Using Thromboelastography (HM14)	367
<i>Suyeon Baek</i>	

RESEARCH ABSTRACTS – POSTER PRESENTATIONS

In Vitro Inhibition and Detection of Canine Complement Activation in Canine Immune-Mediated Hemolytic Anemia (HM15)	370
<i>Daniela Hernandez Muguiro</i>	
Novel Thrombogenicity Examination of Whole Blood: Total Thrombus-Frmation Analysis System in Dogs (HM16).....	371
<i>Tomoko Iwanaga</i>	
Vaccination Behavior and Adverse Events in Dogs Treated for Primary Immune-Mediated Hemolytic Anemia (HM17).....	372
<i>Alaina K.B. Moon</i>	
Evaluation of Thromboelastography in Dogs with Heartworm Infection (HM18).....	373
<i>Seri Park</i>	
Characteristics of Hemostasis During Experimental <i>Ehrlichia canis</i> Infection in Laboratory Beagles (HM19).....	375
<i>Sarah Shropshire</i>	

Whole Blood Impedance Platelet Aggregometry in Healthy Greyhounds Compared to Healthy Beagles (HM20)	377
<i>Sarah Shropshire</i>	
Thawing Times and Hemostatic Proteins in Canine Fresh Frozen Plasma Using a Commercial Thawing Device (HM21).....	378
<i>Laurie Torkildsen</i>	
Clinical Evaluation of the QuickVet/RapidVet Feline Blood Typing Test (HM22).....	379
<i>Christiane Weingart</i>	
Characterization of Thrombocytosis in 715 Dogs (2011-2015) (HM23).....	380
<i>Andrew Woolcock</i>	
Biomarkers of Oxidative Stress and Redox Status of the Liver in Dogs with Liver Disease (HP01).....	381
<i>Caitlin Barry-Heffernan</i>	
Canine Cholangitis/Cholangiohepatitis: A Descriptive Study in 54 Dogs (2004-2014) (HP02)	382
<i>Jennifer L. Harrison</i>	

RESEARCH ABSTRACTS – ORAL PRESENTATIONS

Hepatic Fibrosis is Associated with Shortened Survival Times in Dogs with Chronic Hepatitis (HP03).....	383
<i>Christopher R. Dolan</i>	
Proteomic Analysis of Liver Tissue from Dogs with Chronic Hepatitis (HP04)	384
<i>Yuri A. Lawrence</i>	
Characterization of the Urine Metabolome of Dogs with Chronic Hepatitis (HP05)	385
<i>Yuri A. Lawrence</i>	
Hepatic Leptospiral Infections without Prominent Renal Involvement (HP06)	386
<i>Katie E. McCallum</i>	
Demographics and Histological Changes in a Cohort Group of Dogs with Abnormal Hepatic Copper Concentrations (HP07).....	388
<i>Tarini Ullal</i>	
Coagulation Abnormalities and Their Correlation to Use of Gelfoam® to Aid in Hemostasis During Laparoscopic Liver Biopsy in Dogs (HP08)	389
<i>Sara A. Wennogle</i>	
Bleeding Risk Assessment for Percutaneous Ultrasound Guided Hepatic Biopsy in Dogs and Cats (HP09)	390
<i>Michelle K. Pavlick</i>	
High-Throughput RNA Sequencing and Differential Gene Expression Analysis in Dogs with Chronic Hepatitis (HP10)	391
<i>Vera M. Eulenberg</i>	

RESEARCH ABSTRACTS – POSTER PRESENTATIONS

In Vitro Effects of Vitamin D on Phagocytosis, TLR4, and Cytokine Production in Healthy Dogs (IM01).....	392
<i>Jared Jaffey</i>	
Urban Environment and Odds of Canine Immune-Mediated Disease (IM02).....	393
<i>Unity Jeffery</i>	

RESEARCH ABSTRACTS – ORAL PRESENTATIONS

Immune Cells in the Nose and Oropharynx of Cats and Response to Mucosal Immune Stimulation (IM03)	394
<i>Steven Dow</i>	
The Use of a Combination-Drug Protocol Versus Glucocorticoids Alone for Treatment of Idiopathic Immune-Mediated Polyarthritidis (IM04)	395
<i>Sara Ravicini</i>	
Activation of Innate Immune Responses in Cat Leukocytes by a Liposomal TLR Ligand Immune Stimulant (IM05)	396
<i>Steven Dow</i>	
Validation of an Electrochemiluminescent Immunoassay for Measurement of Tumor Necrosis Factor-Alpha in Cat Serum (IM06).....	397
<i>Jonathan Lidbury</i>	

RESEARCH ABSTRACTS – POSTER PRESENTATIONS

A Flow Cytometric Study of CD4+CD25+FoxP3+ Regulatory T cells Changes in Canine Atopic Dermatitis (IM07)	398
<i>Chul Park</i>	
12/15 Lipoxygenase Deficiency Enhances the Development of Pneumonic Tularemia (IM08)	399
<i>Carmela Pratt</i>	
Feline Adipose Tissue-Derived Mesenchymal Stem Cells Reduce Inflammation by Secreting Soluble Factors (IM09)	400
<i>Woo-Jin Song</i>	

Presence of Naturally Occurring Circulating Anti- AAV8 and AAV9 Antibodies in Pet Dogs and Cats (IM10).....	401
<i>Andrew Specht</i>	
Serum from Some Pet Dogs and Cats Neutralizes AAV8 and AAV9 Mediated Gene Transduction (IM11).....	402
<i>Andrew Specht</i>	
Bartonella Seroepidemiology in Dogs from North America, 2008-2014 (ID01)	403
<i>Erin Lashnits</i>	
Impact of Immune Suppression on Dogs with Treated Select Vector Born Disease Agents (ID02)	404
<i>Masahiko Sato</i>	

RESEARCH ABSTRACTS – ORAL PRESENTATIONS

Immune Complex Dissociation Methods for Detecting Heartworm Antigen and Their Utility in Assessing Patient Samples (ID03).....	405
<i>Rick Alleman</i>	
Fecal Shedding of Parvovirus Following Modified Live Feline Panleukopenia Virus Vaccination in Adult Healthy Cats (ID04)	406
<i>Michèle Bergmann</i>	
Effects of a Liposome-TLR Mucosal Immune Stimulant on Kittens Infected with Feline Herpesvirus 1 (ID05).....	407
<i>Elena T. Contreras</i>	
Cell Block Cytology Applied to Sporotrichosis Diagnosis (ID06)	408
<i>Fernanda F. Gonsales</i>	
A Rapid In-Clinic Test Detects IgM Antibodies to Four Different Leptospira Serovars (ID07)	409
<i>Josh Lizer</i>	
Relationship Between Histoplasma Capsulatum Urine EIA Results and Outcome in Cats Treated for Histoplasmosis (ID08)	410
<i>Jennifer McGill</i>	
Prevalence and Phylogeography of Methicillin Resistant Staphylococcus spp. Carriage in Companion Animals in Brisbane, Australia (ID09).....	411
<i>Erika Meler</i>	
Prevalence of Vector-borne Diseases in Healthy Dogs in Oklahoma (ID10)	412
<i>Emma Rupert</i>	
Prevalence of Anaplasma phagocytophilum Infection in Feral Cats in Massachusetts (ID11).....	413
<i>Erin Galemore</i>	
Opportunistic Fungal Infections Associated with Cyclosporine Use in Dogs with Immune-Mediated Diseases (ID12)	414
<i>Brigitte McAtee</i>	

RESEARCH ABSTRACTS – POSTER PRESENTATIONS

Staging Feline Leukemia Virus Infections Using Quantitative p27 ELISA and Real-Time PCR Results (ID13).....	415
<i>Melissa Beall</i>	
Worldwide Clinic-Based Serologic Survey of FIV Antibody and FeLV Antigen in Cats (ID14)	416
<i>Jesse Buch</i>	
Evaluation of a Rapid Immunoassay for Point-of-Care Detection of Bacteria in Cat Urine (ID15)	417
<i>Julie K. Byron</i>	
Enterococcus faecium Inhibits Feline <i>T. foetus</i> Growth and Adhesion to Intestinal Epithelial Cells (ID16)	418
<i>Rachel E. Dickson</i>	
A Molecular Epidemiological Survey of Gammaherpesviruses in Domestic Cats in Japan (ID17).....	419
<i>Yasuyuki Endo</i>	
Minimal Inhibitory Concentrations of Antimicrobials Against <i>Escherichia coli</i> Isolated from Companion Animal Urinary Tract Infections (ID18).....	420
<i>Lacie Johansen</i>	
Effect of Doxycycline Administration on Antibodies Against Different <i>Borrelia burgdorferi</i> Peptides (ID19).....	421
<i>Michael R. Lappin</i>	
Performance of a Leishmanin Skin Test for the Diagnosis of Feline Leishmaniosis (ID20)	422
<i>Mary Marcondes</i>	
Evaluation of Dried Blood on Filter Paper for Amplification of <i>Ehrlichia canis</i> DNA from Dogs (ID21).....	423
<i>Yunus H. Ozekin</i>	
Clinical and Laboratory Findings in 30 Dogs Naturally Infected with <i>Ehrlichia ewingii</i> (ID23)	424
<i>Barbara Quroollo</i>	
Fluorescent in Situ Hybridization in Tissues from Dogs with Proliferative Urethritis (NU01).....	425
<i>Moria Borys</i>	
Vitamin D Metabolism in Dogs with Calcium Oxalate Urolithiasis (NU02).....	426
<i>Elizabeth Groth</i>	

RESEARCH ABSTRACTS – ORAL PRESENTATIONS

Risk Factors for Urinary Tract Infections in Cats After Ureteral Stent and Ureteral Bypass Placement (NU03).....	427
<i>Lucy Kopecky</i>	
Concentrated Alkaline Urine is Hostile to Uropathogenic E. coli Growth (NU04).....	428
<i>Laura Thornton</i>	
Correlation Between Canine Urine Cortisol-Creatinine and Protein-Creatinine Ratios Collected at Home and in Hospital (NU05)	429
<i>Lindsey E. Citron</i>	
Application of Peritoneal Dialysis in Companion Animals in Turkey (NU06).....	430
<i>Nevra Keskin</i>	
Predicted Ionized Calcium Better Reflects Calcium Homeostasis Than Total Calcium in Dogs with Renal Azotemia (NU07).....	431
<i>Kevin Le Boedec</i>	
Urine Protein to Creatinine Ratios of Proteinuric Canine Urine Samples Stored in Multiple Container Types (NU08).....	432
<i>Patrick Moyle</i>	
Evaluation of Gastric pH and Serum Gastrin Concentrations in Cats with Chronic Kidney Disease (NU09)	433
<i>M. Katherine Tolbert</i>	
Effect of High Sodium Diet on Urine Characteristics in Healthy Adult Dogs (NU10)	434
<i>Hui Xu</i>	
SDMA is a More Reliable Marker for Kidney Function in Cats and Dogs with Cancer (NU11)	435
<i>Murthy V. Yerramilli</i>	
Increased Water Intake and Hydration in the Domestic Cat Ingesting a Nutrient-Enriched Water (NU12)	436
<i>Brian Zanghi</i>	
Feline Serum Cytokines and Renal Alpha-Enolase Immunohistochemical Staining After Repeated Administration of a FVRCP Vaccine (NU13)	437
<i>Stacie Summers</i>	
Tamm-Horsfall Protein in Dogs with Natural Occurring Chronic Kidney Disease: A Marker of Progression? (NU14).....	439
<i>Fernanda Chacar</i>	

RESEARCH ABSTRACTS – POSTER PRESENTATIONS

Light and Electron Microscopic Analysis of Kidneys fom Dogs Infected with Angiostrongylus vasorum (NU15)	440
<i>Bernhard Gerber</i>	
Effect of Weight Gain in Dogs on Renal Function and Perfusion Assessed by Contrasted-Enhanced Ultrasound (NU16).....	441
<i>Daisy Liu</i>	
Evaluation of FGF-23 and Urinary Fractional Excretion of Phosphorus Ratio in Chronic Kidney Disease Dogs (NU17).....	443
<i>Cinthia Martorelli</i>	
Alpha-Enolase Staining Patterns in the Renal Tissues of Cats with and without Chronic Kidney Disease (NU18).....	444
<i>Shannon M. McLeland</i>	
Metabolomic Evaluation of Feline Urinary Diseases (NU19)	445
<i>Isabelle Jeusette</i>	
Comparison of Single, Averaged, and Pooled Urine Protein:Creatinine Ratios in Proteinuric Dogs Undergoing Medical Therapy (NU20)	446
<i>Sarah Shropshire</i>	
Retrospective Study of the Efficacy of Oral Potassium Supplementation in Cats with Chronic Kidney Disease (NU21).....	447
<i>Liberty Sieberg</i>	
Serum Concentrations of Symmetric Dimethylarginine in Dogs with Dehydration (NU22)	448
<i>Seungji Woo</i>	
Effect of Antioxidant Supplementation on Markers of Oxidative Stress and Clinical Outcome in Hospitalized Dogs (NM01).....	449
<i>Danielle Hagen</i>	
Voluntary Food Ingestion in Dogs Following Intestinal Surgery (NM02)	450
<i>Christopher Kennedy</i>	

RESEARCH ABSTRACTS – ORAL PRESENTATIONS

Measurement of Body Composition and Body Water Using Quantitative Magnetic Resonance in Preweaning Puppies (NM03)	451
<i>Julie K. Spears</i>	
Hypocholesterolemia in Cats: A Retrospective Study of 48 Cases (NM04)	452
<i>Claudia A. Bowman</i>	

Effect of a Commercially Available Probiotic on Immune Responses in Healthy Dogs (NM05)	453
<i>Michael R. Lappin</i>	

RESEARCH ABSTRACTS – POSTER PRESENTATIONS

Behavior and Health in Aged Dogs Fed a Food with Antioxidants, Phytonutrients and Fatty Acids (NM06).....	454
<i>Heidi Shiefelbein</i>	
Behavior and Health in Aged Cats Fed a Food with Antioxidants, Phytonutrients and Fatty Acids (NM07)	455
<i>Heidi Shiefelbein</i>	
Factors in Successful IV Catheterization of Patients by Veterinary Students in the Emergency Room (OT01).....	456
<i>Shannon Babyak</i>	
Vasopressor Use in Critically Ill Cats 41 Cases (2007- 2015) (OT02).....	457
<i>Nikki Licht</i>	

RESEARCH ABSTRACTS – ORAL PRESENTATIONS

Evaluation of Middle Ear in Cats with Eustachian Tube Obstruction (OT03).....	458
<i>Nevra Keskin</i>	
Radial and Coccygeal Artery Indirect Doppler Systolic Blood Pressure Measurements in Privately-Owned, Conscious Dogs (OT04).....	459
<i>Allison Mooney</i>	
Hemodynamic and Cardio-Respiratory Effects of an Infusion of Fentanyl, Ketamine and Lidocaine in Canines (OT05).....	460
<i>Luis A. Vergara Saldarriaga</i>	
Effect of Corticosteroids on Plasma Protein Binding of Mycophenolic Acid in Dogs and Cats (P01).....	462
<i>Alice Morassi</i>	

RESEARCH ABSTRACTS – POSTER PRESENTATIONS

Assessment of Safety, Toxicity, and Pharmacokinetics of Cannabidiol in Healthy Dogs (P02)	464
<i>Lisa Bartner</i>	

RESEARCH ABSTRACTS – ORAL PRESENTATIONS

Concentration-Dependent Effects of Mycophenolic Acid on Canine Lymphocytes (P03).....	465
<i>Charlee Mulligan</i>	
Pharmacokinetics of Mycophenolic Acid after Multi-Oral Dose Administration of Mycophenolate Mofetil in Healthy Cats (P04).....	467
<i>Jennifer Slovak</i>	
Limited Sampling Strategy to Determine Mirtazapine Pharmacokinetics in Cats with Liver Disease and Age-Matched Controls (P05).....	468
<i>Kellyi Benson</i>	
Antiacidic Effect of Intravenous Esomeprazole Twice a Day with Two Different Doses in Beagle Dogs (P06)	469
<i>Yoora Cho</i>	

RESEARCH ABSTRACTS – POSTER PRESENTATIONS

Pharmacokinetics and Antacid Efficacy of Esomeprazole After Intravenous, Oral and Subcutaneous Administration to Beagle Dogs (P07)	471
<i>Jae Geum Cho</i>	
Prediction of Platelet Responsiveness to Aspirin and Fluoride Effects on Esterase Activity in Healthy Dogs (P08)	474
<i>Jillian M. Haines</i>	
Pharmacokinetics of an Orally-Disintegrating Sildenafil Film After Oral and Rectal Routes Administration to Beagle Dogs (P09).....	476
<i>Hwaran Hong</i>	
Safety of Mirtazapine 2% Transdermal Ointment Administered Topically to Cats at 5mg/kg for 28 days (P10)	478
<i>Allyson Avenatti</i>	
Double-Blind, Placebo-Controlled, Randomized Study of Transdermal Mirtazapine Ointment for the Management of Feline Weight Loss (P11).....	479
<i>Kristy Longpre</i>	
Single Dose Pharmacokinetics Following Transdermal and Oral Administration of Mirtazapine 2% Transdermal Ointment in Cats (P12)	481
<i>Beasley Mason</i>	
Multiple Dose Pharmacokinetics of Mirtazapine 2% Transdermal Ointment in Cats (P13).....	482
<i>Melinda Poole O'Banion</i>	

Oral Mycophenolate Mofetil Dose Escalation Trial Assessing Adverse Effects and Pharmacodynamic Responses in Normal Dogs (P14)	483
<i>Charlee Mulligan</i>	
Functional Evaluation of the Canine CYB5R3 A729G Single Nucleotide Polymorphism Associated with Sulfonamide Hypersensitivity (P15)	485
<i>Jennifer M. Reinhart</i>	
Recovery of T-Cell Function in Healthy Dogs Following Cessation of Cyclosporine Therapy (P16).....	486
<i>John M. Thomason</i>	
Effect of Oral Yunnan Baiyao on Periprocedural Hemorrhage and Coagulation in Dogs Undergoing Nasal Biopsy (R01).....	488
<i>Lauren Adelman</i>	
Bacterial Infection in Canine Tracheal Collapse Syndrome Patients Prior to, and Following, Tracheal Stent Placement (R02).....	491
<i>Sylvia Lesnikowski</i>	

RESEARCH ABSTRACTS – ORAL PRESENTATIONS

Oral Probiotic Bacterial Species Can Colonize the Healthy Feline Airway Microbiota (R03)	492
<i>Aida I. Vientos Plotts</i>	
Thoracic Radiograph Findings in Feline Histoplasmosis (R04).....	493
<i>Lauren Kuzimski</i>	
Frequency of Bronchoalveolar Lavage Hemosiderosis in 171 Dogs and 34 Cats with Respiratory Disease (2007-2016) (R05)	494
<i>Kimberly Hooi</i>	
Lung Lobe Torsion in 39 Dogs and Cats (2004-2016) (R06).....	495
<i>Kathryn Benavides</i>	

RESEARCH ABSTRACTS – POSTER PRESENTATIONS

Fluoroscopic Estimation of Thoracic Dimensional Changes in Healthy Dogs (R07).....	496
<i>Jennifer Chan</i>	
Exposure to Second-Hand Smoke in Pets from Different Socioeconomic Backgrounds (R08).....	497
<i>Nichole Smith</i>	
Quantification of Left Atrial Wall Motion in Healthy Horses Using Two Dimensional Speckle Tracking (E01).....	498
<i>Christina Eberhardt</i>	
Effect of Flecainide on Atrial Fibrillatory Rate in Horses with Induced Atrial Fibrillation (E02)	499
<i>Eva Z. Hesselkilde</i>	

RESEARCH ABSTRACTS – ORAL PRESENTATIONS

Reduced Exercise Capacity in Horses Due to Atrial Fibrillation (E03)	501
<i>Rikke Buhl</i>	
Antiarrhythmic Effects of Flecainide on Experimentally Induced Atrial Fibrillation of Different Duration in Horses (E04).....	502
<i>Eva Z. Hesselkilde</i>	
Beat-to-Beat Heart Rate Variability During Ridden Exercise in Healthy Horses (E05).....	503
<i>Patricia Egli</i>	
Corticotropin Releasing Hormone in Foals with Adrenocortical Insufficiency (E06).....	504
<i>Katarzyna Dembek</i>	
Immunohistochemical Expression of Insulin, Glucagon and Somatostatin in Pancreatic Islets from Insulin Resistant Horses (E07)	505
<i>Nicholas Frank</i>	
Equine Breed Specific Insulin/Glucose Dynamics During Frequently Sampled Intravenous Glucose Tolerance and Oral Sugar Tests (E08).....	506
<i>Jane M. Manfredi</i>	
EquineBreed Histologic Differences in Adipocytes and Muscle Related to Insulin Dynamics and Body Fat (E09).....	507
<i>Jane M. Manfredi</i>	
Shared Genetic Loci Underlying Equine Metabolic Syndrome in Welsh Ponies and Morgan Horses (E10)	508
<i>Elaine Norton</i>	
Effect of Age and Diet on Insulin and Glucose Dynamics in Horses (E11).....	509
<i>Sarah Jacob</i>	
Fecal Bile Acids, Sterols and Fatty Acid Concentrations in Healthy and Obese Horses (E12)	510
<i>Rodolfo G. Madrigal</i>	
Eosinophilic Peritonitis in 8 Horses (1995-2015) (E13)	511
<i>Fauna L. Smith</i>	
The Effects of Metronidazole on the Equine Cecal and Fecal Microbiome and Metabolome (E14)	512
<i>Carolyn E. Arnold</i>	

Effect of Age and Cortisol on Equine Dendritic Cells after Exposure to Bacteria Ex Vivo (E15)	513
<i>Brina Gorham</i>	
Blood Neutrophil Activation Markers in Equine Asthma Syndrome and Impact of Dexamethasone (E16)	514
<i>Nicolas Herteman</i>	
Use of Serum Amyloid A to Differentiate Between Infectious and Non-Infectious Diseases in Horses (E17)	515
<i>Fiona M. Wensley</i>	
Fecal Shedding Prevalence of Equine Coronavirus In Hospitalized Horses (E18)	516
<i>So Young Kwon</i>	
Investigation of an Experimental Infection Model of Equine Coronavirus in Adult Horses (E19)	517
<i>Emily A. Schaefer</i>	
Investigation of Shedding Frequency of Respiratory Pathogens in Horses Recently Imported to the United States (E20)	518
<i>Fauna L. Smith</i>	
Does Vaccinating Mares Prior to Parturition Increase Colostral Antibody Transfer to Foals? (E21)	519
<i>John Haffner</i>	
Utility of Acute Phase Proteins in Equine Protozoal Myeloencephalitis and Other Equine Nervous System Diseases (E22)	521
<i>Neil S. Mittelman</i>	
Expression and Sequence of Calcium Regulatory Micropeptides in Equine Skeletal Muscle: Implications for Exertional Rhabdomyolysis (E23)	522
<i>Stephanie Valberg</i>	
Identification of Candidate Genes for Recurrent Exertional Rhabdomyolysis in Thoroughbreds and Standardbreds (E24)	523
<i>Samantha K. Beeson</i>	
Foal Survival Score Can Predict Disease Severity in Neonatal Foals (E25)	524
<i>Katarzyna Dembek</i>	
Pharmacokinetic and Biochemical Profiles After Single Administration of Oral Torsemide in Healthy Horses (E26)	525
<i>Gustavo Ferlini Agne</i>	
Pharmacodynamic Properties of Oral Torsemide in Healthy Horses (E27)	526
<i>Gustavo Ferlini Agne</i>	
Diarrhea in Horses Treated for Lower Respiratory Tract Disease with Macrolides Versus Other Antimicrobials (2000-2015) (E28)	527
<i>Emily John</i>	
Pharmacokinetics of Intravenous Lithium Chloride and Agreement Between Two Methods of Lithium Measurement in Horses (E29)	528
<i>Lynn M. Martin</i>	
Ocular Tissue Concentrations and Safety after Subconjunctival Injection of a Voriconazole Thermogel in Horses (E30)	530
<i>Mariano Mora Pereira</i>	
Comparison of Respiratory Inductive Plethysmography and Forced Oscillatory Mechanics to Measure Airway Hyperreactivity in Horses (E31)	531
<i>Claire E. Dixon</i>	
Effect of Valacyclovir on EHV-5 Viral Kinetics in Horses Diagnosed with Equine Multinodular Pulmonary Fibrosis (E32)	532
<i>Charlotte A. Easton-Jones</i>	
Relationship Between Tracheobronchoscopic EIPH Score and Bronchoalveolar Lavage Erythrocyte Count in Horses (E33)	533
<i>Carolina Lopez</i>	
Prevalence of Exercise-Induced Pulmonary Hemorrhage in Barrel Racing Horses in the Pacific Northwest (E34)	534
<i>Jenifer R. Gold</i>	
Prevalence of Cardiac Arrhythmias in Competition Draft Horses (E35)	535
<i>Lisanne Gallant</i>	
Beat-to-Beat Heart Rate Variability During Treadmill Exercise in Healthy Horses and Horses with Cardiac Disease (E36)	536
<i>Ladina Frick</i>	

RESEARCH ABSTRACTS – POSTER PRESENTATIONS

Simpson's Method of Discs in Argentina-Chair Horse: Echocardiographic Reference-Intervals for End-Diastolic and End-Systolic Left-Ventricle Volumes (E37)	537
<i>Jeff Munoz-Pérez</i>	
Equine Pituitary Pars Intermedia Dysfunction in the Southern Hemisphere, What is Different? (E38)	538
<i>François-René Bertin</i>	
Hair Cortisol Concentration as a Stress Biomarker in Horses (E39)	539
<i>Maria Carolina Duran Graeff</i>	
The Association Between Endocrine Disrupting Chemicals and Equine Metabolic Syndrome (E40)	540
<i>Sian Durward-Akhurst</i>	

Clinical Signs Associated with PPID in the Equine Athlete (E41)	541
<i>Johanna Kremburg</i>	
Assessment of Prolactin Concentration as a Screening Test for PPID (E42)	542
<i>Harold C. Schott, II</i>	
Adrenocorticotrophic Hormone Levels in Equine Plasma After Centrifugation at Multiple Time-Points From Collection (E43)	543
<i>Kayla Shepard</i>	
Effects of Dexamethasone on Circulating ACTH and Cortisol Concentrations in Healthy and PPID-Affected Horses (E44)	544
<i>Dorothy Whelchel</i>	
Evaluation of Dexamethasone to Prevent Post-Operative Ileus in 61 Horses with and without Intestinal Resection (E45)	545
<i>Kate F. McGovern</i>	
Acid-base Disorders in Diarrheic Calves and Horses: Comparison Between the Traditional and Physicochemical Approaches (E46)	546
<i>Cheryl Faso</i>	
Radiographic Evaluation of Compounded and Illegal Over-the-Counter Omeprazole Products (E47)	548
<i>Mark Wallace</i>	
Effects of TLR Agonist and Clarithromycin on Growth of <i>Rhodococcus equi</i> in Adult Equine Macrophages (E48)	550
<i>Tasha Likavec</i>	
Outcome of a Novel Vertebral Interbody Fusion Technique in Horses with Cervical Vertebral Compressive Myelopathy (E49)	551
<i>Yvette S. Nout-Lomas</i>	
Accuracy of Two Patient Registration Techniques for Neuronavigation-Guided Brain Biopsy in the Horse (E50)	553
<i>Lawrence Santestevan</i>	
Causes of Fatalities During FEI Three-Day Eventing (E51)	554
<i>Imogen Comyn</i>	
Effects of Endothelial Colony Forming Cell / PEG-Fibrinogen Scaffolds on Wound Healing in Horses (E52)	555
<i>Randolph L. Winter</i>	
Measured and Calculated Parameters of Global Oxygenation in Healthy Foals (E53)	556
<i>David M. Wong</i>	
A Randomized, Blinded, Controlled Crossover Study of Dipyrone to Control Fever in Horses (E54)	557
<i>Ryan Avenatti</i>	
A Controlled Study of the Clinical Safety of an Oral Formulation of Dipyrone in Horses (E55)	558
<i>Emily Sundman</i>	
In Vitro Effects of Tamoxifen on Equine Neutrophil Respiratory Burst and Phosphatidylserine Expression (E56)	559
<i>Carla Olave</i>	
Effects of Magnesium Sulfate Infusion on Lung Function and Clinical Scores in Severe Asthmatic Horses (E57)	560
<i>Ludovic Tanquerel</i>	
Comparison of Oral, Intravenous and Subcutaneous Fluid Therapy for Resuscitation of Calves with Diarrhea (F01)	561
<i>Vincent Dore</i>	
Variability of Bovine Leukemia Virus Bulk Tank Milk Antibody Levels over Different Sample Collection Intervals (F02)	562
<i>Emily John</i>	

RESEARCH ABSTRACTS – ORAL PRESENTATIONS

Comparison of Six On-Farm Tests to Estimate Somatic Cell Count at Dry-Off in Dairy Cattle (F03)	563
<i>Sahar A. Kandeel</i>	
Ability of Milk pH to Predict Increased Somatic Cell Count at Dry-Off in Dairy Cattle (F04)	564
<i>Sahar A. Kandeel</i>	
Clinical Utility of Four Point-of-Care Enzymatic Tests in Predicting Somatic Cell Count in Dairy Cattle (F05)	565
<i>Sahar A. Kandeel</i>	
Persistence of Coagulase Negative Staphylococcal Intramammary Infection in Dairy Goats (F06)	566
<i>Véronique Bernier Gosselin</i>	
Use of a Minimally Invasive Tube Cystostomy for the Management of Obstructive Urolithiasis in Goats (F07)	568
<i>Leslie F. Wagner</i>	
Clinical Utility of Measuring Plasma Fructosamine Concentration During Early Lactation in Dairy Cattle (F08)	569
<i>Ameer A. Megahed</i>	
Evaluation of a Portable Ion-Selective Electrode Meter for Measuring Sodium Concentration in Cattle Body Fluids (F09)	570
<i>Ameer A. Megahed</i>	
Ultrasonographic Determination of Longissimus Dorsi Muscle Thickness and Intramuscular Fat Percentage in Periparturient Dairy Cattle (F10)	571
<i>Ameer A. Megahed</i>	
Plasma Potassium-Lowering Effect of Different Hypertonic Infusion Solutions in Hyperkalemic Neonatal Diarrheic Calves (F11)	572
<i>Florian M. Trefz</i>	

Effect of Age on Distribution of Danofloxacin and Tulathromycin in Dairy Calves (F12)	573
<i>Danielle A. Mzyk</i>	
Cross-Sectional Study of Teat and Inguinal Skin Colonization of Dairy Heifers with Various Staphylococcal Species (F13)	574
<i>Pamela R.F. Adkins</i>	
Quantifying Stress in Primiparous and Multiparous Dairy Cattle Around Parturition (F14)	575
<i>Ameer A. Megahed</i>	

RESEARCH ABSTRACTS – POSTER PRESENTATIONS

Is Plasma L-lactate a Reliable Predictor of Non-Survival in Critically Ill Neonatal Calves? (F15)	576
<i>Florian M. Trefz</i>	
Management Strategies for the EMS Horse	577
<i>Megan Shepherd</i>	
The Equine Microbiome in Adults and Foals	580
<i>J. Scott Weese</i>	

AMERICAN ASSOCIATION OF VETERINARY NUTRITION/AMERICAN COLLEGE OF VETERINARY NUTRITION

Role of the Equine Microbiota in Health and Disease	584
<i>J. Scott Weese</i>	
Animal Supplement Regulations in the United States	587
<i>Bill Bookout</i>	
Immunologic, Structural and Functional Response to Intestinal Abstinence	592
<i>Korinn E. Saker</i>	
The Intestinal Microbiome: The Potential and the Promise	596
<i>Matthew D. Koci</i>	
Integrating Diagnostic Test Results for the Large Animal Internist Using Bayesian Thinking	599
<i>Sebastien Buczinski</i>	
Intramammary Therapy: Impact of Cow and Farm Management Factors	602
<i>Ted Whiteman</i>	

AMERICAN COLLEGE OF VETERINARY CLINICAL PHARMACOLOGY/AMERICAN ACADEMY OF VETERINARY PHARMACOLOGY AND THERAPEUTICS

Population Pharmacokinetics and Antiepileptics in Dogs and Cats	605
<i>Dawn M. Boothe</i>	
Medical Cannabinoids: Prophecy or Prayer?	612
<i>Dawn M. Boothe</i>	
Planning a Pharmacokinetic Study Without Elementary Mistakes	618
<i>Ted Whiteman</i>	
Pharmacogenetics of Idiosyncratic Drug reactions: Sulfonamide Hypersensitivity and Beyond	622
<i>Jennifer M. Reinhart</i>	
Individualizing the Use of NSAIDs in Cats: A Pharmacometabolomics Approach	626
<i>Nicolas F. Villarino</i>	
Canine Body Cavity Effusions: Classification and Differentials	630
<i>Andrea A. Bohn</i>	
Feline Body Cavity Effusions: Classification and Differentials	633
<i>Andrea A. Bohn</i>	

AMERICAN SOCIETY FOR CLINICAL PATHOLOGY

Synovial Fluid Review	638
<i>Paula M. Krimer</i>	
Cerebrospinal Fluid Review	643
<i>Paula M. Krimer</i>	
Hematology, Biochemistry and Iron of Aging	648
<i>Lauren B. Radakovich</i>	
Effects of Paraneoplastic Syndromes on Complete Blood Counts and Serum Chemistry Profiles	652
<i>Amy L. MacNeill</i>	
Biochemical Abnormalities with Cytologic/Hematologic Correlations in Dogs	659
<i>Rose E. Raskin</i>	
Biochemical Abnormalities with Cytologic/Hematologic Correlations in Cats	663
<i>Rose E. Raskin</i>	
Feline Calcium Oxalate Urolithiasis: What We Do - Can We Do Better?	666
<i>Joseph Bartges</i>	

Significance of Unique and Rare Uroliths	670
<i>Jody Lulich</i>	

AMERICAN SOCIETY OF VETERINARY NEPHROLOGY & UROLOGY

USMI or Urethral Dyssynergia in Male Dogs: Are We Misdiagnosing Them?	674
<i>Julie K. Byron</i>	
Diagnosis of Transitional Cell Carcinoma: A New Era	677
<i>Shelly Vaden</i>	
Fluid Therapy for AKI: Lessons From Animal Models and Humans.....	680
<i>J.D. Foster</i>	
Biofilms in the Urinary Tract.....	684
<i>Ewan D.S. Wolff</i>	
Novel Oral Anticoagulants: Human Medicine Perspective	687
<i>Stephan Moll</i>	
Novel Oral Anticoagulants: Veterinary Medicine Perspective.....	691
<i>Armelle deLaforcade</i>	

ASSOCIATION OF VETERINARY HEMATOLOGY AND TRANSFUSION MEDICINE

Year in Review: Transfusion Medicine.....	694
<i>Marie Holowaychuk</i>	
Controversies in Veterinary Blood Banking	698
<i>Sarah E. Musulin</i>	
Everyone's a Critic: Dealing with Negative Reviews and Cyberbullying	703
<i>Kimberly May</i>	
Preventative Care for your Online Reputation.....	707
<i>Kimberly May</i>	

BUSINESS MANAGEMENT

Primary Care Veterinary-Specialist Collaborative Care: Research Update, VetSOAP	713
<i>Saundra E. Willis</i>	
Growing Leaders in your Practice: What is a Leader?.....	716
<i>Wendy Hauser</i>	
Growing Leaders in your Practice: How to Cultivate Leadership	719
<i>Wendy Hauser</i>	
You're a Skilled Veterinarian...What's Next?.....	722
<i>Wendy Hauser</i>	
What Motivates You?	726
<i>Wendy Hauser</i>	
Giardia, Hookworms, Pythium and Other Small Bowel Parasites of the Dog and Cat	730
<i>Dwight D. Bowman</i>	
Tritrichomonas, Whipworms, and Other Large Bowel Associated Parasites of Dogs and Cats.....	734
<i>Kenneth W. Simpson</i>	

COMPANION ANIMAL PARASITE COUNCIL

Nutritional Management of Chronic Enteropathies.....	737
<i>Aarti Kathrani</i>	
Adopting Best Practices: Rational Therapy for Gastrointestinal Ulceration and Erosion	743
<i>M. Katherine Tolbert</i>	
Indications and Emerging Therapies for Use of Anti-emetics and Appetite Stimulants.....	747
<i>David Twedt</i>	
Animal Models of Human Disease.....	753
<i>James G. Fox</i>	

COMPARATIVE GASTROENTEROLOGY SOCIETY

Overdiagnosis: Don't Just Do Something, Stand There!	756
<i>Brennen McKenzie</i>	
Why Use Scientific Literature to Answer Clinical Questions?	760
<i>Robert (Bob) L. Larson</i>	
Reporting Quality and Risk of Bias in Veterinary Clinical Trials.....	764
<i>Brennen McKenzie</i>	

From Evidence-based Practice to Practice-based Evidence: The Electronic Health Record as a Platform for Clinical Decision Support	768
<i>Stuart W. Turner</i>	
Best of 2016 ISCAID Symposium, Bristol UK	774
<i>Annette L. Litster</i>	

EVIDENCE BASED VETERINARY MEDICINE ASSOCIATION

Diagnosing FIP: Has Recent Research Made It Any Easier?.....	778
<i>Emi Barker</i>	
Chagas Disease at the Canine-wildlife-human-vector Interface	784
<i>Sarah A. Hamer</i>	
Diagnostics and Management of Pyelonephritis	789
<i>Jodi L. Westropp</i>	
Ductal Plate Malformations	792
<i>Sharon A. Center</i>	

INTERNATIONAL SOCIETY FOR COMPANION ANIMAL INFECTIOUS DISEASES

Understanding Biliary Atresia: A One Health Story.....	798
<i>Rebecca G. Wells</i>	
Update on Pathogenesis of Gallbladder Mucoceles	802
<i>Jody L. Gookin</i>	
One Medicine in Action: Climate Changes, Vector Biology and Arthropod-Borne Viruses.....	808
<i>Sanjay Kapil</i>	
Climate Change and One Health: What About Tuberculosis in Populations?	809
<i>Dennis F. Lawler</i>	

LIVER STUDY GROUP

Real Time One Medicine Experience: Emerging Novel Viruses.....	812
<i>Sanjay Kapil</i>	
Pathobiome of Blood and Complex Disease Expression	813
<i>Edward B. Breitschwerdt</i>	

VOLUME 2

Endocrine Regulation of Appetite	818
<i>Audrey K. Cook</i>	

ONE MEDICINE

Endocrine Aspects of Obesity.....	822
<i>Thomas A. Lutz</i>	
Endocrine Causes of Hypertension in Cats	825
<i>Tim Williams</i>	
Feline Hyperaldosteronism.....	829
<i>Hans S. Kooistra</i>	
Evidence Based Regenerative Medicine for the Internist	832
<i>Andrew M. Hoffman</i>	

SOCIETY FOR COMPARATIVE ENDOCRINOLOGY

Next-generation Regenerative Medicine (Beyond Stem Cells): Exosomes and Extracellular RNA	836
<i>Andrew M. Hoffman</i>	
Respiratory Distress in Camelids: A Case Based Discussion	840
<i>Daniela Bedenice</i>	
Feline Bronchiolar Disease: Clinical Features and Ct/Histopathologic Correlates	844
<i>Kurt Williams</i>	
How Dysphagia Injures the Lung: An Overview of Cough-swallow Disorders	847
<i>Megan Grobman</i>	

VETERINARY COMPARATIVE RESPIRATORY SOCIETY (LARGE ANIMAL)

Bronchoalveolar Lavage: Picking Protocols to Match the Case	850
<i>Eleanor C. Hawkins</i>	

Using Airway Pressures and Lung Function in Clinical Practice.....	855
<i>Elizabeth Rozanski</i>	
Diagnosis and Management of Pulmonary Thromboembolism in Dogs.....	858
<i>Robert Goggs</i>	

VETERINARY COMPARATIVE RESPIRATORY SOCIETY (SMALL ANIMAL)

Heparin Monitoring in Critically Ill Dogs	867
<i>Rita M. Hanel</i>	
Prothrombotic Mechanisms in Critical Illness	872
<i>Alex Lynch</i>	
Thromboelastography at the Point of Care in ICU: Research Update	877
<i>Rita M. Hanel</i>	
NETs, Cell-free DNA and Biomarker Guided Therapy in Sepsis.....	880
<i>Robert Goggs</i>	
SIRS, MODS, and Sepsis 3.0: Where Are We Now?	885
<i>Deborah C. Silverstein</i>	
Antimicrobial Decision Making in Sepsis	891
<i>Alex Lynch</i>	

VETERINARY EMERGENCY AND CRITICAL CARE SOCIETY

Resuscitation of the Patient With Septic Shock	895
<i>Deborah C. Silverstein</i>	
Development of a Standardised, Individual, Submaximal Treadmill Exercise Test in Healthy and CHIEF B1/B2 Dogs.....	900
<i>Leona F. Wall</i>	
Implantable Cardiac Loop Recorders – a Novel Diagnostic Tool for Atrial Fibrillation Detection in Horses.....	901
<i>Rikke Buhl</i>	
Epigallocatechin-3-gallate Recouples Myofilament Calcium Sensitivity to Troponin I Phosphorylation in Feline Hypertrophic Cardiomyopathy	902
<i>David J. Connolly</i>	
Early Experiences with 3D Modeling and Printing of Hearts with Complex Cardiac Disease	904
<i>Susanne M. Steiger-Vanegas</i>	
Use of Moxidectin/Imidacloprid and Doxycycline For Non-Arsenical Heartworm Adulcidual Therapy	905
<i>Marisa K. Ames</i>	
Validation of a Quality of Life (QoL) Survey for Owners of Dogs with Heart Disease.....	906
<i>Lisa M. Freeman</i>	
Influence of Chronic Kidney Disease on Measurements of Cardiac Structure and Function in Dogs.....	907
<i>Melanie J. Hezzell</i>	

CARDIOLOGY

Accuracy of Angiographic Measurements During Transcatheter Procedures: Comparison of Two Calibration Methods in 25 Dogs	908
<i>Lauren E. Markovic</i>	
INSPECT Survey: An Initiative for Simple Pragmatic End-Point Clinical Trials in Veterinary Cardiology	909
<i>Brian A. Scansen</i>	
Unusual Causes and Complicated Clinical Courses in Congestive Heart Failure Patients	910
<i>Heidi B. Kellihan</i>	
The Great Pretender: Pulmonary Hypertension - Unusual Causes and Complicated Clinical Courses in Pulmonary Hypertension Patients	913
<i>Heidi B. Kellihan</i>	
Pathophysiology of Congestive Heart Failure: Beyond the Heart	916
<i>Yolanda Martinez Pereira</i>	
Syncope: A Review	920
<i>Fiona E. Meyers</i>	
Feeding for Two: Nutrition for the Cardiac Patient with Concurrent Diseases	925
<i>Lisa M. Freeman</i>	
Muscle Matters: Cardiac Cachexia in Dogs and Cats	929
<i>Lisa M. Freeman</i>	
Advanced ECG Interpretation.....	933
<i>N. Sydney Moise</i>	
Advanced Holter Analysis	938
<i>N. Sydney Moise</i>	
Electrophysiology and Ablation of Atrial Flutter	942
<i>Roberto A. Santilli</i>	

Diagnosis and Treatment of Accessory Pathway-mediated Arrhythmias	946
<i>Roberto A. Santilli</i>	
The Use of Three-dimensional Electroanatomic Mapping Systems for the Treatment of Supraventricular Tachycardia.....	950
<i>Sandy P. Tou</i>	
Classification of Congenital Heart Disease: Learning From Pathology.....	951
<i>Diane Spicer</i>	
Vascular Ring Anomalies: Using Cross-sectional Imaging to Guide Surgery.....	955
<i>Brian A. Scansen</i>	
The VALVE Study: Is Triple Therapy Superior to Double Therapy for Failure Treatment Due to Endocardiosis?	960
<i>Gerhard Wess</i>	
The Longitudinal Outcome of Canine Mitral Valve Disease (look-mitral) Study. Preliminary Results.....	963
<i>Michele Borgarelli</i>	
Feline Cardiomyopathy: New Perspectives	965
<i>Philip R. Fox</i>	
An Update and Paradigm Shift on Heartworm Resistance to Macroyclic Lactones: Where Have All the Loes Gone?	967
<i>Clarke Atkins</i>	
Cardiovascular Anesthesia	969
<i>Luisito S. Pablo</i>	
Echocardiography Vs. Radiography for the Diagnosis and Management of Heart Disease	973
<i>Deborah M. Fine-Ferreira</i>	
Point-of-care Thoracic Ultrasound in the Emergency Diagnosis of Congestive Heart Failure in Dogs and Cats.....	977
<i>Jessica L. Ward</i>	
Update on Congenital Heart Disease: Nomenclature	981
<i>Brian A. Scansen</i>	
Balloon Valvuloplasty for Subaortic Stenosis Update in Dogs: Who, How and Why?	985
<i>Mandi Kleman</i>	
SAS Update in Dogs: Practical Updates on Palliative Balloon Valvuloplasty	987
<i>Ashley Saunders</i>	
Cutting and High Pressure Balloon Valvuloplasty for Dysplastic Pulmonary Valve Stenosis in Dogs.....	988
<i>Brian A. Scansen</i>	
SAS Panel Discussion	991
<i>Amara H. Estrada</i>	
Emerging Surgical and Hybrid Interventions for Canine Structural Heart Disease	992
<i>Christopher Orton</i>	
The Molecular Etiology of Hansen's Type I Disc Disease Provides a Framework for Disease Elimination.....	996
<i>Danika L. Bannasch</i>	
Serum Levetiracetam Concentrations After Chronic Administration of Once Daily Extended-Release Levetiracetam in Healthy Cats.....	997
<i>Heidi L. Barnes Heller</i>	
Use of 3T Magnetic Resonance Imaging to Analyze Craniocervical Junction Cerebrospinal Fluid Flow in Cats	998
<i>Sofia Cerdá-González</i>	
Biomechanical Properties of Virgin PEEK, Glass-Fiber PEEK, and Carbon-Fiber-Reinforced PEEK in the Adamo Spinal Disc™	999
<i>Filippo Adamo</i>	
Evaluation of Risk Factors in the Development of Inflammatory Brain Disease in Dogs.....	1000
<i>Heidi L. Barnes Heller</i>	
Experimental Therapies for Canine Krabbe Disease	1001
<i>Allison Bradbury</i>	
Gene Therapy in Animal Models of the Gangliosidoses: From Presentation to Human Clinical Trials	1002
<i>Heather Gray-Edwards</i>	
AAV Gene Therapy Studies in the Feline Model of Niemann-Pick Type C	1004
<i>Brittney L. Gurda</i>	
Generating Novel Large Animal Models of Nervous System Disease for Therapeutic Study Using the CRISPR/Cas9 System	1005
<i>Brittney L. Gurda</i>	
Volumetric Modulated Arc Radiotherapy of Canine Trigeminal Nerve Tumors.....	1006
<i>Mario Dolera</i>	
Frameless Stereotactic Volumetric Modulated Arc Radiotherapy of Brachial Plexus Tumors in Dogs: 10 Cases	1007
<i>Mario Dolera</i>	
Electrophysiologic Quantification of Motor Neuron Pool Excitability in Chronically Paralyzed Dogs and Association with Gait	1008
<i>Melissa Lewis</i>	
Cochlear Changes in Dogs with Hereditary Deafness	1009
<i>Irem Gül Sancak</i>	
Diffusion Tensor Imaging Analysis of Severe Thoracolumbar Spinal Cord Injury in Chronically Paralyzed Dogs	1010
<i>Melissa Lewis</i>	

The Effect of Post-Operative Rehabilitation on Recovery from Acute Thoracolumbar Intervertebral Disc Herniations.....	1011
<i>Natasha Olby</i>	
Recognition and Therapy of Movement Disorders.....	1012
<i>Dennis P. O'Brien</i>	
C-reactive Protein in the Monitoring and Diagnosis of Diskopondylitis.....	1018
<i>William Bush</i>	
Comprehensive Epilepsy Management.....	1022
<i>Holger A. Volk</i>	

NEUROLOGY

Impact of New Radiation Therapy Technologies on the Management of Brain and Spinal Tumors.....	1025
<i>Susan M. LaRue</i>	
Hyperbaric Oxygen Therapy and Its Use in Neurology and Neurosurgery: Physiology and Applications With Examples.....	1029
<i>Anne E. Chauvet</i>	
Innervation of the Respiratory System and Neurogenic Causes For Breathing Problems in Our Patients	1032
<i>Devon W. Hague</i>	
I Want To Be a Veterinary Neurologist/Neurosurgeon: An In-depth Look at Working in Academia Vs. Private Practice	1035
<i>Belinda Comito</i>	
Preparing For the Feline Neurologic Examination.....	1040
<i>Amanda R. Taylor</i>	
Performing the Feline Neurologic Examination	1042
<i>Amanda R. Taylor</i>	
Feline Neurologic Cases of Intracranial Disease: Reviewing the Classic and Puzzling Over Unusual Case Presentations.....	1046
<i>Amanda R. Taylor</i>	
Feline Neurologic Cases of Spinal Cord Disease: Reviewing the Classic and Puzzling Over Unusual Case Presentations	1050
<i>Amanda R. Taylor</i>	
Electrodiagnostics: Review of Basic Concepts and Clinical Applications.....	1054
<i>Monica Aleman</i>	
Autophagy in Neurologic Disease	1057
<i>Dennis P. O'Brien</i>	
Autophagy and Its Therapy in Lysosomal Storage Diseases	1062
<i>Charles H. Vite</i>	
Grenadian CTVT: Data From Mitochondrial Genetic Diversity, Selection and Recombination in a Canine Transmissible Cancer.....	1067
<i>Anne M. Corrigan</i>	
Lymphoma and Symmetric Dimethylarginine Concentration in Dogs: A Preliminary Study.....	1068
<i>Anthony Abrams-Ogg</i>	
In Vitro Macrophage Polarization by Canine Osteosarcoma	1071
<i>Jonathan E. Fogle</i>	
Serum Inflammatory Cytokine Values in Cachectic and Non-Cachectic Cats with Cancer and Normal Cats.....	1072
<i>Erika L. Krick</i>	
Efficacy and Safety of Electrochemotherapy in the Treatment of Soft Tissue Sarcomas in Dogs	1073
<i>George Lubas</i>	
Evaluation of Chimeric Antigen Receptor T Cell Therapy in Dogs with B Cell Lymphoma.....	1076
<i>Nicola Mason</i>	
Survivin Inhibition with EZN-3042 for Canine Lymphoma Therapy: Phase-I Investigation.....	1077
<i>Douglas H. Thamm</i>	
Early Phase Translational Studies in Canine Lymphoma	1078
<i>William C. Kisseberth</i>	
Peripheral Blood Stem Cell Transplantation for the Treatment of Canine Hematologic Malignancies.....	1081
<i>Steven E. Suter</i>	
How Understanding DNA Methylation May Help Treat Lymphoma More Effectively	1088
<i>Jeffrey N. Bryan</i>	
Chemoimmunotherapy for Canine Lymphoma: Evidence for Efficacy 2017	1092
<i>Gregory K. Ogilvie</i>	
Diverse DNA Damage Response Mechanisms in Cancer: From Tumor Suppression to Therapeutic Targets	1097
<i>Kelly R. Hume</i>	
Molecular Diagnostics in Oncology	1100
<i>Chand Khanna</i>	
Clinical Impact and Management of Chemotherapy-induced Vomiting and Inappetence	1103
<i>Chad M. Johannes</i>	
Panel: The Economics of Veterinary Oncology: Opportunities and Challenges	1109
<i>Chad M. Johannes</i>	

Just Because We Can Doesn't Mean We Should: Anecdote vs. Evidence in Current Clinical Oncology	1113
<i>Carolyn J. Henry</i>	
Canine Non-hematopoietic Gastrointestinal Tumors	1117
<i>Angela E. Frimberger</i>	
The Node Knows: Importance of Lymph Node Status in Canine Mast Cell Tumors	1122
<i>Erika L. Krick</i>	
The Role of Radiation Therapy in the Management of Cardiac Tumors	1127
<i>Susan M. LaRue</i>	
Medical, Surgical & Radiation Oncology: Practical Approach to Diagnosis & Management of Osteosarcoma in Dogs & Cats	1131
<i>Sarah Boston</i>	
Medical, Surgical & Radiation Oncology: Approach to Diagnosis & Management of Feline Injection Site Sarcomas	1136
<i>Michelle Turek</i>	
Medical, Surgical & Radiation Oncology: Approach to Diagnosis & Management of Transitional Cell Carcinomas in Dogs & Cats	1140
<i>J. Paul Woods</i>	
Medical, Surgical & Radiation Oncology: Approach to Diagnosis & Management of Squamous Cell Carcinomas in Dogs & Cats	1144
<i>J. Paul Woods</i>	
The Principles of Lymphocyte Development and Lymphocyte Trafficking Support the Diagnosis of Lymphoma	1148
<i>Peter F. Moore</i>	

ONCOLOGY

The Principles of Lymphocyte Development and Lymphocyte Trafficking Support the Classification of Lymphoma	1152
<i>Peter F. Moore</i>	
Epigenetically-active Therapies for Osteosarcoma	1159
<i>Jeffrey N. Bryan</i>	
The Future of Small Animal Oncology Therapeutics	1163
<i>Chad M. Johannes</i>	
Advances in our Understanding of Metastasis Biology and Therapy	1169
<i>Chand Khanna</i>	
Novel Osteosarcoma Therapies	1171
<i>Douglas H. Thamm</i>	
Biology, Molecular Targets, and Clinical Interventions for Canine Osteosarcoma	1175
<i>Timothy M. Fan</i>	
Selective Osmotic Shock for Canine Pancreatic Islet Isolation	1178
<i>Christopher A. Adin</i>	
Novel Medical Approach to Canine Hyperadrenocorticism	1179
<i>Sara Galac</i>	
Assessment of Transdermal (Lipoderm) Mirtazapine as an Appetite Stimulant in Cats with Chronic Kidney Disease	1180
<i>Jessica Quimby</i>	
Relationship Between Fibroblast Growth Factor-23 and Survival in Dogs with Chronic Kidney Disease	1181
<i>Adam Rudinsky</i>	
Evaluation of Serum Thyroxine, Free Thyroxine, and Thyrotropin Concentrations for Diagnosis of Feline Iatrogenic Hypothyroidism	1182
<i>Mark E. Peterson</i>	
Evaluation of Fecal Canine Calprotectin as a Biomarker in Dogs with Chronic Inflammatory Enteropathies	1183
<i>Romy M. Heilmann</i>	
Expanded Panel of Cytometric Markers for Canine Immune Thrombocytopenia	1184
<i>Marjory Brooks</i>	
Cell-free DNA, a Potential Thrombosis Trigger, is Increased in Canine Immune-Mediated Hemolytic Anemia	1186
<i>Dana N. LeVine</i>	
Mutations Causing Feline Factor XII Deficiency in the United States	1187
<i>Haruhiko Maruyama</i>	
Performance of Four In-clinic Tests for Giardia Antigen Compared with Direct Immunofluorescence Assay	1189
<i>Dwight D. Bowman</i>	
Worldwide SNAP® 4Dx® and SNAP® 4Dx® Plus Clinic-Based Serologic Survey of Tick-Borne Diseases in Dogs	1190
<i>Jesse Buch</i>	
Prevalence of <i>Borrelia burgdorferi</i>, <i>Anaplasma</i> spp., <i>Ehrlichia</i> spp. and <i>Dirofilaria immitis</i> in Canadian Dogs, 2007-2016	1191
<i>Michelle Evason</i>	
Occurrence of Renal Azotemia and Associated Clinicopathological Findings in Canine Babesiosis	1193
<i>Pieter Defauw</i>	
P16Ink4a-Mediated Cellular Senescence is Increased in Geriatric Cats and Cats with Chronic Kidney Disease	1195
<i>Jessica Quimby</i>	
Raw Food Diets Alter the Microbiome and Metabolome of Dogs Compared to Commercial Diets	1196
<i>Jan S. Suchodolski</i>	

Ciprofloxacin Population Pharmacokinetics in Dogs after Oral Administration	1197
<i>Mark G. Papich</i>	
Gallbladder Halo Sign: Update on the Diagnosis and Complications in Canine Anaphylaxis	1199
<i>Gregory R. Lisciandro</i>	
AFAST, TFAST and Vet Blue Point-of-care Ultrasound for Traditionally Difficult Conditions	1203
<i>Gregory R. Lisciandro</i>	
Proactive Vet BLUE® Lung Ultrasound in Feline Respiratory Distress	1205
<i>Gregory R. Lisciandro</i>	
Global FASTSM: AFAST®, TFAST® and Vet BLUE® for Patient Monitoring	1209
<i>Gregory R. Lisciandro</i>	
Selection, Delivery, and Monitoring of Transfusion in Cats and Dogs	1213
<i>Julie Walker</i>	
Anti-platelet Therapy: What Is New?	1222
<i>John M. Thomason</i>	
Altered Fibrinolysis in the Clinical Setting	1226
<i>Armelle deLaforcade</i>	
CT Angiography of Portal Venous Anomalies in Dogs & Cats	1230
<i>Brian A. Scansen</i>	
High Resolution Computed Tomography in the Diagnosis of Idiopathic Pulmonary Fibrosis	1235
<i>Brendan M. Corcoran</i>	
When to Consider Abdominal Computed Tomography (CT) Over Abdominal Ultrasound?	1239
<i>Angela J. Marolf</i>	
Imaging in GI Disease: Beyond Radiographs and Ultrasound	1243
<i>Jill S. Pomrantz</i>	
Shedding Light on Canine Pituitary Dwarfism	1246
<i>Annemarie M.W.Y. Voorbij</i>	
New Approaches to Diagnosis and Interpretation of Intestinal Dysbiosis	1250
<i>Jan S. Suchodolski</i>	
Feline Hypersomatotropism	1254
<i>Christopher J. Scudder</i>	
Standards Revised: Time for New Markers in Canine Hepatobiliary Diseases?	1258
<i>Iwan A. Burgener</i>	
Unraveling the Role of Histamine Receptors H1, H2, H3, and H4 in the Canine Gastrointestinal Tract	1263
<i>Alyssa M. Sullivan</i>	
Inflammatory-bowel Disease Re-visited: The Role of the Eosinophil	1267
<i>Robert Washabau</i>	
The Somogyi Effect: Is it Clinically Significant?	1270
<i>Chen Gilor</i>	
A Novel HbA1c Assay for the Monitoring of Canine Diabetes	1275
<i>Ian K. Ramsey</i>	

SMALL ANIMAL INTERNAL MEDICINE

Monitoring Canine Cushing's Disease Without ACTH	1278
<i>Ian K. Ramsey</i>	
Subclinical Bacteriuria in Dogs and Cats	1281
<i>Mary F. Thompson</i>	
UTI Treatment and Prevention: What You Need to Know to Help	1284
<i>Gary Oswald</i>	
Urinary Incontinence and OHE	1289
<i>Julie K. Byron</i>	
CKD: Updates on Diagnosis, Treatment and Prevention of Progression	1293
<i>Dennis J. Chew</i>	
Evidence for Nutritional Treatment of Dogs and Cats With Stage 1 Chronic Kidney Disease	1299
<i>Jean A. Hall</i>	
Canine Copper Associated Hepatopathy: Where Are We Now?	1304
<i>Sharon A. Center</i>	
Vector-borne Disease of the Cat	1316
<i>Remo Lobetti</i>	
Canine Leptospirosis: Prime Suspect	1319
<i>Annette L. Litster</i>	
Non-antibiotic Therapies for Infection Treatment and Prevention	1323
<i>Jennifer Granick</i>	
Enterococcal Infections in Dogs and Cats	1326
<i>Mary F. Thompson</i>	
Hyperadrenocorticism: Diagnosis and Management	1329
<i>Jo R. Smith</i>	
Hyperadrenocorticism: Management with Diabetes Mellitus	1334
<i>Cynthia R. Ward</i>	

Hyperadrenocorticism: Management with Urinary Disease	1337
<i>Joseph Bartges</i>	
Hyperadrenocorticism: Management with Pancreatitis and GI Disease	1341
<i>Tracy Hill</i>	
Monitoring of Diabetic Patients: Could We Do Better?	1344
<i>Matthew Krecic</i>	
Classification of Diabetes: Type I, Type II, and... Doe It Matter?	1348
<i>Chen Gilor</i>	
How Pain and Stress Impact the Hospitalized Patient	1355
<i>Sara Bennett</i>	
Diagnosing and Managing the Painful Medical Patient	1358
<i>Tamara Grubb</i>	
Pharmacology for Non-pharmacologists	1360
<i>Claire L. Fellman</i>	
The Role of Culture & Susceptibility Data in Minimizing Antimicrobial Resistance	1365
<i>Dawn M. Boothe</i>	
Indications and Techniques For Upper/Lower GI Endoscopy in Dogs and Cats	1371
<i>Albert E. Jergens</i>	
Recent Advances Into the (Patho)Physiology of Cortisol and Bile Acid Metabolism in Critical Illness	1374
<i>Pauline M. Jamieson</i>	
The Emerging Role of Bile Acids in Chronic Enteropathies	1378
<i>Jan S. Suchodolski</i>	
The Placebo Effect in Veterinary Medicine: Interpreting Clinical Study Results in Placebo Controlled Studies	1381
<i>Linda Rhodes</i>	
Changing Perspective on the Pathobiology of Bile Acids- Background Physiology & Diagnostic Use	1385
<i>Sharon A. Center</i>	
Diagnosis of Immune-Mediated Hemolytic Anemia	1396
<i>Urs Giger</i>	
Individualizing Drug Therapy: Advances in the Pharmacodynamic Monitoring of Immunosuppressive Agents	1399
<i>Andrew Mackin</i>	
Big Data Research: What Is It, and What Can It Teach Us?	1411
<i>Kate E. Creely</i>	
Immunoglobulin FC Receptors: Linking Humoral Immunity With Immune Cell Function	1416
<i>Jonathan E. Fogle</i>	
Reviewing the Evidence: How to Be a Discriminating Reader	1419
<i>Annette L. Litster</i>	
Primary Immunodeficiencies and Infections	1422
<i>Urs Giger</i>	
Canine Splenic Disease: An Update	1427
<i>Alex Lynch</i>	
Limitations and Dangers in Analysis of Retrospective Study Data	1432
<i>Nick Jeffery</i>	
Clinical and Endocrine Parameters in Horses with Pituitary Pars Intermedia Dysfunction Treated with Pergolide	1435
<i>Heidi E. Banse</i>	
Validation of Stall-Side Strangles Diagnosis Using Lamp	1436
<i>Ashley G. Boyle</i>	
Evaluation of a Rapid Test Strip for Detection of <i>Salmonella enterica</i> in Equine Fecal Samples	1437
<i>Brandy A. Burgess</i>	
Pharmacokinetics, Pharmacodynamics and Clinical Use of Trazodone in the Horse	1438
<i>Jennifer Davis</i>	
Insulin and Glucose Responses to Pasture in Insulin-Dysregulated and Normal Ponies	1439
<i>Meolody A. de Laat</i>	
Myelographic Findings at the Cervicothoracic Junction in Non-Neurologic Horses	1440
<i>Krista Estell</i>	
A 2.7 kb Deletion Near HOXD3 is Associated with Occipitoatlantoaxial Malformation in an Arabian Horse	1441
<i>Carrie Finno</i>	
Latency in Equid Herpesvirus-1 Purpose-Infected Horses	1442
<i>Lutz S. Goehring</i>	
Capsule Endoscopy (ALICAM) in Horses: Assessing Gastrointestinal Tract Transit Time, Image Quality and Lesions	1443
<i>Renaud Leguillette</i>	
A Pilot Investigation into the Safety and Efficacy of a Long-acting, Injectable Formulation of Omeprazole	1444
<i>Ben Sykes</i>	
Electroanatomical Cardiac Mapping in Adult Horses in Sinus Rhythm	1445
<i>Gunther van Loon</i>	
Heart Rate Monitor Derived Heart Rate Variability to Diagnose Atrial Fibrillation in Horses	1447
<i>Gunther van Loon</i>	
The Effect of p38 MAPK Inhibition on the Inflammatory Response to Bacterial Toxins in Horses	1448
<i>Jennifer R. Bauquier</i>	

Next Generation DNA Sequencing to Identify Bacteria in Equine Transtracheal Aspirate Samples	1449
<i>Bonnie Barr</i>	
Changes in the Hematological and Biochemical Profile in Foals During the First Year of Life	1450
<i>Babak Faramarzi</i>	
Prevalence Factors Associated with EHV-2/5 Among Equines with Signs of Upper Respiratory Infection in US.....	1451
<i>Wendy E. Vaala</i>	
Report of the Fourth Havemeyer Workshop on Infection Control in Equine Populations	1453
<i>Brandy A. Burgess</i>	
Nutritional Management of Equine Gastric Ulcers: What Do We Really Know?.....	1455
<i>Frank M. Andrews</i>	
The Equine Gut as a Sensory Organ: Entero-endocrine Cells and Incretin Hormones - A Review of Current Understanding.....	1459
<i>Philip Johnson</i>	
Biochemical Analysis of Peritoneal Fluid From Horses With Colic	1463
<i>Christopher K. Cebrus</i>	
Approaches to Investigating a Salmonella Outbreak on a Breeding Farm	1467
<i>Ann Chapman</i>	
Pasture Associated Asthma	1471
<i>Cyprianna E. Swiderski</i>	
Wearable Devices for Gait Analysis in Ataxic Horses.....	1479
<i>Yvette S. Nout-Lomas</i>	
The Use of Angiotensin-converting Enzyme Inhibitors for the Management of Heart Failure in Horses.....	1484
<i>Tiago Afonso</i>	
Effect of Atrial Fibrillation on Exercise Performance in Horses	1488
<i>Dagmar S. Trachsel</i>	
Overreaching, Overtraining and Peripheral Fatigue	1491
<i>Modest Vengust</i>	
The Internist's Approach to Equine Dynamic Upper Airway Obstructions	1495
<i>Emmanuelle Van Erck</i>	
Designing EMS Treatment Plans Based on Phenotype and Concurrent Disorders	1498
<i>Elizabeth M. Tadros</i>	
Part 1: The Old Horse: Medical Management With a Focus on PPID	1502
<i>Harold C. Schott II</i>	
Part 2: The Old Horse: Medical Management with a Focus on PPID and Insulin Dysregulation	1505
<i>Elizabeth M. Tadros</i>	
The Old Horse: Life Stage Nutrition to Maximize Health.....	1508
<i>Patricia Harris</i>	
Vascular Function, Insulin Dysregulation, and Endocrinopathic Laminitis.....	1513
<i>Anne A. Wooldridge</i>	
Adipokines and Equine Metabolic Function	1517
<i>Anne A. Wooldridge</i>	
Ataxia is Not the Only Clinical Manifestation of Neck Injuries	1521
<i>Jean-Marie Denoix</i>	
Diagnosis of Low Back (Lumbar and Lumbosacral) Pain in Equine Athletes	1527
<i>Jean-Marie Denoix</i>	
Maternally-Derived BVDV and BHV-1 Antibodies in Calves Born to Dams Vaccinated or Not During Gestation	1532
<i>Manuel F. Chamorro</i>	
Changes in the Fecal Microbiota of Calves Experimentally Infected with <i>Mycobacterium avium</i> subsp. <i>paratuberculosis</i>	1534
<i>Marie-Eve Fecteau</i>	
Algorithm-based Antimicrobial Therapy in Diarrheic Calves: Impact on Antimicrobial Usage, Health and Fecal Microbiota	1536
<i>Diego Gomez-Nieto</i>	
Pharmacokinetics of Fentanyl and Fentanyl Transdermal Patches in Healthy and Hospitalized Calves	1537
<i>Joe Smith</i>	
Accuracy of Refractometry for Diagnosis Failure of Passive Transfer in Calves: Systematic Review and Meta-analysis.....	1538
<i>Sebastien Buczinski</i>	

EQUINE

A Comparative Evaluation of Diagnostic Findings and Mortality Risks in Hospitalized Neonatal Camelids and Foals	1539
<i>Daniela Bedenice</i>	
Mycobacterium Cell Wall Fraction as an Aid in Reduction of Antibiotic Use in Young Calves	1540
<i>Aleksandar Masic</i>	
Comparing <i>Salmonella enterica</i> Detection in Feces using Aerobic Culture, Targeted Molecular Tests, and Shotgun Metagenomics.....	1542
<i>Paul S. Morley</i>	

Surgical Management of Urinary Tract Obstructions: A Surgeon's Perspective.....	1544
<i>Pierre-Yves Mulon</i>	
Surgical Management of Urolithiasis: An Internist's Perspective	1547
<i>Robert J. Callan</i>	
Population Medicine Using a New Lens: Investigating Veterinary and Producer Mental Health and Wellbeing	1551
<i>Joanne Hewson</i>	
Clinical Listeriosis in Ruminants.....	1556
<i>Keith P. Poulsen</i>	
Exploiting Salmonella Biology to Reduce Disease Burden	1558
<i>Johanna R. Elfenbein</i>	
National Strategy on Antimicrobial Resistance in Switzerland: A Global Approach.....	1562
<i>Mireille Meylan</i>	
Medical Management of Parturition and Dystocia for the Livestock Internist	1566
<i>Robert J. Callan</i>	
BVD - Eradication Programmes in Europe.....	1570
<i>Ingrid Lorenz</i>	
Bovine Respiratory Coronavirus	1573
<i>Sanjay Kapil</i>	
Mucosal Immune System: Concepts and Applications	1574
<i>Sanjay Kapil</i>	
Diagnosis and Health Consequences of Subacute Ruminal Acidosis in Cattle.....	1575
<i>Edgar F. Garrett</i>	
Prevalence of Antimicrobial Resistance in Mannheimia haemolytica.....	1583
<i>Brent Credille</i>	
Molecular Mechanisms of Resistance in Mannheimia haemolytica	1587
<i>Brent Credille</i>	
Impact of Drug Selection and Dosing Regimens on GI Tract Concentrations and Antimicrobial Resistance	1590
<i>Mark G. Papich</i>	
Challenges of Trace Mineral Diagnosis.....	1592
<i>Hugues Guyot</i>	
The Use of Inflammatory Markers in Field Cattle Medicine	1598
<i>Hugues Guyot</i>	
Current Approaches and Future Directions in Veterinary Education	1607
<i>James N. Moore</i>	
The Chronic Disease of Needing a Gold Standard for Diagnostic Accuracy: Is There a Simple Cure?	1613
<i>Ian A. Gardner</i>	
Use of Ultrasonography to Assess Pulmonic Lesions in Calves vs. Foals.....	1618
<i>Sebastien Buczinski</i>	
The Science Behind the Emerging Field of Regenerative Medicine in Large Animals	1621
<i>Lindsey Boone</i>	
The Translational Science of the Emerging Field of Regenerative Medicine in Large Animals.....	1627
<i>John Peroni</i>	
Author Index	