

51st Annual Conference

VOS 2024



February 10-17, 2024

Everline Resort • Lake Tahoe

Olympic Valley, California



Veterinary Orthopedic Society
P.O. Box 705
Okemos, MI 48805

**51st Annual Veterinary Orthopedic Society
Conference
February 10-17, 2024**

Welcome to the 51st Annual Veterinary Orthopedic Society Conference. We are excited to be in Lake Tahoe, a brand-new venue for VOS. The facilities at this resort for both our meeting spaces and our sponsors and exhibitors are top notch. Due to several of our prior meeting places no longer offering conference facilities, and because we listen to our member's responses in the surveys, your board is always working to maintain a portfolio of ski resort options that suit our needs and are affordable. This year's abstract driven program should provide some insight to all of us in ways we can make our orthopedic outcomes better. Several laboratories are being offered this year for those that wish to take advantage of them. The Brinker and Hohn-Johnson grants continue to help fund the research that moves our specialty forward. The Mark Bloomberg Resident Research Awards and the Gretchen Flo Student Intern Awards facilitate the next generation of standouts in veterinary orthopedics an opportunity to showcase their research and become a part of the VOS family. Foundation night entertainment and an "on-mountain" scavenger hunt will add some light-hearted fun. The intimate nature of this meeting also allows an opportunity to discuss with our industry partners ways they can provide us with the best equipment, implant, and supply options to make the logistics of our surgeries go smoothly. Please communicate with them for our mutual benefit and thank them for supporting VOS as the conference could not happen without them. Your VOS Board, Heidi DeCamp, and the Wolfpack from NC State University have put together a great program in an exciting new venue. Enjoy yourself, learn lots, and revel in the friendships of the VOS family!

Randy Basinger, VOS President

SATURDAY, FEBRUARY 10th

Registration and Wine & Cheese Reception

6:00PM – 8:00PM

Location: Pre-function Space / Alpine Ballroom

SUNDAY, FEBRUARY 11th • EVENING SESSION

Location: Movora Lecture Hall (Alpine Ballroom)

SESSION TITLE: *Stifle I*

MODERATOR: *Randy Basinger*

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3:45PM Welcome to VOS (R. Basinger)

4:00PM (21) Custom-Made Trochlear Ridges
Prosthesis for Dogs Affected by Femoral Trochlear
Dysplasia and Patellar Luxation (F. Longo)

4:15PM (22) Early Experience with Arthroscopic
Imbrication in Dogs with Patellar Luxation: A Case
Series in 8 Dogs (F. Longo)

4:30PM Zoetis SOTI

4:45PM BREAK

5:15PM (59) Stifle Arthroscopy Findings in Dogs with
Medial Patellar Luxation (M. Shubert)

5:30PM (23) The Impact of Surgery Resident Training on the Duration of Tibial Plateau Leveling Osteotomy Surgery (A. Niida)

5:45PM (85) Development and Validation of a Canine Stifle Model for Teaching Students to Assess Cranial Cruciate Ligament Stability (R. Gilley)

6:00PM - 7:00PM • Jacques Jenny Lecture

“The Beginnings of Hip Resurfacing”

Speaker: Thomas P. Gross, MD

Sponsored by: Arthrex

Location: Movora Lecture Hall (Alpine Ballroom)

7:00PM - 9:00PM • Exhibitors' Showcase

Location: Grand Sierra Ballroom

MONDAY, FEBRUARY 12th • MORNING SESSION

6:45AM - 7:00AM • VOS Past Presidents' Breakfast

Location: Grand Sierra Ballroom

Location: Movora Lecture Hall (Alpine Ballroom)

SESSION TITLE: *Stifle II*

MODERATOR: *Peter Lotsikas*

SPONSORED BY



7:00AM (49) Radiographic Evaluation of Tibial Torsion Following Tibial Plateau Leveling Osteotomy (P. Mazdarani)

7:15AM (40) Accuracy Improvement of Tunnel Placement in Canine Cranial Cruciate Ligament Reconstruction: An Analysis of the Effectiveness of a Novel Adjustable Aiming Device on Experienced and Novice Surgeons (T. Lee)

7:30AM Movora SOTI: Evolution of Treatment Strategies for Medial Patellar Luxation (C. Rohlf)

7:45AM BREAK

8:15AM Invited Talk: CCL Registry (M. Morton)

8:45AM (2) The Prevalence and Risk Factors of Contralateral Cranial Cruciate Ligament Rupture in Medium-to-Large ($\geq 15\text{kg}$) Breed Dogs 8 Years of Age or Older (C. Murphy)

Location: Emigrant Peak

SESSION TITLE: *Equine I*
MODERATOR: *José García-López*

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7:00AM (75) Interleukin 1-beta Stimulates Equine Periosteal Osteogenesis by Up-Regulating BMP Activity (M. Stewart)

7:15AM (17) Use of CT for Diagnosis and Characterization of Subchondral Bone Lesions of the Metacarpo/ Metatarsophalangeal Joints in Horses: 65 cases (2021-2023) (N. Poza)

7:30AM (36) In Vitro Inflammation-mitigating Effects of Equine Bone Marrow MSC-derived Extracellular Vesicles in Navicular Tissues (V. Quam)

7:45AM BREAK

8:15AM (43) Thoroughbred Racehorse Athletic Training History Influences SDFT Interfascicular Matrix Elastin and Tensile Mechanical Properties (S. Durgam)

8:30AM (45) Use of Computed Tomography for Diagnosis and Management of Lumbar Spine Stress Fractures in Two Quarter Horse Racehorses (J. Martinez Lopez)

8:45AM (47) Macrophage and T Cell Populations are Altered in Naturally Occurring Equine Fetlock OA (H. Reesink)

10:30AM - 3:30PM • Lab Session – Treatment Options for the Excessive TPA Case

Sponsored by: Movora
Location: Monument Peak

MONDAY, FEBRUARY 12th • EVENING SESSION

Location: Movora Lecture Hall (Alpine Ballroom)

SESSION TITLE: *Sports Medicine*

MODERATOR: *Wendy Baltzer*

SPONSORED BY



4:00PM (66) Correlation of Step Data from Two Activity Monitors Used in Dogs (E. Hilborn)

4:15PM (83) Optimization of the Spin Cycle for a Platelet Rich Plasma System for Use in Dogs (M. Fernandez)

4:30PM (51) Effect of Competition Surface on Course Speed in American Kennel Club Agility Trials (G. Mazzeo)

4:45PM BREAK

5:15PM (84) Procedural Technique and Complications Associated with Intra-articular Needle Arthroscopy in the Sedated Canine (P. Lotsikas)

5:30PM (50) The Effect of PetVivo Spryng™ on Pain and Function Secondary to Hip Osteoarthritis in Dogs (A. Amalfitano)

5:45PM (57) Partial Calcaneal Tendon Ruptures in Canines Treated Non-Surgically with Biologics and External Coaptation: Long-Term Follow-Up of 34 Cases (2013-2022) (A. Carter)

6:00PM - 7:00PM • Jacques Jenny Lecture
“Hip Resurfacing Surgical Technique”
Speaker: Thomas P. Gross, MD
Sponsored by: Arthrex
Location: Movora Lecture Hall (Alpine Ballroom)

TUESDAY, FEBRUARY 13th • MORNING SESSION

Location: Movora Lecture Hall (Alpine Ballroom)

SESSION TITLE: *Trauma*
MODERATOR: *Sarah Malek*

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7:00AM (56) Drilling Accuracy with a Veterinary Interlocking Nail System Utilizing a Modified Drill Guide (K. Simon)

7:15AM (72) Exploring the Efficacy of Additively Manufactured PLGA Implants for Fracture Repair (A. Smith)

7:30AM (69) Owner Compliance with Post-Operative Radiographic Re-Evaluation following Fracture Stabilization (A. Pankowski)

7:45AM BREAK

8:15AM (15) Evaluation of 3D-Printed Patient-Specific Guides to Facilitate Fluoroscopic-Assisted Kirschner Wire Stabilization of Simulated Femoral Capital Physeal Fractures in 3D-Printed Dog Femur Models (N. Worden)

8:30AM (44) Virtual Mechanical Testing of the Distal Humerus of Three French Bulldogs Using Quantitative CT-Based 3D Finite Element Analysis (J. McCarthy)

8:45AM (42) Bite Trauma Induced Fractures in 15 Dogs (R. Devlin)

9:00AM Zomedica SOTI

Location: Emigrant Peak

SESSION TITLE: *Equine II*

MODERATOR: *Joe Davis*

7:00AM (54) Design of a Three-Dimensional Finite Element Analysis Model of Equine Traumatic Brain Injury Following Trauma (T. Perez)

7:15AM (71) Are Extracellular Vesicles Isolated from Equine BM-MSCs Cultured in Fetal Bovine Serum or Equine Serum Chondroprotective? (A. Gaesser)

7:30AM (80) Evaluation of Soluble Epoxide Hydrolase Inhibitor to Prime Equine Synovial Fluid-Derived Mesenchymal Stem Cells in an In Vitro Osteoarthritis Model (A. Carlson)

7:45AM BREAK

8:15AM (77) Combination of a Soluble Epoxide Hydrolase Inhibitor and Synovial Fluid-Derived MSCs as a Potential Therapy for the Treatment of Osteoarthritis in Horses (A. Carlson)

8:30AM (90) Evaluation of Safety and Stem Cell Viability After Repeat Intra-Articular Allogeneic Mesenchymal Stem Cell Injections in MHC Mismatched Horses (L. Gray)

8:45AM (91) Evaluation of Osteochondral Activity After Repeat Intra-Articular Allogeneic Mesenchymal Stem Cell Injections in MHC Mismatched Horses (L. Gray)

TUESDAY, FEBRUARY 13th • EVENING SESSION

Location: Movora Lecture Hall (Alpine Ballroom)

SESSION TITLE: *Orthopedics I*

MODERATOR: *Terri Schiller*

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4:00PM (61) Feasibility and Safety of Small Dog Elbow Arthroscopy: A Cadaveric Study (K. Eginton)

4:15PM (26) Feasibility of Percutaneous Osteotomies in Dogs (S. Higgins)

4:30PM (67) Distraction Osteogenesis at the Site of Neutral Wedge Osteotomy for Pelvic Limb Angular Deformity Correction in 2 Young Dogs (C. Pfund)

4:45PM BREAK

5:15PM (86) Arthroscopic Long Digital Extensor Tenodesis: Technique and Case Report (P. Lotsikas)

5:30PM (53) Incidence of Subclinical Bacteriuria [SBU] in Dogs Presenting for Total Hip Replacement [THR] (T. Hillier)

5:45PM (27) Evaluation of Radiographic Acetabular Templating Measurements for Total Hip Replacement Planning in Dogs (J. Wilson)

6:00PM - 7:00PM • Jacques Jenny Lecture

“Perfecting the Operation”

Speaker: Thomas P. Gross, MD

Sponsored by: Arthrex

Location: Movora Lecture Hall (Alpine Ballroom)

WEDNESDAY, FEBRUARY 14th • MORNING SESSION

7:00AM - 8:00AM • VOS Membership Meeting

Location: Movora Lecture Hall (Alpine Ballroom)

Location: Movora Lecture Hall (Alpine Ballroom)

SESSION TITLE: *Orthopedics II*

MODERATOR: *Stan Kim*

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8:00AM BREAK

8:30AM (33) Defining Multi-focal Degenerative Joint Disease, its Frequency and Association with Pain in Cats (M. Koskinen)

8:45AM (7) Effect of Solenisa (Frunevetmab Injection) on Activity Level of Osteoarthritic Cats (A. Power)

9:00AM Arthrex SOTI: Clinical Update on Ortholine Plating System (S. Murphy)

12:00PM - 1:30PM • VOS "Mountain Picnic"

Location: Everline Sun Deck

WEDNESDAY, FEBRUARY 14th • EVENING SESSION

Location: Movora Lecture Hall (Alpine Ballroom)

SESSION TITLE: *Gretchen L. Flo Student/Intern Awards Session*

MODERATOR: *Mike Karlin*

4:00PM (65) Clinical Effect of Multidose Oral Administration of Firocoxib and t-TUCB Alone and in Combination for the Treatment of Naturally Occurring Osteoarthritis in Horses (C. Brown)

4:15PM (79) Adding the Third Dimension to Surgical Planning (A. Fracka)

4:30PM (82) The Effect of Wire Twist Location on Wire Tension in a Tibial Tuberosity Pin and Tension Band Wire Fixation Model (M. Kane)

4:45PM BREAK

5:15PM (19) The Development of Customized 3D Printed Casts for External Fixator Wire Placement in the Antebrachium of Dogs (E. Peterson)

5:30PM (18) Characterization of Aseptic Protocol Breach Events during Scrubbing, Gowning and Gloving amongst Veterinary Students in a Teaching Hospital Setting (K. Souders)

5:45PM (81) Effect of BODPUO or PLUS Procedure on Intra-articular Contact Mechanics of Cadaveric Canine

Elbows with Experimentally Induced Negative
Radioulnar Incongruence (A. Sullivan)

6:00PM - 7:00PM • Jacques Jenny Lecture

“The Best Way to Restore a Hip”

Speaker: Thomas P. Gross, MD

Sponsored by: Arthrex

Location: Movora Lecture Hall (Alpine Ballroom)

**7:00PM - 10:30PM • Foundation Night featuring
Poster Session, Silent Auction, Entertainment, and
Kids Party**

Sponsored by: Zoetis & Zomedica

Locations: Grand Sierra Ballroom & Movora Lecture
Hall (Alpine Ballroom)

THURSDAY, FEBRUARY 15th • MORNING SESSION

Location: Movora Lecture Hall (Alpine Ballroom)

SESSION TITLE: *Mark Bloomberg Resident Research Awards Session*

MODERATOR: *Stan Kim*

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7:00AM (32) Mechanical Comparison of Straight and Pre-Bent Interlocking Nails Used for the Stabilization of Tibial Fracture (W. Chung)

7:15AM (34) Mechanical Evaluation of a Partially Threaded, Interference Interlocking Mechanism for Angle Stable Intramedullary Nailing (J. Hanlon)

7:30AM (60) Mechanical Evaluation of Canine Cementless Total Hip Replacement Broaches: Effect of Tooth Design on Broach and Stem Insertion (D. Hollenbeck)

7:45AM BREAK

8:15AM (52) In Vitro Biomechanical Testing of a Novel Transarticular Screw Technique for Arthrodesis of the Equine Distal Intertarsal and Tarsometatarsal Joints (K. Labbe)

8:30AM (89) Effects of Cryotherapy and Bandaging on Core Temperature of Equine Flexor Tendons (R. McCarthy)

8:45AM (20) In Vivo Shoulder Kinematics Assessed with Biplanar Fluoroscopy in Healthy Dogs During Walk and Trot Gait (F. Longo)

9:00AM (58) Biomechanical Evaluation of Three Adjunctive Methods of Orthopedic Tension Band-wire Fixation to Augment Simulated Patella Tendon Repairs in Dogs (R. McKay)

**9:30AM - 10:30AM • Future Surgical Scholars
Session – Statistical Analysis**

Speaker: Richard Evans, PhD, PSTAT

Location: Emigrant Peak

**10:30AM - 3:30PM • Lab Session – KYON ALPS®
PAUL-II Workshop**

Sponsored By: Movora

Location: Monument Peak

THURSDAY, FEBRUARY 15th • EVENING SESSION

Location: Movora Lecture Hall (Alpine Ballroom)

SESSION TITLE: *Orthopedics III*

MODERATOR: *Adam Biedrzycki*

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4:00PM (46) 3D Printed Prosthetics for Distal Limb (Foot) Application in Goats (A. Biedrzycki)

4:15PM (87) Creation of a Subchondral Bone Disease Ovine Model Utilizing Impact Loading (A. Carlson)

4:30PM (30) Low Rates of Positive Bacterial Culture and High Prevalence of Antimicrobial Resistance in Equine Synovial Sepsis (H. Reesink)

4:45PM BREAK

5:00PM (11) Using ChatGPT to Develop the Statistical Analysis Plan for an Orthopedic Randomized Controlled Trial: A Case Report (R. Evans)

5:15PM (93) Enhancing Surgical Planning in Congenital Elbow Luxation Repair Using 3D Modeling and Printing (T. Goyama)

6:30PM - 11:00PM • VOS Banquet
Location: Grand Sierra Ballroom

FRIDAY, FEBRUARY 16th • MORNING SESSION

Location: Movora Lecture Hall (Alpine Ballroom)

SESSION TITLE: *Case Rounds*

MODERATOR: *Stephen Jones*

7:00AM Trochlear Ridge Elevation (R. Basinger)

7:20AM Congenital Deformities (J. Warnock)

7:40AM Humeral Condylar Fractures (S. Malek)

8:00AM BREAK

8:15AM TBD (C. Silveira)

8:35AM Implant Retention with Infection (S. Jones)

8:55AM Purina SOTI (K. Venator)

POSTER ABSTRACT TITLES

- (5) Risk Factor on the Age of Rupture of the Cranial Cruciate Ligament in Young Dogs: Retrospective Study on 326 Dogs [2015-2021] (R. Martin)
- (16) Use of the LCP Distal Femur Plate for Veterinary Applications in the Fixation of a Displaced, Salter Harris Type I, Distal Femur Fracture in an Equid (E. Collar)
- (25) *In Silico* Comparison of Two Kirschner Wire Arrangements for Stabilization of Femoral Capital Physeal Fractures (L. Scheuermann)
- (28) Mitigation of Gap Formation Resulting from Saw Blade in Single-Cut Osteotomy (M. Kim)
- (29) Development of a 3D-Printed Canine Hip Dysplastic Model for Acetabular Cup Implantation Training (M. Kim)
- (31) Consistency and Repeatability of Linear Radiographic Measurements Performed on Sequential Crural Radiographs Obtained from Dogs That Have Undergone Uncomplicated Tibial Plateau Leveling Osteotomy (L. Scheuermann)
- (35) Mechanical Impact of Distal Interlocking Bolt, Cis-Cortical Over Drilling on Angle Stable Intramedullary Nailing (J. Hanlon)
- (39) Usefulness of a Customized 3D Printed Canine Pelvic Bone Model to Study the Effect of Pelvic Osteotomy Plate Position on Axial Rotation of the Acetabular Segment in Triple Pelvic Osteotomy (M. Pawlik)
- (41) Core Decompression Augmented by Autologous Bone Marrow Aspirate Concentrate for Treatment of

Cyst-like Lesions in the Navicular Bone: A Case Series of Five Horses (G. Maleas)

(55) Case Report: A Modification to the TPLO Procedure to Simultaneously Correct for CCL Tear and Concurrent Medial Patellar Luxation Using an Offset Spacer (J. Brajkovich)

(62) Comparing the Incidence of Surgical Site Infection for Two Different Methods of Post-Operative Self-Trauma Prevention in Dogs Undergoing Tibial Plateau Leveling Osetotomy (J. Evers)

(63) Response to Treatment with Grapiprant as Part of a Standard Multimodal Regimen in Young Dogs with Appendicular Joint Osteoarthritis Associated Pain (M. Enomoto)

(64) Clinical Evaluation of Indigenously Designed Double Threaded Intramedullary Pin for Comminuted Femoral Fracture Fixation in Dogs (A. Kumar)

(73) New Surgical Approaches to Managing Coxofemoral Luxation in Large Animals (A. Biedrzycki)

(76) Comprehensive Long-Term Outcome Following Total Knee Replacement in a Dog (A. Fracka)

(88) A Novel Primarily Bioresorbable Customized Prosthetic with the Concept of Stem-Cell-Based Attachments to Treat Canine Osteosarcoma (H. Yousefiroshan)

(92) Treatment of Equine Joints Post Septic Arthritis with IRAP (A. Stewart)

(94) Effect of Surgical Stabilization Method on Postoperative Complication Rates and Short Term Outcome with Fixation of Humeral Condylar Fractures in 31 Skeletally Immature French Bulldogs (E. Wilkins)

2024 Podium Abstract Presenters

Alexander Amalfitano	Peter Lotsikas
Adam Biedrzycki	Javier Martinez Lopez
Chessa Brown	Parissa Mazdarani
Alexandra Carlson	Grace Mazzeo
Andrew Carter	Jessica McCarthy
William Chung	Robert McCarthy
Ryan Devlin	Rachel McKay
Sushmitha Durgam	Christina Murphy
Kendra Eginton	Anne Pankowski
Richard Evans	Trevor Perez
Mariana Fernandez	Elaina Peterson
Agnieszka Fracka	Charlotte Pfund
Angela Gaesser	Ashley Power
Robert Gilley	Marta Nieto Poza
Takashi Goyama	Atsushi Niida
Layla Gray	Vivian Quam
John Hanlon	Heidi Reesink
Samantha Higgins	Madison Shubert
Erin Hilborn	Karly Souders
Townes Hillier	Kerry Simon
Danielle Hollenbeck	Anna Smith
Margaret Kane	Matthew Stewart
Milja Koskinen	Anna Lia Sullivan
Karen Labbe	Jordan Wilson
Tsai-Yu Lee	Natalie Worden
Federico Longo	

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