In collaboration with 1st North American Veterinary Regenerative Medicine Conference March 5–6, 2010, Santa Ynez Valley, California
Welcome

On behalf of the UC Davis, Center for Equine Health, the Alamo Pintado Equine Medical Center and the Rood & Riddle Equine Hospital we would like to welcome you to the 1st North American Veterinary Regenerative Medicine Conference. It is our hope that this conference will provide you with both an intellectually stimulating and clinically applicable educational experience.

The field of biological medicine has become accepted as the wave of the future in medicine because it holds the “promise of cure.” Our goal with this conference is to provide a basic introduction to the concepts of regenerative medicine and stem cell therapy so that each of you can begin to incorporate them within your medical thoughts and actions. Since this field is in its infancy, we believe that each of us needs to become aware of its promises and limitations so that it may be properly and ethically incorporated into the clinical practice of veterinary medicine.

We hope that the success of this first conference can be continued with a permanent series of seminars that will provide a reliable pathway for the dissemination of newly developed regenerative medical techniques. It is our intention to create an environment of discovery, innovation and exchange that will permit all of us to learn together what these new technologies can truthfully offer our patients and our profession.

Your active participation in the discussion of the materials that will be presented here is encouraged. Each of you has experiences and insights which can contribute to the growth and advancement of this new field. We look forward to hearing your thoughts.

Above all, please enjoy the hospitality and professional collegiality offered here. We want each of you to have fun learning something new!

Sincerely,

Gregory L. Ferraro DVM    Doug Herthel DVM
Director, UC Davis Center for Equine Health    Founder, Alamo Pintado Equine Medical Center
Table of Contents

Conference Schedule Friday, March 5 ................................................................. 4
Friday Evening Dinner Party .................................................................................. 5
Conference Schedule Saturday, March 6 .................................................................. 6
Roundtable Discussion Schedule ........................................................................... 8–9
Conference Speakers ............................................................................................. 10–17
Local Map ............................................................................................................... 18
Transportation Schedule ......................................................................................... 18
Sponsors ................................................................................................................... 19
Notes ....................................................................................................................... 20–23
### Conference Schedule  
**Friday, March 5, 2010**

Santa Ynez Valley Marriott  
*Session Moderators: Dr. Greg Ferraro, Dr. Mark Rizk*

<table>
<thead>
<tr>
<th>Time</th>
<th>Event Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>7:00 - 8:00 a.m.</td>
<td>BREAKFAST</td>
</tr>
</tbody>
</table>
| 8:00 - 8:05 a.m. | Dr. Doug Herthel, Alamo Pintado Equine Medical Center  
Welcome |
| 8:05 - 8:30 a.m. | Dr. Doug Herthel, Alamo Pintado Equine Medical Center  
Utilizing Concentrated and Expanded Cultured Autologous Stem Cells and Growth Factors for Post-Operative Joint Therapy and for Acute Tendon and Ligament Injuries |
| 8:30 - 8:55 a.m. | Dr. Christopher Proctor, Alta Orthopedics  
Treatment of Tendinopathy with Autologous Bone Marrow Aspirate Injection - Clinical Experience |
| 8:55 - 9:20 a.m. | Dr. Jennifer Barrett, Marion duPont Scott Equine Medical Center, Virginia Tech  
Characterization of Tendon Progenitor Cells |
| 9:20 - 9:45 a.m. | Dr. Allison Stewart, University of Illinois  
The Fate of Tendon Derived Progenitor Cells Following Intratendinous Injection |
| 9:45 - 10:00 a.m. | BREAK |
| 10:00 - 10:25 a.m. | Dr. Larry Galuppo, UC Davis School of Veterinary Medicine  
Use of Regenerative Medicine Technology for Treatment of Deep Digital Flexor Tendon Lesions in Horses |
| 10:25 - 10:50 a.m. | Dr. David Frisbie, Colorado State University  
Clinical Outcomes of Intra-Articular Stem Cell Therapy |
| 10:50 - 11:15 a.m. | Dr. Arnold Caplan, Case Western Reserve University  
Mesenchymal Stem Cells - The Local Drug Store |
| 11:15 - 11:40 a.m. | Dr. John Peroni, University of Georgia  
Allogenic Bone Marrow Derived MSCs: Anti-inflammatory and Immunomodulatory Effects |
| 11:40 - 12:05 p.m. | Dr. Alan Nixon, Cornell University  
Stem Cell Gene Induced Programming for Musculoskeletal Repair |
| 12:05 - 12:30 p.m. | Dr. Van Snow, Private Practitioner  
Clinical Experience Using Celavet Cells in Treating Tendon and Ligament Injuries |
12:30 - 12:50 p.m. Question and Answer Period

12:50 - 1:25 p.m. LUNCH

1:25 - 1:50 p.m. Dr. Claire Yellowley, UC Davis School of Veterinary Medicine
Hypoxia and Stem Cell Biology

1:50 - 2:15 p.m. Dr. Sean Owens, UC Davis School of Veterinary Medicine
Evaluation of MarrowXpress System for Red Cell Depletion, Volume Reduction and Mononuclear Cell Recovery of Equine Umbilical Cord Blood and Bone Marrow

2:15 - 2:40 p.m. Dr. Dori Borjesson, UC Davis School of Veterinary Medicine
Immunomodulatory Activity of Allogenic Bone Marrow, Adipose and Placentally Derived Equine MSCs

2:40 - 3:05 p.m. Dr. Jamie Textor, UC Davis School of Veterinary Medicine
PRP as Regenerative Therapy; Methods of Use and Growth Factor Dynamics

3:05 - 3:25 p.m. BREAK

3:30 - 3:45 p.m. TRANSPORT TO APEMC

3:45 - 5:00 p.m. Dr. Doug Herthel, Dr. Larry Galuppo, Dr. Robert Harman
Live Demo - Bone Marrow and Adipose Collection / Processing

5:00 - 7:15 p.m. FREE TIME, Wine tasting and touring in the town of Los Olivos

5:00 - 5:15 p.m. (Optional) Transport from Los Olivos to the Santa Ynez Valley Marriott

7:15 - 10:00 p.m. DINNER RECEPTION, Santa Ynez Valley Marriott Ballroom
Featured Speaker: Bill Casner, co-owner of Winstar Farms
A Horseowner’s Views and Experiences with Stem Cell Technology for the Racehorse

NAVRMRC Dinner Celebration

Enjoy excellent food, local wines and live music in the beautiful Santa Ynez Valley.

We invite you as our guest to attend a dinner celebration honoring the 1st North American Veterinary Regenerative Medicine Conference. The evening’s festivities are complimentary for you and a guest. Enjoy the opportunity to meet all attendees, speakers and sponsors.

Friday, March 5, 2010, 7:15 - 10:00 p.m. Attire is casual, nice jeans are appropriate.
Conference Schedule Saturday, March 6, 2010

Santa Ynez Valley Marriott

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

9:00 - 11:30 a.m.  Small Group / Discussion Sessions

Practitioners Roundtable  *Moderators: Dr. Doug Herthel, Dr. Gregory Ferraro*

Laboratory Standards and Regulatory Affairs  *Moderator: Dr. Sean Owens*

Clinical Trials Development  *Moderator: Dr. Larry Galuppo*

Stem Cell Biology and Basic Research  *Moderator: Dr. Dori Borjesson*

11:30 - 12:30 p.m.  LUNCH

  *Session Moderator: Dr. Carter Judy*

12:30 - 12:55 p.m.  Dr. Laurie Goodrich, Colorado State University

  Gene Therapy in Regenerative Medicine

12:55 - 1:20 p.m.  Dr. Wesley Sutter, Ocala Equine Hospital

  Clinical Applications of PRP in Combination with Processed Stem Cells

1:20 - 1:45 p.m.  Dr. Fernando Fierro, UC Davis Medical Center

  Role of Growth Factors in Mesenchymal Stem Cell-Mediated Blood Flow Restoration and Bone Repair

1:45 - 2:10 p.m.  Dr. Martin Vidal, UC Davis School of Veterinary Medicine

  Bone Marrow Mesenchymal Stromal Cell Response to GDF-5 in 2-D Culture

2:10 - 2:35 p.m.  Dr. Kent Leach, UC Davis Department of Biomedical Sciences

  Deployment Vehicles for Stem Cell-Based Orthopedic Repair

2:35 - 2:50 p.m.  BREAK
2:50 - 3:15 p.m.  Dr. Dean Betts, University of Western Ontario  
Stem Cell Biology in Dogs and Horses; The Quest for Pluripotency

3:15 - 3:40 p.m.  Dr. Thomas Koch, University of Guelph  
Equine CB MSCs in Bone and Cartilage Engineering

3:40 p.m. - 4:05 p.m.  Dr. Laurie McDuffee, University of Prince Edward Island  
Osteoprogenitor Cell Therapy in an Equine Fracture Model

4:05 - 4:30 p.m.  Dr. Christopher Johnson, Woodford Equine Hospital  
Clinical Use of Autologous Bone Marrow for Tendon, Ligament and Joint Therapies

4:30 - 4:55 p.m.  Dr. Robert Harman, Vet Stem, Inc.  
Clinical Applications Summary of Stem Cell Therapy in  
Over 3,500 Equine Orthopedics Cases

4:55 - 5:20 p.m.  Dr. Dennis Clegg, UC Santa Barbara  
Stem Cell-Derived Ocular Cells for the Treatment of Human Eye Disease

Adjournment
Practitioner Roundtable
Moderators: Doug Herthel DVM, Gregory L. Ferraro DVM

Presentation of Case Experiences Using BMA-PRP for Soft Tissue Injuries and OCD Lesions in TB Horses
Jorge Gomez DVM, Hagyard Equine Medical Institute, Lexington, KY

Case Presentations Using Adipose Vascular Fraction Derived and Umbilical Sourced Stem Cells in Horses
Martin Gardner DVM, Great Basin Equine Hospital, Gardnerville, NV

Personal Experiences with Stem Cell Therapies for Orthopedic Injuries in Hunter/Jumper and Dressage Horses
Robert Fleck DVM, Woodinville, WA

Personal Experiences with Stem Cell, PRP and IRAP Therapies for Orthopedic Repair in Racing Thoroughbreds
Ted Simpson DVM, Pasadena, CA

Laboratory Standards & Regulatory Affairs
Moderator: Sean Owens DVM

Discussion will include:
- Regulatory considerations for veterinary stem cell products
- Laboratory guidelines for stem cell products
- The role of the FDA and veterinary stem cell products and therapies
- Standards development

Gayl Rogers Chrysler, MBA, RN, Cellular Technologies and Clinical Affairs, BioE
Eugene Dunn, CLS, MT (ASCP), UC Davis Comparative Pathology Laboratory
Helen Newman, PhD, CTBS, Veterinary Transplant Services
Lynne Oliver DVM, U.S. Food and Drug Administration
**Stem Cell Biology & Basic Research**

*Moderator: Dori Borjeson DVM*

Discussion will include:

- Informal forum to stimulate conversation in critical areas of stem cell research
- Current areas of research emphasis
- Concerns, advantages/disadvantages and alternatives in current methodologies and approaches
- Prioritize critical research questions in basic, translational and clinical stem cell arenas
- Identify potential collaborations or working groups
- Best and most efficient use of resources
- Best means of networking with each other
- How to establish critical mass to move research forward
- Highlight and discuss funding opportunities

**Clinical Trials Development**

*Moderator: Larry Galuppo DVM*

Discussion will include:

- Development of standardized clinical trials
- Need for clinical trials, role of clinical trials and developing appropriate designs
- Identifying key orthopedic disorders to study, standardizing assessment criteria, and developing institutional approaches for implementing and completing trials
- Identifying and generating appropriate animal models for assessing the use of cell-based therapies for osteoarthritis, tendonitis and subchondral bone diseases
Conference Speakers

Dr. Jennifer Barrett
Dr. Barrett is an Assistant Professor of Equine Surgery at Virginia Tech’s Marion duPont Scott Equine Medical Center. She received a doctorate in Cell and Molecular Biology from Yale University and a Doctor of Veterinary Medicine degree from Cornell University. Prior to joining the center, she completed an internship in equine medicine and surgery at Rood & Riddle Equine Hospital in Lexington, Kentucky. She conducted a residency in equine surgery at the University of Illinois’ Veterinary Teaching Hospital in Urbana and held a post-doctoral research position in the University of Wisconsin’s Comparative Orthopedics Research Laboratory in Madison. Dr. Barrett joined the Marion duPont Scott Equine Medical Center’s faculty in August 2007 and achieved Diplomate status through the American College of Veterinary Surgeons in 2008. Her research interests include tendon, ligament, and cartilage healing, stem cell and platelet-rich plasma therapies, and tissue regeneration. She has introduced the new Regenerative Medicine Service at the EMC, which offers stem cell therapies and platelet rich plasma therapy for both equine and canine patients.

Dr. Dean Betts
Dr. Betts is currently an Associate Professor in the Departments of Physiology & Pharmacology and Obstetrics & Gynecology at the University of Western Ontario, London, Canada. He received degrees from the University of Western Ontario (BSc, MSc) and the University of Guelph (PhD). Following a post-doctoral fellowship at Case Western Reserve University, Dr. Betts joined the faculty at the Ontario Veterinary College in 2001. Dr. Betts’ research, which has resulted in 37 peer-reviewed publications, has focused on characterizing and understanding the molecular and cellular mechanisms of early mammalian development using cattle embryos as his main experimental model. Dr. Betts was one of the first to apply RNA interference technology to study gene function in bovine embryos. Just prior to Dr. Betts’ move to the University of Western Ontario in 2008, his lab was one of the first groups to generate and characterize numerous canine embryonic stem cell lines and the first to isolate a mesenchymal stem cell population from umbilical cord blood of foals. These recent discoveries have led Dr. Betts to focus his research activities in developing clinically relevant animal models for stem cell–based transplantation therapies.

Dr. Dori Borjesson
Dr. Borjesson, DVM, PhD, Diplomate ACVP, Associate Professor, graduated from UC Davis where she completed her DVM, clinical pathology residency and PhD. She returned to UC Davis in 2006 after nearly five years on the faculty at the University of Minnesota. Dr. Borjesson’s research interests include tick-borne diseases (especially *Anaplasma phagocytophilum*), platelet and leukocyte biology, host cell-pathogen interactions, and wildlife clinical pathology.
Dr. Arnold Caplan
Dr. Caplan is Professor of Biology and the Director of the Skeletal Research Center at Case Western Reserve University. Dr. Caplan received his BS in Chemistry at the Illinois Institute of Technology and his PhD from The Johns Hopkins University School of Medicine. Dr. Caplan did a Postdoctoral Fellowship in the Department of Anatomy at The Johns Hopkins University, followed by post-doctoral fellowships at Brandeis University with Dr. N. Kaplan and Dr. E. Zwilling. He came to Case Western Reserve University as Assistant Professor of Biology in 1969 and became Professor in 1981, in which time he has received a number of awards. Dr. Caplan is a national and international scholar focusing on experimentation in the area of musculoskeletal and skin development. He has over 350 published papers and manuscripts and has long been supported by the National Institutes of Health and other non-profit and for-profit agencies for his efforts to understand the development, maturation and aging of cartilage, bone, skin and other mesenchymal tissues and for his pioneering research on mesenchymal stem Cells.

Bill Casner
Bill Casner grew up in El Paso, Texas and developed a love for horses at an early age. At the age of 15, he started galloping horses at Sunland Park and fell under the spell of racing. He put himself through college at Tarleton State University in Stephenville, Texas by galloping thoroughbreds, including champion Cho Croute, at various race tracks around the country. Upon graduation, Casner embarked on a training career in the Midwest. In 1979, Casner left the thoroughbred industry, and founded Excel Communications with former horse owner, Kenny Troutt. In addition to Excel, which went public in 1996, Casner owns Dallas / Fort Worth-based, B&R Equipment. Casner re-entered the thoroughbred industry in the mid-1990s through various racing partnerships. In early 2000, he and Mr. Troutt came full circle and formed another partnership, establishing WinStar Farm in Versailles, Kentucky. Bill has received numerous awards including the Thoroughbred Charities of America 2007 Leadership Award, the 2005 W.T. Young Humanitarian Award, as well as the 2003 TOBA Industry Service Award. Casner currently serves on the Thoroughbred Owners and Breeders Association board of trustees and is a past Chairman. He is also a member of the Breeder’s Cup Board of Trustees and Vice Chairman and co-founder of the Kentucky Equine Education Project (KEEP). Mr. Casner is also a founding member of The Race For Education, a national scholarship foundation providing educational opportunities to children of racing’s backside and farm workers.
Conference Speakers

Dr. Dennis Clegg
Dr. Clegg earned his BS degree in biochemistry at UC Davis and his PhD in biochemistry at UC Berkeley, where he used emerging methods in recombinant DNA to study the sensory transduction systems of bacteria. As a Jane Coffin Childs Postdoctoral Scholar at UCSF, he studied neural development and regeneration. He has continued this avenue of research since joining the UCSB faculty, with a current emphasis in stem cell research. His most recent research focuses on understanding how to differentiate stem cells into retinal cells in hopes of creating a more effective therapy for macular degeneration. Dr. Clegg is the recipient of the UCSB Distinguished Teaching Award in the Physical Sciences, and has served on the editorial board of the Journal of Biological Chemistry. He previously served as Chair of the Department of Molecular, Cellular and Developmental Biology at UCSB, and is an active member of the UCSB Neuroscience Research Institute as well as Co-Director of the UCSB Center for Stem Cell Biology and Engineering.

Dr. Gregory Ferraro
Dr. Ferraro is the Director of the UC Davis Center for Equine Health, and has contributed to the health and well-being of horses through clinical practice, veterinary medical education and research. He has authored more than 50 scientific papers and articles on equine health. As a racehorse surgeon, he pioneered the adaptation of arthroscopic surgical techniques established in human medicine to equine veterinary medicine. At the Center for Equine Health, he has engaged faculty members and resident veterinarians who represent the spectrum of basic and clinical research disciplines, and he has established research initiatives that include the Bernice Barbour Communicable Disease Laboratory and the CEH-Stem Cell Regenerative Medicine Research Group.

Dr. Fernando Fierro
Dr. Fierro was born in Bielefeld, Germany and graduated in 2003 as Engineer in Molecular Biotechnology from the University of Chile in Santiago, Chile. In 2004, Dr. Fierro moved back to Germany to complete a PhD at the International Max Planck Research School (IMPRS) in Dresden. He focused on studying the drug resistance of leukemic cells acquired by interaction with mesenchymal stem cells (MSC) and to examining the function of microRNAs in MSC. Since December 2008, Dr. Fierro has been a postdoctoral scholar with Jan Nolta's group within the Stem Cell Program at UC Davis, identifying the effect of autocrine growth factors in mesenchymal stem cells.

Dr. David Frisbie
Dr. Frisbie is one of the senior scientists and associate professor at the Equine Orthopedic Research Center at Colorado State University. His educational background includes a PhD Molecular Biology-Gene Therapy from Colorado State University and an MS in Joint Pathobiology from Colorado State University. Dr. Frisbie was a Large Animal Surgery intern at Cornell University, and earned his DVM from the University of Wisconsin-Madison. He also has a Bachelors Degree in Biochemistry from the University of Wisconsin, River Falls. Dr. Frisbie specializes in orthopaedic research, equine lameness, orthopaedic surgery and gene therapy.
Dr. Larry Galuppo
Dr. Galuppo, DVM, Diplomate ACVS, Professor and Chief, Equine Surgery, Department of Surgical & Radiological Sciences, UC Davis School of Veterinary Medicine. Dr. Galuppo’s clinical expertise is in equine orthopedic surgery including tendon and ligament injuries, and joint disease, with special interest in traumatology and fracture repair. His research emphasis is on biomechanics of fracture generation, implant design and fracture repair, with focus in novel healing methods for musculoskeletal injuries utilizing regenerative medicine technology.

Dr. Laurie Goodrich
Dr. Goodrich joined the faculty at Colorado State University College of Veterinary Medicine in April of 2005 as an Assistant Professor in Equine Surgery and Lameness. Prior to joining the faculty, she obtained her DVM from the University of Illinois, and completed an internship in Large Animal Surgery and Medicine at Virginia-Maryland Regional College of Veterinary Medicine. Following her internship, Dr. Goodrich joined the faculty at Virginia for one year as an equine ambulatory clinician before going on to complete her residency in equine surgery at the Equine Medical Center in Leesburg, Virginia. She also obtained an MS in Pharmacology during her residency. Dr. Goodrich subsequently joined the large animal surgery faculty at Cornell University's College of Veterinary Medicine and became board certified in large animal surgery in 1999. At Cornell, she rotated as Chief-of-Service for the Orthopedic, Soft Tissue and Emergency Surgery Services. In 2000, she began a PhD in Cartilage Repair and Gene Therapy. Her research included the transplantation of genetically modified chondrocytes into the defects of cartilage to improve cartilage healing. She completed her PhD in the fall of 2004. Dr. Goodrich’s research interests are primarily focused on cartilage healing and cartilage repair currently using growth factor gene therapy modalities.

Dr. Robert Harman
Dr. Harman is the founder of Vet-Stem, the first US-based commercial veterinary stem cell company. For 15 years prior to that, he was the CEO of HTI-Bio-Services, a preclinical research company for veterinary and human pharmaceutical development. He has authored more than 500 contract study reports for animal health companies throughout the world and for submission to the FDA and USDA in support of the development of new animal and human health products. Dr. Harman and his partners successfully founded, grew, and profitably sold two biotechnology companies. In his current position, he is the founder and principal clinical development director of the programs at Vet-Stem to bring stem cell therapy to veterinary medicine. He has been a frequent speaker at stem cell conferences in North America, Central America, Europe and the Middle East.
Dr. Doug Herthel

Dr. Herthel received his Doctorate of Veterinary Medicine degree from the University of CA at Davis in 1971, completing an internship there in equine surgery the following year. In 1972, he and his wife established the internationally recognized Alamo Pintado Equine Medical Center in Los Olivos, California to provide advanced diagnostics and therapy and to carry out his extensive research. Dr. Herthel has perfected methods for the management of colics, colic exploratory surgery, crushing type sutures for intestinal anastomosis, and colon resection in horses suffering from severe torsion. Dr. Herthel has developed an orthopedic laboratory and has created unique orthopedic devices, modified from human applications, for specific surgeries and post-operative support. He has shared his innovations with the profession in numerous articles in equine journals and textbooks on equine surgery. Dr. Herthel pioneered equine stem cell treatment in 1995, and has furthered his research by developing the Alamo Pintado Center for Biological Medicine, focusing on autologous bone marrow-derived equine stem cell therapy, as well as advancing the role of nutrition in veterinary medicine.

Dr. Christopher Johnson

Dr. Johnson is a boarded surgeon and a partner at Woodford Equine Hospital in Versailles, Kentucky. He obtained his veterinary degree from Mississippi State University, completed his large animal internship at the University of Tennessee, and performed his surgical residency at Auburn University. He joined the faculty at Auburn University Large Animal Teaching Hospital after his residency. After obtaining his board certification in 2001, Dr. Johnson joined Woodford Equine Hospital as an associate. He became a partner in 2006 with the opening of the new hospital. Dr. Johnson has been performing various forms of stem cell therapy for the past nine years, ranging from intra-lesional injection of bone marrow to fat-derived and bone marrow-derived mesenchymal stem cells.

Dr. Thomas Koch

Dr. Thomas Koch received his DVM degree from the Veterinary College in Copenhagen, Denmark in 2000. He then worked in mixed practice before completing a one-year rotational internship in large animal medicine and surgery at the Ontario Veterinary College in 2001-2002. Following this, he returned to Denmark to work for one year as an equine practitioner. In 2003, he returned to the OVC to become a resident in large animal medicine. He completed his residency in 2005, and has since been doing his PhD studies in Biomedical Sciences at the OVC on the topic of equine stem cells from umbilical cord blood.
Dr. Kent Leach
Dr. Leach received a PhD in Chemical Engineering from the University of Oklahoma in 2003, where he investigated the use of drug delivery vehicles to accelerate the restoration of occluded blood flow characteristic of heart attack and stroke. He then completed post-doctoral research at the University of Michigan and Harvard University focused on the controlled delivery of multiple growth factors from various matrices to promote tissue regeneration. In 2005, Dr. Leach joined the Department of Biomedical Engineering at the University of California at Davis as an Assistant Professor, where he directs the Laboratory for Tissue Engineering and Drug Delivery. His present research interests are directed towards enhancing the engineering of various tissues through multimodal stimulation achieved by the presentation of multiple growth factors, the development of hybrid biomaterials, transplantation of various mature, progenitor, and stem cells, and the application of external stimulation.

Dr. Laurie McDuffee
Dr. McDuffee has conducted research focused on equine fracture repair and bone healing for the last 19 years. Her residency and PhD research focused on the biomechanical aspects of equine fracture repair methods, the biological aspects of different methods, and the development of an equine interlocking nail for adult horses. The research conducted independently over the last 12 years has focused on understanding the cells of the equine osteoblast lineage and equine post-natal mesenchymal stem cells. Her recent research has involved evaluation of the effect of various growth factors and dosages on cells of the osteoblast lineage, and comparisons of the osteogenic potential of cells from various equine donor tissue sites. She has also been conducting translational research to move the knowledge gained from in vitro research towards the clinic. The most recent in vivo research applies cell based therapy to an equine fracture model. Dr. McDuffee has presented much of her in vitro research at various meetings.

Dr. Alan Nixon
Dr. Nixon is the Director of the Comparative Orthopaedics Laboratory at Cornell University. Dr. Nixon obtained his veterinary degree from the University of Sydney in 1978 and completed a surgical residency and research degree at Colorado State University in 1983. After five years in the Department of Surgical Sciences at the University of Florida, Dr. Nixon moved to New York in 1988 where he is currently a professor in the Department of Clinical Sciences at Cornell University. Dr. Nixon’s research includes joint pathobiology and cartilage repair with growth factor gene-enhanced chondrocyte and stem cell transplantation techniques. As well as genetic characterization of OCD in animals and man using microarray expression studies, and clinical application of growth factor recombinant proteins and gene therapy for improved joint, tendon, and bone repair.
Dr. Sean Owens
Dr. Owens, DVM, Diplomate ACVP, Assistant Professor, is a veterinary graduate of Colorado State University. Following an internship in small animal medicine and surgery, he completed a fellowship in small animal transfusion medicine at the University of Pennsylvania’s Penn Animal Blood Bank. Dr. Owens completed his residency training in clinical pathology at UC Davis in 2004, and worked as a clinical pathologist with IDEXX Reference Laboratories, Inc., for two years prior to coming back to UC Davis. His research interest include red cell compatibility issues, blood banking, and transfusion medicine.

Dr. John Peroni
As a clinician, Dr. Peroni has treated a number of horses with musculoskeletal problems amenable to regenerative approaches including mesenchymal stem cells (MSCs) and platelet rich plasma. Dr. Peroni has focused on the use of transduced MSCs in bone formation using an ovine fracture model, as well as the immunomodulatory effects of equine bone marrow derived MSCs as part of an investigation into the use of allogenic stem cells for therapeutic purposes. His research includes the development of immune responses following exposure of equine lymphocytes and monocytes to allogenic MSCs in attempt to understand the relations between these cells and the immune system.

Dr. Christopher Proctor
Dr. Proctor is the principal physician at Alta Orthopedics in Santa Barbara. He has extensive clinical experience in the use of bone marrow derived stem cells for the treatment of tendon and ligament injuries in professional athletes. His patients include many of the most successful baseball and football players in the country.

Dr. Van Snow
Dr. Snow has been in private equine practice since 1978. He has extensive experience working with both fat-derived and embryonic stem cells in over 150 cases. Dr. Snow has been working in conjunction with Dr. Alan Nixon at Cornell University regarding therapeutic applications of stem cell lines developed through his research which have most recently become commercially available (Celavet cells). Dr. Snow has been working in the area of clinical applications for various regenerative medicine products for the past 10 years.

Dr. Allison Stewart
Dr. Allison Stewart completed a combined equine surgery residency and master’s degree in 1999 at Cornell University. She was a surgeon in private practice for two years before going back into a university practice. Dr. Stewart is currently an assistant professor in equine surgery at the University of Illinois. Her current research has been focused on the use of tendon, bone marrow, and muscle derived progenitor cells for tendon and joint repair.
Dr. Wesley Sutter
Dr. Sutter was born in Lander, Wyoming where he was raised on a ranch and in the family’s mixed animal veterinary practice. He received his BS in Biochemistry from Colorado State University in 1997. He then completed his Doctor of Veterinary Medicine from Colorado State University in 2000. Following veterinary school, he completed a one year rotating equine surgery and medicine internship at Rood and Riddle Equine Hospital in Lexington, Kentucky. He then completed a surgical residency at the Ohio State University where he later served as an assistant professor in equine orthopedic surgery before entering private practice as a surgeon at Ocala Equine Hospital. His primary interests is equine orthopedics.

Dr. Jamie Textor
Dr. Textor is an equine surgeon now in pursuit of a PhD in the Tablin Lab at UC Davis. Her areas of research will cover the range of platelets in both healing and disease processes: from platelet-rich plasma as used to aid tissue repair, to platelet-induced inflammation after exposure to air pollution or endotoxin. She graduated in 1998 from Colorado State University, completed an internship in Ocala, Florida, a surgery residency at Cornell University, and became a Diplomate of the American College of Veterinary Surgeons in 2003. She has served as an equine surgeon and instructor at Massey University in New Zealand, Oregon State University, University of Sydney, and UC Davis.

Dr. Martin Vidal
Dr. Martin Vidal, BVSc, MS, PhD, Diplomate ACVS has recently been appointed as an assistant professor of equine surgery in the department of Surgical and Radiological Sciences at the UC Davis, School of Veterinary Medicine. Dr. Vidal’s primary research interests are equine orthopedic diseases with a focus on the biology and application of equine somatic stem cells for regenerative tissue repair. Dr. Vidal is currently investigating growth, differentiation, and senescence characteristics of equine somatic stem cells and their response to tissue targeting and growth factor-induced functional enhancement. His long-term goal is to combine his clinical interests in treating predominantly equine athletic injuries of tendons and ligaments with tissue engineering approaches developed through collaborative research.

Dr. Clare Yellowley
Dr. Yellowley is an Associate Professor in the Department of Anatomy, Physiology and Cell Biology at UC Davis School of Veterinary Medicine. Recently she has begun to study mesenchymal stem cells (MSCs), which are believed to represent a store of potential progenitors for tissue repair and regeneration. The focus of her research is to understand the role of stem cell recruitment and differentiation in bone development, maintenance and repair, including fracture repair. Dr. Yellowley is investigating whether the hypoxic environment at a fracture site stimulates the release of chemotactic factors from bone cells and subsequent migration of MSCs to that site to aid fracture repair. In addition, she is interested in the effects of decreased oxygen on the subsequent differentiation of stem cells down the osteogenic lineage.
Transportation Schedule

Transportation will be provided for the following events on March 5th, 2010:

Transport from Marriott to Alamo Pintado Equine Medical Center
3:30 p.m. Live Demonstrations

Transport from Alamo Pintado Equine Medical Clinic to Los Olivos for Free Time then to Marriott
5:00pm Free Time

Transport from Los Olivos to Marriott
6:30pm Pick Up from Free Time
Please Join Us in Thanking Our Sponsors
1st North American Veterinary Regenerative Medicine Conference
March 5–6, 2010, Santa Ynez Valley, California