

2008 OTA Pre-Meeting Course Basic Science Focus Forum

Theodore Miclau, III, MD, Chair

Wednesday, Oct. 15th (7:30 am - 5:19 pm)

Thursday, Oct. 16th (7:25 - 11:10 am)

Attendees of this activity can earn up to 10.25 AMA PRA Category I Credits™.

Mineral Hall DEFG

Wednesday – Thursday, October 15 – 16, 2008

Target Audience

Attendees of the 24th Annual Meeting of the Orthopaedic Trauma Association, orthopaedic trauma surgeons, fellows and residents, basic scientists, bioengineers and biologists.

Program

Wednesday, October 15, 2008

6:30 am	Registration
7:25 am	Introduction: <i>Theodore Miclau, III, MD, Program Chair</i>
7:30 - 8:45 am	SYMPOSIUM I: Current Concepts in Open Fracture Wound Management Moderators: <i>Emil H. Schemitsch, MD Mohit Bhandari, MD</i>
7:30 am	Biology of Open Fracture Wounds: Implication for Treatment <i>Lawrence X. Webb, MD</i>
7:40 am	Wound Irrigation: How Much Pressure Is Ideal? <i>Mohit Bhandari, MD</i>
7:50 am	Irrigation Solutions: What Is Best? <i>Jeffrey O. Anglen, MD</i>
8:00 am	Local Antibiotic Delivery: What Is the Evidence? <i>Michael D. McKee, MD</i>
8:10 am	Antibiotic Coated Implants: Is There Any Evidence? <i>Andrew H. Schmidt, MD</i>
8:20 am	Wound Coverage: Is the VAC All That Is Needed? <i>James P. Stannard, MD</i>
8:30 am	Discussion

8:45 - 9:29 am

PAPER SESSION I:

Current Concepts in Open Fracture Wound Management

Moderators: *Emil H. Schemitsch, MD
Mohit Bhandari, MD*

8:45 am

Overview: *Emil H. Schemitsch, MD*

8:55 am

A Comparison of Sterile and Potable Water Irrigation in a Porcine Open Fracture Model

Robert J. Gaines, MD; Craig Randall, MD; Marlene DeMaio, MD; Department of Orthopaedics, Naval Medical Center Portsmouth, Portsmouth, Virginia, USA

9:01 am

Locally Administered Antibiotics in Extremity Wounds

Joanna G. Branstetter, MD¹; Stephanie R. Jackson²; Kelly Richelsoph, PhD²; Warren O. Haggard, PhD²; ¹US Army Institute of Surgical Research, San Antonio, Texas, USA ²Department of Biomedical Engineering, University of Memphis, Memphis, Tennessee, USA

9:07 am

A Skeletal Drug Delivery System: Gentamicin and Vancomycin Incorporated Calcium Phosphate Cement

Sahil Jalota, PhD¹; Stephen R. Arndt, MD²; B. Hudson Berrey, MD²; Bradford Davis¹; David C. Delaney¹; Duran N. Yetkinler MD¹; ¹Skeletal Kinetics, Cupertino, California, USA; ²College of Medicine, University of Florida, Jacksonville, Florida, USA

Focus Forum Program, *continued*

9:13 am	The Protective Effect of Intramedullary Reaming on Bacterial Seeding in a Cadaveric Open Femur Fracture Model <i>James Romanowski, MD;</i> <i>Michael T. Archdeacon, MD;</i> <i>Paula Mobberley-Schuman;</i> <i>Alison Weiss, PhD;</i> <i>University of Cincinnati,</i> <i>Cincinnati, Ohio, USA</i>	11:17 am	Comparison of Ostabolin-C to Parathyroid Hormone (PTH 1-34) in the Enhancement of Experimental Fracture Healing Megan Lynne Young, MD¹; <i>Rachel Fontaine²;</i> <i>Gerstenfeld Louis, PhD¹;</i> <i>Elise Morgan, PhD²;</i> <i>Thomas A. Einhorn, MD¹;</i> ¹ <i>Boston University Medical Center,</i> <i>Boston, Massachusetts, USA</i> ² <i>Boston University College of Engineering</i> <i>Aerospace and Mechanical Engineering,</i> <i>Boston University,</i> <i>Boston, Massachusetts, USA</i>
9:19 am	Discussion		
9:25 am	Break		
9:45 - 10:55 am	SYMPOSIUM II: Fracture Repair Moderators: <i>Theodore Miclau, III, MD</i> <i>David J. Hak, MD, MBA</i>	11:23 am	Discussion
9:45 am	Effects of Inflammation on Bone Healing <i>John T. Gorczyca, MD</i>	11:29 am	The Effect of rhBMP-7 on Fracture Healing in an Ischemic Environment Chuanyong Lu, MD; <i>Zhiqing Xing, MD;</i> <i>Theodore Miclau, III, MD;</i> <i>University of California at San Francisco,</i> <i>San Francisco, California, USA</i>
9:55 am	Role of Angiogenesis in Fracture Repair <i>Kurt D. Hankenson, DVM, MS, PhD</i>		
10:05 am	Progenitor Cells: Where Do They Come From? <i>Celine Colnot, PhD</i>	11:35 am	Temporal and Spatial Dynamics of Sclerostin Expression During Murine Fracture Repair <i>Damian Genetos, PhD¹;</i> <i>Safdar Khan, MD²;</i> <i>Savvas Papanicolaou²;</i> <i>David Fyhrie, PhD²;</i> Mark A. Lee, MD²; ¹ <i>Biomedical Engineering, University of</i> <i>California, Davis, Davis, California, USA;</i> ² <i>Department of Orthopaedic Surgery,</i> <i>University of California, Davis,</i> <i>Davis, California, USA</i>
10:15 am	Endocrinopathies and Healing: Effects of Diabetes <i>Sheldon S. Lin, MD</i>		
10:25 am	The Influence of the Mechanical Environment on Fracture Repair <i>Elise F. Morgan, PhD</i>		
10:35 am	Discussion		
10:55 - 11:53 am	PAPER SESSION II: Fracture Repair Moderators: <i>Theodore Miclau, III, MD</i> <i>David J. Hak, MD, MBA</i>	11:41 am	Bone Repair Is Affected by the Age and Composition of Inflammatory Cells at the Fracture Site Zhiqing Xing, MD; <i>Chuanyong Lu, MD;</i> <i>Diane Hu, MD;</i> <i>Theodore Miclau, III, MD;</i> <i>University of California at San Francisco,</i> <i>San Francisco, California, USA</i>
10:55 am	Overview: <i>David J. Hak, MD, MBA</i>		
11:05 am	5-Lipoxygenase Is a Negative Regulator of Fracture Repair Jessica A. Cottrell, PhD; <i>J. Patrick O'Connor, PhD;</i> <i>University of Medicine and Dentistry of</i> <i>New Jersey, New Jersey Medical School,</i> <i>Newark, New Jersey, USA</i>	11:47 am	Discussion
11:11 am	Role of Oxygen in Fracture Repair <i>Chuanyong Lu, MD;</i> <i>Arjun Sinha;</i> <i>Mark Rollins, MD;</i> Theodore Miclau, III, MD; <i>Ralph Marcucio, PhD;</i> <i>University of California at San Francisco,</i> <i>San Francisco, California, USA</i>	11:53 am – 1:00 pm	Lunch

Focus Forum Program, *continued*

1:00 - 2:10 pm	SYMPOSIUM III: The Nuts and Bolts of Biomechanical Testing Moderators: <i>Steven A. Olson, MD</i> <i>J. Lawrence Marsh, MD</i>	2:32 pm	Comparison of Fixation of Small Fragment and Mini-Fragment Lag Screws in an Osteoporotic Bone Model <i>Samir Mehta, MD¹;</i> <i>Daphne M Beingessner, MD²;</i> ¹ <i>University of Pennsylvania, Philadelphia, Pennsylvania, USA</i> ² <i>Harborview Medical Center, Seattle, Washington, USA</i>
1:00 pm	Specimen Selection – What Considerations Are Important? <i>Steven A. Olson, MD</i>		
1:15 pm	Mechanical Testing – What Method Should I Use? <i>Louis E. DeFrate, MS</i>	2:38 pm	•BMD Patterns of S1 Using Quantitative CT and Biomechanical Strategy for SI Fixation <i>Christopher Jones, MD¹;</i> <i>Gregory A. Zych, DO¹;</i> <i>Edward L. Milne²;</i> <i>David Kaimrajh²;</i> ¹ <i>University of Miami, Department of Orthopaedics and Rehabilitation, Miami, Florida, USA</i> ² <i>Max Biedermann Institute for Biomechanics, Miami, Florida, USA</i>
1:30 pm	Finite Element Modeling – When Is This Helpful? <i>Donald D. Anderson, PhD</i>		
1:45 pm	Limitations of Biomechanical Testing? <i>J. Lawrence Marsh, MD</i>		
2:00 pm	Discussion		
2:10 - 2:54 pm	PAPER SESSION III: Biomechanics of Fracture Fixation Moderators: <i>Steven A. Olson, MD</i> <i>J. Lawrence Marsh, MD</i>	2:44 pm	Discussion
2:10 pm	Overview: <i>J. Lawrence Marsh, MD</i>	2:54 pm	Break
2:20 pm	A Biomechanical Comparison of Three Distal Humerus Fixation Methods <i>Veerabhadra Reddy, MD¹;</i> <i>Yupeng Ren²;</i> <i>Robert Matlock, MD³;</i> <i>Navjot Kohli, MD⁴;</i> <i>Li-Qun Zhang, PhD²;</i> <i>Bradley Merk, MD⁴;</i> ¹ <i>OrthoCarolina Foot and Ankle Institute, Charlotte, North Carolina, USA</i> ² <i>Rehabilitation Institute of Chicago, Chicago, Illinois, USA</i> ³ <i>M and M Orthopaedics, Downers Grove, Illinois, USA</i> ⁴ <i>Northwestern University, Feinberg School of Medicine, Department of Orthopedic Surgery, Chicago, Illinois, USA</i>	3:15 - 4:35 pm	SYMPOSIUM IV: Cartilage Injury and Repair Moderators: <i>Joseph Borrelli, Jr., MD</i> <i>Hans-Christoph Pape, MD</i>
2:26 pm	Three Methods of Fixation of the Proximal Tibia: A Biomechanical Analysis under Simulated Physiologic Loading <i>Joshua B Catanzarite¹;</i> <i>Kyle J. Jeray, MD²;</i> <i>Stephanie L. Tanner²;</i> <i>Lisa C. Benson PhD¹;</i> ¹ <i>Clemson University, Clemson, South Carolina, USA</i> ² <i>Greenville Hospital System, Greenville, South Carolina, USA</i>	3:15 pm	ORS 2008 Annual Meeting Update: What Is New in Cartilage Injury and Repair? <i>Joseph Borrelli, Jr., MD</i>
		3:25 pm	Animal Models of Articular Cartilage Repair <i>Steven A. Olson, MD</i>
		3:35 pm	Articular Instability and Incongruity: Pathomechanics <i>Todd O. McKinley, MD</i>
		3:50 pm	Can Radiographic Studies Predict Outcome after Articular Injury? <i>J. Lawrence Marsh, MD</i>
		4:05 pm	Is Post-joint Injury Osteoarthritis Preventable? <i>Constance R. Chu, MD</i>
		4:20 pm	Discussion

Focus Forum Program, *continued*

4:35 - 5:19 pm	PAPER SESSION IV: Cartilage Injury and Repair Moderators: <i>Joseph Borrelli, Jr., MD</i> <i>Hans-Christoph Pape, MD</i>
4:35 pm	Overview: <i>Hans-Christoph Pape, MD</i>
4:45 pm	Elucidating the Relationship between Residual Incongruities, Elevated Contact Stresses, and Cartilage Degeneration in a Clinical Series of Tibial Plafond Fractures <i>Thaddeus P. Thomas;</i> <i>Christopher J. Van Hofwegen, MD;</i> <i>Donald D. Anderson, PhD;</i> <i>J. Lawrence Marsh, MD;</i> <i>Thomas D. Brown, PhD;</i> <i>University of Iowa, Iowa City, Iowa, USA</i>
4:51 pm	Effects of High Energy Impact Loads on the Biomechanical and Structural Properties of Articular Cartilage and Subchondral Bone <i>Joseph Borrelli, MD¹; Melissa Zaegel²;</i> <i>Matthew Silva, PhD²;</i> <i>¹University of Texas Southwestern Medical Center, Dallas, Texas, USA</i> <i>²Washington University School of Medicine, St. Louis, Missouri, USA</i>
4:57 pm	Use of Anti-Apoptotic Treatments to Prevent Cartilage Degradation In-Vitro after Acute Trauma to Human Ankle Cartilage <i>Cecilia Pascual Garrido, MD;</i> <i>Arnavaz Hakimiyan; Lev Rappaport, MD;</i> <i>Vivek Shekhawat; Carol Pacione;</i> <i>Markus Wimmer, PhD; Ted Oegema, PhD;</i> <i>Susan Chubinskaya, PhD;</i> <i>Rush University Medical Center, Chicago, Illinois, USA</i>
5:03 pm	Predicting Post-Traumatic Osteoarthritis in Tibial Plafond Fractures Based upon Elevated Contact Stress Exposure <i>Donald D. Anderson, PhD; Wendy Li;</i> <i>Christopher J. Van Hofwegen, MD;</i> <i>J. Lawrence Marsh, MD;</i> <i>Thomas D. Brown, PhD;</i> <i>The University of Iowa, Iowa City, Iowa, USA</i>
5:09 pm	Discussion
5:19 pm	Adjourn

Thursday, October 16, 2008

7:00 am	Breakfast
7:25 am	Introduction <i>Theodore Miclau, III, MD, Program Chair</i> <i>(Mineral Hall DEFG)</i>
7:30 - 8:40 am	SYMPOSIUM V: Tissue Engineering Moderators: <i>Edward J. Harvey, MD</i> <i>Steven A. Olson, MD</i>
7:30 am	What Is Tissue Engineering: From the Macro to the Nano <i>Edward J. Harvey, MD</i>
7:45 am	Functional Tissue Engineering of Cartilage <i>Steven A. Olson, MD</i>
7:55 am	Massive Bone Defects: Options in Tissue Engineering <i>Justin A. Jacobson, MD</i>
8:10 am	Optimization of the Body's Response in Tissue Engineering <i>Randall E. Marcus, MD</i>
8:20 am	Discussion
8:40 - 9:38 am	PAPER SESSION V: Tissue Engineering Moderators: <i>Edward J. Harvey, MD</i> <i>Steven A. Olson, MD</i>
8:40 am	Overview: <i>Edward J. Harvey, MD</i>
8:50 am	Recombinant Human Bone Morphogenetic Protein-2 (rhBMP-2) and Collagen Enhance Bone Regeneration in Diabetic and Non-Diabetic Rat Models <i>Eric Adam Breitbart, MD;</i> <i>Vikrant Azad, MD; Sloane Yeh, MD;</i> <i>Loay Al-Zube, MD; Sheldon Sutton Lin, MD;</i> <i>University of Medicine & Dentistry of New Jersey, New Jersey Medical School, Newark, New Jersey, USA</i>
8:56 am	Mesenchymal Stem Cell (MSC) Augmentation Enhances Allograft Incorporation in a Diabetic Rat Model <i>Eric Breitbart, MD; Sharonda Meade, MD;</i> <i>Sloane Yeh, MD; Loay Al-Zube, PhD;</i> <i>Vikrant Azad, MD; Yee-Shaun Lee, PhD;</i> <i>Treena Arinzech, PhD; Sheldon Sutton Lin, MD;</i> <i>University of Medicine & Dentistry of New Jersey, New Jersey Medical School, Newark, New Jersey, USA</i>

Focus Forum Program, *continued*

- 9:02 am **Bone Graft and Waste Irrigation Obtained Using the Reamer-Irrigator-Aspirator (RIA) Induce Bone Growth in the Rat Muscle Pouch**
Rena L. Stewart, MD;
James P. Stannard, MD;
David A. Volgas, MD;
Irshad H. Chaudry, MD;
Justin N. Duke, MD; Jorge E. Alonso, MD;
University of Alabama at Birmingham,
Birmingham, Alabama, USA
- 9:08 am Discussion
- 9:14 am **Repair of Segmental Bone Gap Using Multipotent Adult Stem Cells (MASCs)**
Timothy Achor, MD; Casey Chafe;
David E. Asprinio, MD;
New York Medical College,
Valhalla, New York, USA
- 9:20 am **Tissue-Engineered Reconstruction of Massive Femoral Defects Treated with Teriperatide (rhPTH(1,34))**
Justin A. Jacobson, MD;
Randy N. Rosier, PhD; Regis J. O'keefe MD;
Susan V. Bukata, MD; Tulin Dadali;
Laura Yanuso; David G. Reynolds;
Hani A. Awad, PhD;
University of Rochester,
Rochester, New York, USA
- 9:26 am **Local Delivery of Recombinant Human Platelet-Derived Growth Factor BB (rhPDGF-BB) and Beta-Tricalcium Phosphate/Collagen Matrix Enhance Fracture Healing in a Diabetic Rat Model**
Loay A. Al-Zube, PhD¹; Eric A. Breitbart¹;
J. Patrick O'Connor, PhD¹;
J. Russell Parsons, PhD¹;
Gino Bradica, PhD²; Charles E. Hart PhD³;
Sheldon S. Lin, MD¹;
¹*New Jersey Medical School and Graduate School of Biomedical Sciences,*
Newark, New Jersey, USA;
²*Kensley Nash Corporation,*
Exton, Pennsylvania, USA;
³*BioMimetic Therapeutics, Inc.,*
Franklin, Tennessee, USA
- 9:32 am Discussion
- 9:38 am **Break**
- 10:00 - 11:10 am **SYMPOSIUM VI:
Publishing a Paper: How Do I Do It?**
Moderators: *Mohit Bhandari, MD*
Emil H. Schemitsch, MD
- 10:00 am **Overview-What to Consider Before You Start Writing**
Roy Sanders, MD
- 10:10 am **Presented But Never Published: Why Don't Papers Get Published**
Emil H. Schemitsch, MD
- 10:20 am **Formatting Your Paper for Success**
Michael D. McKee, MD
- 10:30 am **Authorship, Acknowledgment, and Conflicts of Interest**
Paul Tornetta, III, MD
- 10:40 am **How to Address Reviewer Comments: Do's and Dont's**
Thomas A. Einhorn, MD
- 10:50 am Discussion
- 11:10 am **Adjourn**
- ANNUAL MEETING BEGINS at 12:50 pm
(Capitol Ballroom, Level 4)