

## TOBI 2017

8th Annual PRP & Regenerative Medicine Symposium, Workshops & Cadaver Labs

### SYMPOSIUM

*New Research, Protocol Updates & Networking with Global Field Leaders*

June 9 -10, 2017

10.5 CME

#### WELCOME

**1. Welcome & Introduction** **3:15**

**Steven Sampson, DO**, Founder of The Orthobiologic Institute (TOBI) and The Orthohealing Center, Los Angeles, CA

**2. Regenerative Orthobiologics Registry (ROR)** **9:13**

**Kwadwo Boachie-Adjei**, Regenerative SportsCare Institute, New York, NY

#### PROLOTHERAPY

**3. Where Prolotherapy Fits into Ortho/Regenerative Medicine Protocols** **15:47**

**Joanne Borg-Stein, MD**, Harvard/Spaulding Sports Medicine, Harvard Medical School, Boston, MA

**4. Prolotherapy for Knee Osteoarthritis: An Evidence-based Review** **16:28**

**David P. Rabago, MD**, University of Wisconsin Medical School, Madison, WI

#### PLATELET RICH PLASMA (PRP)

**5. Customized PRP Treatments to Manipulate Healing Mechanisms** **16:57**

**Isabel Andia, PhD**, Cruces University Hospital/BioCruces Health Research Institute, Barakaldo, Bizkaia, Spain

**6. Biologic Vitality** **14:35**

**Allan K. Mishra, MD**, Menlo Medical Clinic: Stanford Hospital, Menlo Park, CA

**7. Intraarticular and Intraosseous Platelet Rich Growth Factor (PRGF) for Moderate to Severe Knee Osteoarthritis** **17:13**

**Mikel Sánchez Álvarez, MD**, Arthroscopic Surgery Unit, Vittoria-Gasteiz, Spain

**8. Q&A: PROLOTHERAPY & PRP**

**DEBATE: Prolotherapy vs Platelet Rich Plasma (PRP): When & Why?** **32:52**

**Brian Shiple, MD**, The Center for Sports Medicine, Springfield, PA

**Joanne Borg-Stein, MD**, Harvard/Spaulding Sports Medicine, Harvard Medical School, Boston, MA

**David P. Rabago, MD**, University of Wisconsin Medical School, Madison, WI

**Isabel Andia, PhD**, Cruces University Hospital/BioCruces Health Research Institute, Barakaldo, Bizkaia, Spain

**Allan K. Mishra, MD**, Menlo Medical Clinic: Stanford Hospital, Menlo Park, CA

**Alberto Gobbi, MD**, Oasi Bioresearch Foundation Gobbi Onlus, Milan, Italy

**Mikel Sánchez Álvarez, MD**, Arthroscopic Surgery Unit, Vittoria-Gasteiz, Spain

## SPINE

**9. A Comparison of PRP Vs Hypertonic Glucose for Sacroiliac joint (SIJ) Incompetent Patients** 8:39

Jeni Saunders, MBBS FACSP, University of Sydney, Sydney Australia

**10. Intradiscal Biologics: Where Are We Going** 19:29

Gregory Lutz, MD, Hospital for Special Surgery, New York, NY

**11. Intradiscal Injection of an Autologous Alpha-2-Macroglobulin (A2M) Concentrate Alleviates Back Pain in FAC-Positive Patients** 13:57

Gaetano Scuderi, MD, Palm Beach Spine & Sport, Palm Beach, FL

**12. A Neurosurgeon's Perspective on Adipose Stem Cells in the Spine** 5:25

Daniel Laich, DO, Swedish Covenant Hospital, Chicago, IL

**13. Q&A: SPINE** 11:23

**14. Orthobiologics Ethics Statement** 7:36

Don Buford, MD, Dallas PRP and Stem Cell Institute, Dallas, TX

## MILITARY TO MAINSTREAM

**15. Orthobiologics: Changing & Saving Lives through Coalition of the Willing and Warrior2Warrior** 18:02

Captain Tom Chaby (SEAL, retired), former Commanding Officer of SEAL Team FIVE, former Director of Preservation of the Force and Family (POTFF), United States Special Operations Command (USSOCOM), Tampa Bay, FL

**16. Bringing Regenerative Medicine into the 21st Century with Advanced Manufacturing** 17:48

James J. Yoo, MD, PhD, Wake Forest Institute, Winston-Salem, NC

**Q&A: MILITARY TO MAINSTREAM**

## REGULATORY

**17. Rules of Engagement: Regulatory Updates on Regenerative Medicine and the FDA** 16:38

Andrew S. Ittleman, JD, Fuerst Ittleman David & Joseph, PL, Miami, FL

**Q&A: REGULATORY**

## STEM CELLS

**18. Muse Cells** 8:57

Cristina Bertolotto, MD, ClusterXStem, Inc, Los Angeles, CA

<b>19. PRP is an MSC Activator</b>	<b>11:35</b>
Arnold I. Caplan, PhD, Skeletal Research Center, Cleveland, OH	
<b>20. It Takes Two to Tango: MSCs and Biomimetic Scaffolds</b>	<b>16:00</b>
Rocky Tuan, PhD, University of Pittsburgh, Center for Cellular and Molecular Engineering, Pittsburgh, PA	
<b>21. DEBATE: Caplan Vs Tuan: Nature Vs Nurture – How MSCs Work &amp; How to Best Use Them</b>	<b>19:44</b>
Arnold I. Caplan, PhD, Skeletal Research Center, Cleveland, OH	
Rocky Tuan, PhD, University of Pittsburgh, Center for Cellular and Molecular Engineering, Pittsburgh, PA	
<b>BONE MARROW CONCENTRATE (BMC)</b>	
<b>22. BMC Treatment for Knee Osteoarthritis: 2 year Prospective Trial and Cellular Analysis of Single vs. Multiple Site Marrow Harvesting Techniques</b>	<b>16:23</b>
Kristin Oliver, MD, Bluetail Medical Group, Chesterfield, MO	
<b>23. BMC with High-dose PRP for ACL: Updated RCT Data</b>	<b>12:53</b>
Christopher Centeno, MD, Centeno Schultz Clinic, Broomfield, CO	
<b>24. Quantitative Analysis of BMC and PRP Samples: Experience in a Clinical Setting</b>	<b>16:38</b>
David Karli, MD, Grayledge Technologies, LLC, Steadman Clinic, Vail, CO	
<b>25. The Biologic Treatment of Subchondral Bone Lesions</b>	<b>15:58</b>
Jason L. Dragoo, MD, Stanford School of Medicine, Stanford, CA	
<b>26. Q&amp;A: BONE MARROW CONCENTRATE</b>	<b>15:36</b>
<b>LIPOASPIRATE</b>	
<b>27. Injection of Autologous Micro-fractured Non-expanded Adipose Tissue for Knee Meniscus Tears and General Database Results</b>	<b>12:16</b>
Jay E. Bowen, DO, New Jersey Sports Medicine, Cedar Knolls, NJ	
<b>28. A Prospective, Randomized, Blinded and Placebo-controlled Efficacy Study of Intraarticular Allogeneic Adipose Stem Cells for the Treatment of Osteoarthritis in Dogs</b>	<b>13:37</b>
Robert J. Harman, DVM, VetStem Biopharma, Inc., Poway, CA	
<b>29. The Use of Adipose Derived Progenitor Cells and Platelet Rich Plasma Combination for the Treatment of Supraspinatus Tendinopathy in 55 Dogs: A Retrospective Study</b>	<b>15:50</b>
Sherman Canapp, DVM, Veterinary Orthopedic & Sports Medicine Group, Annapolis Junction, MD	
<b>30. The Combination of Adipose Stem Cells and Platelet Rich Plasma for Treatment of MSK Disorders – Scientific and Clinical Rationale</b>	<b>18:17</b>
Randy Miller, MD, Cosmetic & Reconstructive Plastic Surgery, Coconut Grove, FL	
<b>31. Q&amp;A: BONE MARROW CONCENTRATE (BMC)</b>	<b>25:08</b>
<b>DEBATE: BMC &amp; LIPOASPIRATE – What we know...</b>	
Jason L. Dragoo, MD, Stanford School of Medicine, Stanford, CA	
Kristin Oliver, MD, Bluetail Medical Group, Chesterfield, MO	
Christopher Centeno, MD, Centeno Schultz Clinic, Broomfield, CO	

David Karli, MD, Grayledge Technologies, LLC; Steadman Clinic, Vail, CO

Jay E. Bowen, DO, New Jersey Sports Medicine, Cedar Knolls, NJ

Robert J. Harman, DVM, VetStem Biopharma, Inc., Poway, CA

Wenchun Qu, MD, PhD, Mayo Clinic Department of Physical Medicine and Rehabilitation, Rochester, MN

Sherman Canapp, DVM, Veterinary Orthopedic & Sports Medicine Group, Annapolis Junction, MD

Randy Miller, MD, Cosmetic & Reconstructive Plastic Surgery, Coconut Grove, FL

## MINIMALLY INVASIVE BIOLOGICS – KNEE & TENDON

### 32. New Biologic Approaches to Save the ACL 15:19

Ignacio Dallo, MD, Unit of Regenerative Therapy and Arthroscopic Surgery, Sanatorio Garay, Santa Fe, Argentina

### 33. Platelet Rich Plasma (PRP) vs Bone Marrow Concentrate (BMC) in Treating Tendonopathy 14:56

Alan Hirahara, MD, Sacramento Orthopedic Center, Sacramento, CA

### 34. Biologic Knee Reconstruction: Meniscus Allograft and Articular Cartilage Paste Grafting for Athletes and Arthritis 15:14

Kevin R. Stone, MD, Stone Clinic, San Francisco, CA

### 35. Platelet Rich Growth Factor (PRGF) for Nerve Infiltration and Spine Data 14:58

Sabino Padilla, MD, PhD, Eduardo Anitua Foundation, Vitoria, Spain

### 36. Extracorporeal Shock Wave Therapy. The Ultimate in Mechanotransduction 16:47

Nicola Maffulli, MD, PhD, Queen Mary University, London, England

### 37. DEBATE: Tendinopathy: Mechanical Procedures Vs Orthobiologics 21:56

Allan K. Mishra, MD, Menlo Medical Clinic: Stanford Hospital, Menlo Park, CA

Ramón Cugat MD, PhD, Garcia Cugat Foundation, Barcelona, Spain

Ignacio Dallo, MD, Unit of Regenerative Therapy and Arthroscopic Surgery, Sanatorio Garay, Santa Fe, Argentina

Alan Hirahara, MD, Sacramento Orthopedic Center, Sacramento, CA

Kevin R. Stone, MD, Stone Clinic, San Francisco, CA

Sabino Padilla, MD, PhD, Eduardo Anitua Foundation, Vitoria, Spain

Nicola Maffulli, MD, PhD, Queen Mary University, London, England

### 38. PANEL: PRP and STEM CELL Non-Responders/Complications: When, Why & What to Do Next 10:13

David Karli, MD, Grayledge Technologies, LLC, Steadman Clinic, Vail, CO

Don Buford, MD, Dallas PRP and Stem Cell Institute, Dallas, TX

Ramón Cugat MD, PhD, Garcia Cugat Foundation, Barcelona, Spain

Alberto Gobbi, MD, Oasi Bioresearch Foundation Gobbi Onlus, Milan, Italy

Jay E. Bowen, MD, New Jersey Sports Medicine, Cedar Knolls, NJ

Mikel Sánchez Álvarez, MD, Arthroscopic Surgery Unit, Vittoria-Gasteiz, Spain

Danielle Aufiero, MD, Orthohealing Center, Los Angeles, CA

## **PROTOCOLS & CME REVIEW**

### **39. Protocols: TOBI 2017 Takeaways**

**Dallas Kingsbury, MD**, NYU Langone Medical Center, New York, NY

### **40. CME Review: Claim TOBI 2017 Credits**

**Dallas Kingsbury, MD**, NYU Langone Medical Center, New York, NY

## **41. CLOSING COMMENTS**

**Steven E. Sampson, DO**, Founder of The Orthobiologic Institute (TOBI) and Orthohealing Center, Los Angeles, CA

## **IMPORTANT - DISCLAIMER & RELEASE**

The Orthobiologic Institute (TOBI) was established by Dr. Steven Sampson to share best practices in the cutting-edge field of orthobiologics and regenerative medicine therapies with physicians around the world.

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# TOBI - The Orthobiologic Institute

## 8th Annual PRP & Regenerative Medicine Symposium

*Maximum Credits: 10.5 AMA PRA Category 1 credits™*

June 9 & 10, 2017 – Las Vegas NV

### Disclosure Statements

#### Speaker Faculty:

- Isabel Andia, PhD, Consultant for Recellerate & Orthocell
- Danielle Aufiero, MD, has no significant financial interest in any of the products or manufacturers mentioned.
- Cristina Bertolotto, MD, is a Co-owner and Speaker for ClusterXStem, Inc.
- Kwadwo Boachie-Adjei, MD, has no significant financial interest in any of the products or manufacturers mentioned.
- Joanne Borg-Stein, MD, has no significant financial interest in any of the products or manufacturers mentioned.
- Jay Bowen, DO, is a Consultant for Lipogems.
- Don Buford, MD, is a consultant for Conmed Linvac and Celling Biosciences, on the speakers bureau for SonositeTerason.
- Sherman Canapp, DVM, is a Consultant for Companion Regenerative Therapies and VetCell Therapeutics, receives royalties from Everest, Inc., is Chairman of the Board and receives royalties from Zygood Veterinary Incorp.
- Arnold I. Caplan, PhD, is a Consultant for Lipogems and receives royalties from Mesoblast.
- Christopher Centeno, Medical Group Practice, Regenerative Sciences.
- Captain Tom Chaby (SEAL, retired) has no significant financial interest in any of the products or manufacturers mentioned.
- Ramon Cugat, MD, PhD, has no significant financial interest in any of the products or manufacturers mentioned.
- Ignacio Dallo, MD, has no significant financial interest in any of the products or manufacturers mentioned.
- Jason Dragoo, MD is a Consultant for Zimmer Biomet.
- Alberto Gobbi, MD, has no significant financial interest in any of the products or manufacturers mentioned.
- Robert J. Harman, DVM, is CEO of VetStem Biopharma, Inc.
- Alan Hirahara, MD, Arthrex Inc-consulting, speaker; Calrius Mobile Health Inc stock options, medical advisory board Life Health consultant; Am J Orthop, board.
- Andrew S. Ittleman, JD, has no significant financial interest in any of the products or manufacturers mentioned.
- David Karli, MD, has no significant financial interest in any of the products or manufacturers mentioned.

- Dallas Kingsbury, MD, has no significant financial interest in any of the products or manufacturers mentioned.
- Daniel Laich, DO, has no significant financial interest in any of the products or manufacturers mentioned.
- Gregory Lutz, MD, Biver therapies, stock-chief medical officer.
- Nicola Maffulli, MD, PhD, has no significant financial interest in any of the products or manufacturers mentioned.
- Randy B. Miller, MD, has no significant financial interest in any of the products or manufacturers mentioned.
- Allan K. Mishra, MD, has no significant financial interest in any of the products or manufacturers mentioned.
- Kristin Oliver, MD, Arthrex Inc, consultant.
- Sabino Padilla, MD, PhD, BTI Foundation.
- David P. Rabago, MD, has no significant financial interest in any of the products or manufacturers mentioned.
- Steven E Sampson, DO, is a Medical Research Consultant for Cesca Therapeutics.
- Mikel Sanchez Alvarez, MD, has no significant financial interest in any of the products or manufacturers mentioned.
- Jeni Saunders, MBBS, FACSP, has no significant financial interest in any of the products or manufacturers mentioned.
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- Brian Shiple, MD, has no significant financial interest in any of the products or manufacturers mentioned.
- Kevin R. Stone, MD, has no significant financial interest in any of the products or manufacturers mentioned.
- Rocky Tuan, PhD, Consultant for Recellerate & Orthocell.
- Hunter Vincent, DO, has no significant financial interest in any of the products or manufacturers mentioned.
- James I. Yoo, MD, PhD, has no significant financial interest in any of the products or manufacturers mentioned.

#### **Planning Committee:**

- Steven E. Sampson, DO, Content Expert, has no significant financial interest in any of the products or manufacturers mentioned.
- Danielle Aufiero, MD, has no significant financial interest in any of the products or manufacturers mentioned.
- Jay Smith, MD, has no significant financial interest in any of the products or manufacturers mentioned.

## Objectives

**Upon completion of this activity, the healthcare professional will be able to:**

1. Discuss current research and best practices in biologic regenerative medicine treatments for orthopedic indications, including Prolotherapy, Platelet Rich Plasma, Bone Marrow Concentrate, and Lipoaspirate.
2. Discuss and demonstrate an understanding of biologic treatments for moderate to advanced osteoarthritis.
3. Discuss current research on non-invasive and minimally invasive biologic treatments of tendinopathy, meniscus tears, and ACL.
4. Discuss current research and innovations in biologic spine treatments to alleviate back pain.
5. Discuss regulatory updates on regenerative medicine and the FDA.
6. Discuss the role and function of stem cells in regenerative medicine treatments for orthopedics.
7. List potential cautions and contraindications for orthobiologic treatments Discuss and demonstrate.

## Program Description

Orthobiologics and regenerative medicine therapy is a new and exponentially growing field. The purpose of this symposium is for the leading physicians and researchers worldwide to share new research and best practices in this field. Attendees will leave with guidelines and standardized protocols from world leaders in the field regarding PRP, BMC, Lipoaspirate and more. Each lecture will provide leading edge science and clinical research with take away points for implementation. This is a live symposium, with an alternative option to view lectures live online or recorded videos online or flash drive.

## Purpose

The purpose of this symposium is for the leading surgeons and physicians worldwide to share best practices and new research in this field. Attendees will leave with guidelines and standardized protocols from world leaders in the field regarding PRP, BMC, Lipoaspirate and more.

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## ACCREDITATION STATEMENTS

### ***AMA PRA Category 1 Statement***

This activity has been planned and implemented in accordance with the Essential Areas and Policies of the Accreditation Council for Continuing Medical Education (ACCME) through the joint providership of the Foundation for Care Management (FCM) and TOBI The Orthobiological Institute. FCM is accredited by the ACCME to provide continuing medical education for physicians. Physicians may only claim those hours in actual attendance.

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## TOBI 2017

8th Annual PRP & Regenerative Medicine Symposium, Workshops & Cadaver Labs

### WORKSHOP:

## *Interventional Spine / Pain Management Biologics*

June 8, 2017

Non-CME

- |   |              |
|---|--------------|
| <b>1. Spine Anatomy &amp; Pathophysiology</b>   | <b>21:06</b> |
| Mary A. Ambach, MD, Orthohealing Center, Los Angeles, CA  |              |
| <b>2. Current Evidence &amp; Literature Review</b>  | <b>10:39</b> |
| Christopher Lutz, MD, Hospital for Special Surgery, New York, NY  |              |
| <b>3. Ultrasound for Interventional Spine</b>   | <b>22:37</b> |
| Marko Bodor, MD, Bodor Clinic, Napa, CA   |              |
| <b>4. Spine Q&amp;A</b>   | <b>11:49</b> |
| Mary A. Ambach, MD, Orthohealing Center, Los Angeles, CA<br>Christopher Lutz, MD, Hospital for Special Surgery, New York, NY<br>Marko Bodor, MD, Bodor Clinic, Napa, CA   |              |
| <b>5. Fluoroscopy for Interventional Spine</b>  | <b>42:15</b> |
| Gregory E. Lutz, MD, Hospital for Special Surgery, New York, NY   |              |
| <b>6. Procedural Guidelines &amp; Techniques</b>  | <b>25:38</b> |
| Annu Navani, MD, Comprehensive Sport & Spine, Campbell, CA  |              |
| <b>7. Epidurals with Platelet Lysate</b>  | <b>28:11</b> |
| Christopher Centeno, MD, Centeno Schultz Clinic, Broomfield, CO   |              |
| <b>8. Expert Panel Discussion</b>   | <b>19:42</b> |
| Mary A. Ambach, MD, Orthohealing Center, Los Angeles, CA<br>Marko Bodor, MD, Bodor Clinic, Napa, CA<br>Christopher Lutz, MD, Hospital for Special Surgery, New York, NY<br>Gregory E. Lutz, MD, Hospital for Special Surgery, New York, NY<br>Annu Navani, MD, Comprehensive Sport & Spine, Campbell, CA<br>Christopher Centeno, MD, Centeno Schultz Clinic, Broomfield, CO |              |

WORKSHOP:

***Lipoaspirate, Bone Marrow Concentrate & Intraosseous Injections***

June 8, 2017

Non-CME

**Bone Marrow Concentrate Anatomy & Basic Science**

- |  |                     |
|--|---------------------|
| 1. David C. Karli, MD, MBA, Grayledge Technologies, LLC, Steadman Clinic, Vail, CO | <b>Part 1 13:04</b> |
| 2. Don Buford, MD, Dallas PRP and Stem Cell Institute, Dallas, TX                  | <b>Part 2 7:32</b>  |

**3. Bone Marrow Concentrate Literature Review 17:18**

Wenchun Qu, MD, PhD, Mayo Clinic Department of Physical Medicine and Rehabilitation, Rochester,

**4. Bone Marrow Concentrate Techniques & Protocols 18:17**

Paul D. Tortland, DO, FAOASM, RMSK, Valley Sports Physicians & Orthopedic Medicine, Glastonbury,

**5. Lipoaspirate Basic Science 14:24**

Peter A. Everts, PhD, General Director, Da Vinci Clinic, Geldrop, Netherlands

**6. Lipoaspirate Literature Review 15:09**

Christopher J. Rogers, MD, San Diego Orthobiologics Medical Group, San Diego, CA

**7. Lipoaspirate Techniques & Protocols 18:12**

Randy B. Miller, MD, Cosmetic & Reconstructive Plastic Surgery, Coconut Grove, FL

**8. Intraosseous Injections Basic Science, Literature Review, Techniques & Protocols 32:58**

Mikel Sánchez Álvarez, MD, Arthroscopic Surgery Unit, Vittoria-Gasteiz, Spain

**9. Expert Panel Discussion 32:34**

David C. Karli, MD, MBA, Grayledge Technologies, LLC, Steadman Clinic, Vail, CO

Don Buford, MD, Dallas PRP and Stem Cell Institute, Dallas, TX

Wenchun Qu, MD, PhD, Mayo Clinic Department of Physical Medicine and Rehabilitation, Rochester, MN

Paul D. Tortland, DO, FAOASM, RMSK, Valley Sports Physicians & Orthopedic Medicine, Glastonbury, CT

Peter A. Everts, PhD, General Director, Da Vinci Clinic, Geldrop, Netherlands

Christopher J. Rogers, MD, San Diego Orthobiologics Medical Group, San Diego, CA

Randy B. Miller, MD, Cosmetic & Reconstructive Plastic Surgery, Coconut Grove, FL

Mikel Sánchez Álvarez, MD, Arthroscopic Surgery Unit, Vittoria-Gasteiz, Spain