Influential leaders in the field of wound healing present an intimate, interactive three-day program of innovation and ideas exchange.

14th Annual Conference
December 10-13, 2015
El San Juan Resort – A Hilton Hotel | San Juan, Puerto Rico
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PROGRAM FOUNDER
Peter Sheehan, MD

PROGRAM CHAIRMAN
Lawrence Lavery, DPM, MPH
Professor, Plastic Surgery, Orthopaedic Surgery, Physical Medicine & Rehabilitation
University of Texas Southwestern Medical Center

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Chief Medical Officer
Healogics Inc.

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Professor and Director
Program in Cellular, Molecular and Developmental Biology
Center for Innovations in Wound Healing Research
Tufts University School of Medicine

John Lantis, MD
Vice Chairman, Department of Surgery
Mount Sinai St Luke’s and Roosevelt Hospitals

Tanya Rhodes, PhD
Rhodes & Associates, Inc.
CEO, Manukamed USA
ACKNOWLEDGEMENT

This conference is made possible thanks to the sponsorships, contributions, and partnership of:

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SPECIAL GRANT IN SUPPORT OF THE ACTIVITIES OF THE PETER SHEEHAN DIABETES CARE FOUNDATION, INC.

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Peter Sheehan Diabetes Care Foundation, Inc. (PSDCF)
Save A Leg, Save A Life Foundation (SALSAL)

CONTRIBUTORS
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BRH Medical, Ltd.
MiMedx Group, Inc.

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Healogics, Inc.
WebCME
Save A Leg, Save A Life Foundation (SALSAL)

SPECIAL THANKS
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Scott Covington, MD, FACS, CHWS
Robert Diegelmann, Ph.D
Jeffrey Niezgoda, MD, FACHM, MAPWCA, CHWS
Lee C. Rogers, DPM
Robert Snyder, DPM, MSc, CWS


PROGRAM OVERVIEW

WOUND HEALING: SCIENCE & INDUSTRY CONFERENCE

The Wound Healing: Science and Industry Conference (WoundHSI) was envisioned and founded in 1999 by the late Dr. Peter Sheehan. The Conference provides a unique collaboration between Clinicians, Academia, and Industry, in a setting and scale conducive to professional interaction and exchange. It is an intimate meeting of an inherently interested audience, with high quality presentations by academic, clinical, and industry scientists addressing current breakthrough research.

The Conference is unique in that it not only offers advances but provides as well information about emerging science and technology in the area of wound healing. It aims to be multidisciplinary and is a forum for open exchange of ideas and innovations, sometimes not readily available in other forums and where presentations are made without any intellectual restrictions.

The presentation topics are selected by the Planning Committee and are based on research developments and emerging trends that have immediate impact on the field of wound care. Researchers from, both, Industry and Academia, are encouraged to attend and present their scientific and clinical research in platform or poster format.

WoundHSI is not a CME event. CME excludes industry employees and academic scientists from sharing their science and technology, freely, on the same platform. WoundHSI makes this possible. It is one of the few venues where industry can present their research and development ideas, without any intellectual restrictions. And, conversely, it allows academic scientists and clinical researchers in the field of wound healing to have personal interactions with the companies present.

WoundHSI is presented by the Peter Sheehan Diabetes Care Foundation (PSDCF), a non-profit tax-exempt public charitable organization that has been created with the goal of reducing the incidence of Type 2 Diabetes, while improving the lives of those already affected with this devastating chronic disease. Inspired by the work of the late Dr. Sheehan, the Foundation sponsors forums on diabetes management and supports initiatives to foster the exchange of international scientific advances in research and treatment.

PSDCF supports preventive and effective population-based Type 2 Diabetes management programs to diagnose patients, promote data analytics and genetic research on Type 2 Diabetes complications, thus assuring a responsible role in stemming the tide of a complex and deadly disease that has become epidemic.
Program Overview

Program Founder

Peter Sheehan, MD was an internationally well-respected specialist in the field of diabetes. He focused his practice on the lower extremity complications of diabetes. Dr. Sheehan had a particular research interest in peripheral neuropathy, wound healing, Charcot osteoarthropathy, and peripheral arterial disease, and brought his expertise to numerous trials dealing with these areas.

Dr. Sheehan graduated from SUNY-Downstate School of Medicine, where he also completed his residency in internal medicine. He continued his training at the Yale University School of Medicine in New Haven, where he completed a fellowship in Endocrinology and Metabolism.

Dr. Sheehan was actively involved with the American Diabetes Association (ADA) for nearly thirty years, both, on the local and national levels. He served as Chairman of the Council on Foot Care of the ADA and led a consensus panel on peripheral arterial disease and diabetes sponsored by the ADA and the American College of Cardiology (ACC). He was on the Editorial Boards of ‘Wounds’ and ‘Vascular Disease Management’ and served on the Boards of Directors of the ADA, the PAD Coalition, the American Heart Association, the Wound Healing Society, and the Wound Healing Foundation where he served as President. At the time of his passing, Dr. Sheehan was Chair of the Cardiometabolic Risk Initiative of the ADA, as well as President of the NYC Leadership Council of the ADA. He designed an effective system for diabetes management, known as ‘The Sheehan Model’.

Dr. Sheehan is missed but not forgotten, as his name and legacy in diabetes and the complications are memorialized through the Non-Profit Peter Sheehan Diabetes Care Foundation, Inc.
Program Overview

The 3-Day Conference will Feature 8 Symposia in Half-Day Sessions:

- **Friday, December 11, 2015**
  - Session 1: Wound Etiology
  - Session 2: Biofilm and Antimicrobials
  - Session 3: Emerging Devices and Biologics

- **Saturday, December 12, 2015**
  - Session 4: Novel Concepts in Wound Therapy – Angiogenesis and Cell-Based Therapies
  - Session 5: Novel Concepts in Wound Therapy – Non Cell-Based Therapies
  - Session 6: Augmentative Strategies

- **Sunday, December 13, 2015**
  - Session 7: Lower Extremity Advances
  - Session 8: Wound Care Delivery

Target Audience

- Scientists
- Physicians
- Podiatrists
- Surgeons
- Nurses
- Related Wound Care Providers
- Global Regulatory Experts
- Investors in Life Sciences

Purpose

- A conference for the open discussion and dissemination of present and future developments in the biology, treatments, and technology involved in wound healing.
- A forum for participants to engage as both the audience and as presenters.
- A gathering to evaluate the scientific presentations and to express opinions in the area of wound healing.

Objectives

At the conclusion of this three-day conference, the participants should be able to:

- Discuss biological foundations that influence wound diagnosis and treatment choices
- Identify causes to determine factors that retard progression of wound(s) through normal healing phases.
- Apply various clinical scenarios in which emerging wound treatment modalities would be appropriately applied
- Recognize and distinguish applicable treatment standards to utilize in deciding a course of therapy
- Utilize physical and biological markers to differentiate wounds that would benefit from various wound treatment options
- Apply analytics in order to diagnose, appropriately, key etiological factors and perform appropriate treatment interventions
# WoundHSI Agenda – 2015 Schedule

**Day 1 — Thursday, December 10**

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<tr>
<th>Time</th>
<th>Topic</th>
<th>Faculty</th>
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<tr>
<td>2:00PM – 6:30PM</td>
<td>Registration</td>
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<td>6:00PM – 7:30PM</td>
<td>Welcome Reception</td>
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**Day 2 — Friday, December 11**

### Session 1 – Wound Etiology

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<th>Time</th>
<th>Topic</th>
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<tr>
<td>7:00AM</td>
<td>Registration / Breakfast Buffet / Exhibit</td>
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<tr>
<td>7:25AM</td>
<td>Introductory Remarks</td>
<td>FRED GRINNELL, PhD</td>
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<td></td>
<td>The Misjudged Growth Factor Environment</td>
<td>Robert McLemore Professor of Medical Science</td>
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<td>Department of Cell Biology</td>
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<td>Ethics in Science and Medicine Program</td>
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<td>UT Southwestern Medical Center</td>
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<tr>
<td>7:50AM</td>
<td>Opposing and Complementary Forces in Skin Regeneration—Bridging the Gap</td>
<td>TAMAR TENNENBAUM, MD, PhD</td>
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<td>CEO &amp; Founder</td>
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<td>Arava Bio-Tech, Ltd.</td>
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<td>8:10AM</td>
<td>New Modalities for Assessing Perfusion of the Foot</td>
<td>BAUER SUMPIO, MD, PhD</td>
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<td>Professor of Surgery and Radiology</td>
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<td>Yale School of Medicine</td>
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<tr>
<td>8:30AM</td>
<td>Q &amp; A</td>
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<td>8:50AM</td>
<td>Break / Exhibit</td>
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### Session 2 – Biofilm and Antimicrobials

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<th>Time</th>
<th>Topic</th>
<th>Faculty</th>
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<tbody>
<tr>
<td>9:10AM</td>
<td>New Technologies for the Treatment of Pressure Sores</td>
<td>DENNIS PAUL ORGILL, MD, PhD</td>
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<td></td>
<td>Vice Chair of Surgery</td>
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<td>Medical Director of the Wound Care Center</td>
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<td>Brigham and Women’s Hospital</td>
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<td>Professor of Surgery, Harvard Medical School</td>
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<td>9:30AM</td>
<td>SMART: Shrink Manufacturing Advanced Research Tools</td>
<td>MICHELLE KHINE, PhD</td>
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<td>Associate Professor</td>
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<td>University of California, Irvine</td>
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<td>Department of Biomedical Engineering</td>
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<td>UC Irvine</td>
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<tr>
<td>9:50AM</td>
<td>Clinical Approaches to Biofilm Infections</td>
<td>GAYLE M. GORDILLO, MD, FACS</td>
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<td>Associate Professor</td>
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<td>Vice Chair of Research Director, Plastic Surgery Research Lab</td>
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<td>Medical Director, Clinical Wound Services</td>
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<td>Department of Plastic Surgery</td>
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<tr>
<td>10:10AM</td>
<td>Q &amp; A</td>
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<td>10:30AM</td>
<td>Break / Exhibit</td>
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### Session 3 – Emergent Devices and Biologics

<table>
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<th>Time</th>
<th>Topic</th>
<th>Faculty</th>
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| 10:50AM | Synergistic Effects of Negative-Pressure Wound Therapy and Pulsed Radio Frequency Energy on Cutaneous Wound Healing in Diabetic Mice | **LiFei Guo, MD, PhD, FACS**  
Chairman, Department of Plastic Surgery  
Associate Professor, Tufts University  
School of Medicine  
Lahey Hospital Medical Center |
| 11:10AM | Clinical Research in Wound Care; Needs and Next Steps                | **Gerald Lazarus, MD**  
Professor of Dermatology and Medicine  
John Hopkins |
| 11:30AM | Mitigation of Hypertrophic Scar Contraction In Vivo via a Mechanically Appropriate, Biostable Electrospun Scaffold | **Howard Levinson, MD, FACS**  
Duke University Medical Center  
Director of Plastic Surgery Research  
Associate Professor of Plastic and Reconstructive Surgery, Pathology  
Division of Surgical Sciences, Pathology, and Surgery |
| 11:50AM | Industry Changes in Cellular and Tissuebased Products Affect Practice Changes in the United States | **Lee C. Rogers, DPM**  
Medical Director  
Amputation Prevention Centers of America |
| 12:10PM | Q & A                                                                 |                                                                         |
| 12:30PM | Adjourn                                                               |                                                                         |

### Day 3 — Saturday, December 12

### Session 4 – Novel Concepts in Wound Therapy

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<tr>
<th>Time</th>
<th>Topic</th>
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<tr>
<td>7:00AM</td>
<td>Registration / Breakfast Buffet / Exhibit</td>
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| 7:30AM  | Vascular Repair in Normal and Hyperglycemic Conditions                | **Luisa Iruela-Arispe, PhD**  
Professor and Vice-Chair  
Department of Molecular, Cell and Development Biology – UCLA  
Director, Molecular Biology Institute  
Chair, Molecular Biology IDP |
| 7:50AM  | mRNA-based Drug Technologies and their Applications                  | **Ivone Bruno, PhD**  
Director- Clinical RNA Core  
Houston Methodist Research Institute |
| 8:10AM  | The Future of Stem Cells for Wound Repair and Regeneration           | **John W. Harmon, MD FACS**  
Professor of Surgery  
Johns Hopkins University School of Medicine, Department of Surgery  
Hendrix Burn/Wound Laboratory  
Johns Hopkins Bayview Medical Center |
| 8:30AM  | Wound healing Activities of Cellular Placental Matrix                | **Alla Danilkovitch, PhD**  
Chief Scientific Officer  
Osiris Therapeutics, Inc |
| 8:50AM  | Q & A                                                                 |                                                                         |
| 9:10AM  | Break / Exhibit                                                       |                                                                         |
## SESSION 5 - NOVEL CONCEPTS IN WOUND THERAPY

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<th>Time</th>
<th>Topic</th>
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<tr>
<td>9:30 AM</td>
<td>Systems Biology Analysis of Human Wound Healing</td>
<td><strong>Robert F. Diegelmann, PhD</strong>&lt;br&gt;Professor of Biochemistry &amp; Molecular Biology&lt;br&gt;Virginia Commonwealth University, School of Medicine</td>
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<td>9:50 AM</td>
<td>Innovations in Developing Next Generation Wound Healing Therapeutics and Devices</td>
<td><strong>Ira M. Herman, PhD</strong>&lt;br&gt;Professor and Director, Program in Cellular, Molecular and Developmental Biology&lt;br&gt;Center for Innovations in Wound Healing Research&lt;br&gt;Tufts University School of Medicine</td>
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<tr>
<td>10:10 AM</td>
<td>A Surfactant-Based Autolytic Debrider and Biofilm Disrupter</td>
<td><strong>Gregory Schultz, PhD</strong>&lt;br&gt;UF Research Foundation Professor&lt;br&gt;Department of Obstetrics and Gynecology&lt;br&gt;Institute for Wound Research&lt;br&gt;University of Florida</td>
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<tr>
<td>10:30 AM</td>
<td>Hyalomatrix – An Esterified Hyaluronic Acid and Silicone Wound Dressing for Stimulation of Vascularity and Wound Closure</td>
<td><strong>Adam Landsman, DPM, PhD</strong>&lt;br&gt;Assistant Professor of Surgery, Harvard Medical School&lt;br&gt;Chief, Division of Podiatric Surgery&lt;br&gt;Cambridge Health Alliance</td>
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<tr>
<td>10:50 AM</td>
<td>Q &amp; A</td>
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<td>11:10 AM</td>
<td>Break / Exhibit</td>
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## SESSION 6 – AUGMENTATIVE STRATEGIES

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<th>Time</th>
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<tr>
<td>11:30 AM</td>
<td>Electrical Signaling in Wound Healing</td>
<td><strong>Min Zhao, MD, PhD</strong>&lt;br&gt;Professor&lt;br&gt;Ophthalmology and Dermatology Research&lt;br&gt;Institute for Regenerative Cures&lt;br&gt;University of California at Davis, School of Medicine</td>
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<tr>
<td>11:50 AM</td>
<td>Oxygen-Free Radical Scavengers: Revolutionary Intervention</td>
<td><strong>Jeffrey A. Niegoda, MD, FACHM, MAPW-CA, CHWS</strong>&lt;br&gt;President &amp; Chief Medical Officer&lt;br&gt;WebCME, Inc.&lt;br&gt;RxOS Medical, Inc.&lt;br&gt;AZH, Inc.&lt;br&gt;President&lt;br&gt;American College of Hyperbaric Medicine</td>
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<td>12:10 PM</td>
<td>Incision Management with Negative Pressure</td>
<td><strong>Kris Kieswetter, PhD, MBA</strong>&lt;br&gt;Senior Director, Research &amp; Technology&lt;br&gt;Acelity, Inc.</td>
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<tr>
<td>12:30 PM</td>
<td>Q &amp; A</td>
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<tr>
<td>12:50 PM</td>
<td>Adjourn</td>
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<td>6:00 PM – 7:00 PM</td>
<td>Poster Reception</td>
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### DAY 4 — SATURDAY, DECEMBER 14

#### SESSION 7 – LOWER EXTREMITY advances

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<tr>
<td>7:00AM</td>
<td>Breakfast Buffet / Exhibit</td>
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</table>
| 7:30AM   | Evidence-Based Offloading of the Diabetic Foot              | Desmond Bell, DPM, CWS
Limb Salvage and Lower Extremity Wound Care
First Coast Cardiovascular Institute
Founder and President of The Save A Leg, Save A Life Foundation |
| 7:50AM   | Interventional Tools for Revascularization and Limb Salvage: Atherectomy, DCB, Stents. Ongoing Trials and Perspectives | Lawrence Alexander Garcia, MD
Chief, Interventional Cardiology
St. Elizabeth's Medical Center |
| 8:10AM   | Understanding the Mechanical Modalities Effects on the Skin. Harnessing the Science for Better Healing | Jonathan Rosenblum, DPM
Director, Diabetic Foot Service
Shaarei Zedek Medical Center |
| 8:30AM   | Innovations in Diabetic Foot Ulcer Prevention              | Lawrence Lavery, DPM, MPH
Professor, Plastic Surgery, Orthopaedic Surgery, Physical Medicine & Rehabilitation
University of Texas Southwestern Medical Center |

**Session 7 – Lower Extremity Advances**

- **8:50AM** Q & A
- **9:10AM** Break / Exhibit

#### Session 8 - Wound Care Delivery

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<th>Time</th>
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| 9:30AM   | Health Economic & Morbidity Benefit Seen in the Early Intervention of At-Risk PAD Population | Javier Ruiz Aburto, MD, FACS, FICS
Cardiovascular Surgeon
Endovascular Specialist
NACET Program Director
Society Prevention Cardiovascular Diseases
Save a Leg, Save a Heart |
| 9:50AM   | The Importance and Challenges of a Multidisciplinary Approach to Wound Management | Robert J Snyder, DPM, MSc, CWS
Professor and Director of Clinical Research
Director, Fellowship Program in Wound Healing and Clinical Research
Barry University SPM |
| 10:10AM  | How a Wound Specialist Led Team Leads to Better Quality and Outcomes | Charleen Ise, MD
Regional Medical Director, Heallogics Speciality Physicians
Heallogics Inc. |
| 10:30AM  | Q & A                                                      |                                                                        |
| 10:50AM  | Closing Remarks                                            |                                                                        |
| 11:00AM  | Adjourn – Symposium Concludes                              |                                                                        |
Lawrence Lavery, is a board-certified podiatrist and Professor of Plastic Surgery, Orthopaedic Surgery, and Physical Medicine & Rehabilitation at UT Southwestern. He is also medical director of UT Southwestern's Comprehensive Wound Care Center and director of the amputation prevention program at Parkland Memorial Hospital.

Dr. Lavery completed undergraduate studies at Indiana University and then earned his medical degree from the Dr. William Scholl College of Podiatric Medicine in Chicago. He completed a residency in podiatric medicine and surgery at the University of Texas Health Science Center in San Antonio, where he also earned a Master's in Public Health.

Prior to joining UT Southwestern in 2010, Dr. Lavery held academic appointments at the Texas A&M Health Science Center College of Medicine in Temple; the University of Texas Health Science Center in San Antonio; and Loyola University Medical Center in the Chicago area. He has also served as a staff podiatrist at VA hospitals in San Antonio and Illinois.

Dr. Lavery is a member of the American Podiatric Medical Association, American Diabetes Association, and Texas Podiatric Medical Association. He has been invited to lecture on podiatric medicine, diabetic ulcers, and wound care at medical conferences around the world and has published a dozen book chapters and more than 150 research articles on these topics.

His research group has published 208 peer-reviewed papers and has received extramural funding from the VA, NIH, AHRQ, American Diabetes Association, and two American Colleges of Foot and Ankle Surgeons.

He has served on the editorial board for Diabetes Care, and the International Diabetes Monitor, and was editor-in-chief of Foot and Ankle Quarterly and deputy editor of the Journal of Foot and Ankle Surgery.

Scott Covington, Executive Vice President of Medical Affairs and Medical Advisory Board member for Healogics™, oversees medical affairs and assists the staff for over 560 Wound Care Centers. Dr. Covington is the Course Director for the Introduction to Hyperbaric Medicine and Problem Wound Management Course.

A general surgeon with over 20 years of wound care experience, Dr. Covington lectures throughout the U.S. and internationally on wound care and hyperbaric medicine. Certified by the American Board of Surgery and a fellow in the American College of Surgeons, Dr. Covington completed his undergraduate and medical education at the University of North Carolina, Chapel Hill. He trained at the University of Texas, Houston in General Surgery; he was a Thomas G. Cronin Fellow in Wound Healing Research. Dr. Covington is a Certified Hyperbaric and Wound Specialist by the American College of Hyperbaric Medicine and a Wound Healing Society member.

Ira Herman is tenured professor and director, Center for Innovations in Wound Healing Research, Tufts University School of Medicine. Dr. Herman holds appointments in the departments of developmental, molecular & chemical biology, ophthalmology and biomedical engineering. Professor Herman is founding member and director emeritus, Integrated Studies Program, and is currently director, Cell Molecular and Developmental Biology Program, Sackler School of Graduate Biomedical Sciences, Tufts University School of Medicine, where he has received the Distinguished Faculty Award.

Throughout his professional career, and since the time of his graduate and post-graduate studies at Tulane University, Harvard University and Johns Hopkins University School of Medicine, professor Herman’s research interests have been focused on revealing the mechanisms controlling cellular and tissue responses to injury and tissue regeneration, including the vascular remodeling and angiogenesis of wound healing. These basic studies have given rise to several fundamental insights and a deepened understanding of many physiologic and pathologic processes, including the
molecular mechanisms regulating the cellular responses to injury and tissue repair. Furthermore, several of these discoveries have fostered the development of novel technologies for therapeutics and device development, which are described in several issued and pending US and international patents and focus on the promotion of wound healing, scar-less healing, inhibition of ocular or tumor-induced angiogenesis, the etiology of essential hypertension and the abrogation of cancer cell invasion.

During his three-decade tenure at Tufts University, professor Herman has published scores of scholarly reviews and book chapters, and over 80 primary research papers. He serves as editor and scientific reviewer for many scientific journals and is regularly invited as a speaker at scientific meetings, worldwide. Fulfilling his commitment to the scientific community, Professor Herman continues to serve as scientific reviewer and expert consultant for pharma and the biotechnology sectors while having chaired and continuing to participate on grant advisory panels for the National Institutes of Health, Medical Research Council, National Science Foundation, American Heart Association and NASA.

John Lantis attended Albany Medical College where he graduated Cum Laude, and was elected to Alpha Omega Alpha, the medical honor society. He then went on to complete his general surgical residency at Tufts/New England Medical Center and his vascular surgery fellowship at Brigham and Women's Hospital. In 2000 he accepted a faculty position in Surgery at Columbia University, College of Physicians & Surgeons.

Dr. Lantis joined the faculty at St Luke’s-Roosevelt Hospital in 2004, after 4 years in practice at New York Presbyterian Hospital. In 2007 he accepted the position of the Chief of Vascular and Endovascular Surgery at St Luke’s – Roosevelt Hospital. Prior to accepting that position in 2007, he was the Director of Clinical Research for the Department of Surgery, a position he still holds. He is a Fellow of the American College of Surgeons, on the Executive Council of the New York Vascular Surgery Society; and a member of the Peripheral Vascular Surgical Society, and the Society of Vascular Surgeons.

His current basic science research is in the area of the treatment of bio-burden in chronic wounds and intimal response to balloon angioplasty. While the principal investigator on multiple chronic wound trials, he has explored the role of various treatments for wound closure; including negative pressure wound therapy, growth factors, and skin substitutes.

His clinical trials interests also include the world of vascular surgery as well where he focuses on topics such as varied as the endovascular treatment of small aortic aneurysms, to novel delivery systems for anti-neointimal hyperplasia agents.

Dr. Lantis lectures extensively nationally and internationally on the role of the active agents in the treatment of chronic wounds and the importance of the management of bioburden in limb salvage.

TANYA RHODES, PhD
Rhodes and Associates, Inc.
CEO
Manukamed USA

Tanya Rhodes is President and CEO of Rhodes & Associates, a consulting firm founded in 2004 that provides strategic business consulting services from concept through commercialization. Dr. Rhodes serves on a number of boards in the medical sector including non-profit foundations and for profit start-up and incubator companies.

Dr. Rhodes’ previous roles include CEO of a global medical device company that develops, manufactures and commercializes products for wound healing, repair and regeneration and Chief Technology Officer for a start-up pharmaceutical company specializing in novel drug and biotech compounds. In addition, she has held President and General Management positions in both the Professional and Retail market sectors of wound care bringing forward new innovations and drug device combinations from concept to commercialization. Earlier in her career, Dr. Rhodes was Vice President of Innovation for Smith & Nephew both in the US and UK. During her tenure, Smith and Nephew US grew from $27 million to over $150 million.

Dr. Rhodes holds a Masters Degree with a major in Technology Management from the University of Miami and graduated with honors in Chemistry from Hull University, England, as well as completing research for her PhD in Computational Stereochemistry before relocating to the US.
Faculty

Javier Ruiz Aburto, MD, FACS, FICS
Cardiovascular Surgeon
Endovascular Specialist
NACET Program Director
Society Prevention Cardiovascular Diseases
Save a Leg, Save a Heart

Presentation: Health Economic & Morbidity Benefit Seen in the Early Intervention of At-Risk PAD Population

Desmond Bell, DPM, CWS
Limb Salvage and Lower Extremity Wound Care
First Coast Cardiovascular Institute
Founder and President,
The Save A Leg, Save A Life Foundation

Presentation: Evidence-Based Offloading of the Diabetic Foot

Ivone Bruno, PhD
Director, Clinical RNA Core
Houston Methodist Research Institute

Presentation: mRNA-Based Drug Technologies and their Applications

Alla Danilkovitch, PhD
Chief Scientific Officer
Osiris Therapeutics, Inc.

Presentation: Wound Healing Activities of Cellular Placental Matrix

Robert F. Diegelmann, PhD
Professor of Biochemistry & Molecular Biology
Virginia Commonwealth University, School of Medicine

Presentation: Systems Biology Analysis of Human Wound Healing

Lawrence Alexander Garcia, MD
Chief, Interventional Cardiology
St. Elizabeth’s Medical Center

Presentation: Interventional Tools for Revascularization and Limb Salvage Atherectomy, DCB, Stents: Ongoing Trials and Perspectives

Gayle M. Gordillo, MD, FACS
Associate Professor, Vice Chair of Research Director, Plastic Surgery Research lab
Medical Director, Clinical Wound Services
Department of Plastic Surgery
OSU Wexner Medical Center

Presentation: Clinical Approaches to Biofilm Infections

Fred Grinnell, PhD
Robert Mclemore Professor of Medical Science
Department of Cell Biology
Ethics in Science and Medicine Program
UT Southwestern Medical Center

Presentation: The Misjudged Growth Factor Environment

Lifei Guo, MD, PhD, FACS
Chairman, Department of Plastic Surgery
Associate Professor, Tufts University School of Medicine
Lahey Hospital Medical Center

Presentation: Synergistic Effects of Negative-Pressure Wound Therapy and Pulsed Radio Frequency Energy on Cutaneous Wound Healing in Diabetic Mice

John W. Harmon, MD FACS
Professor of Surgery
Johns Hopkins University School of Medicine,
Department of Surgery Hendrix Burn/Wound Laboratory Johns Hopkins Bayview Medical Center

Presentation: The Future of Stem Cells for Wound Repair and Regeneration
**IRA M. HERMAN, PhD**  
Professor and Director  
Program in Cellular, Molecular and Developmental Biology  
Center for Innovations in Wound Healing Research  
Tufts University School of Medicine  

**PRESENTATION:** Innovations in Developing Next Generation Wound Healing Therapeutics and Devices

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**LUISA IRUELA-ARISPE, PhD**  
Professor and Vice-Chair  
Department of Molecular, Cell and Developmental Biology – UCLA  
Director, Molecular Biology Institute  
Chair, Molecular Biology IDP

**PRESENTATION:** Vascular Repair in Normal and Hyperglycemic Conditions

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**CHARLEEN ISE, MD**  
Regional Medical Director  
Healogics Speciality Physicians  
Healogics Inc.

**PRESENTATION:** How a Wound Specialist Led Team Leads to Better Quality and Outcomes

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**MICHELLE KHINE, PhD**  
Associate Professor  
University of California, Irvine  
Department of Biomedical Engineering  
UC Irvine

**PRESENTATION:** SMART: Shrink Manufacturing Advanced Research Tools

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**KRIS KIESWETTER, PhD, MBA**  
Senior Director  
Research & Technology  
Acelity, Inc.

**PRESENTATION:** Incision Management with Negative Pressure

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**ADAM LANDSMAN, DPM, PhD**  
Assistant Professor of Surgery  
Harvard Medical School  
Chief, Division of Podiatric Surgery, Cambridge Health Alliance

**PRESENTATION:** Hyalomatrix – An Esterified Hyaluronic Acid and Silicone Wound Dressing for Stimulation of Vascularity and Wound Closure

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**LAWRENCE LAVERY, DPM, MPH**  
Professor, Plastic Surgery, Orthopaedic Surgery  
Physical Medicine & Rehabilitation  
University of Texas Southwestern Medical Center

**PRESENTATION:** Innovations in Diabetic Foot Ulcer Prevention

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**GERALD LAZARUS, MD**  
Professor of Dermatology and Medicine  
Johns Hopkins

**PRESENTATION:** Clinical Research in Wound Care; Needs and Next Steps

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**HOWARD LEVINSON, MD, FACS**  
Director of Plastic Surgery Research  
Associate Professor, Plastic and Reconstructive Surgery, Pathology, Division of Surgical Sciences, Pathology, and Surgery  
Duke University Medical Center

**PRESENTATION:** Mitigation of Hypertrophic Scar Contraction In Vivo via a Mechanically Appropriate, Biostable Electrospun Scaffold

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**JEFFREY A. NIEZGODA, MD, FACHM, MAPWCA, CHWS**  
President & Chief Medical Officer  
WebCME, Inc.  
RxOS Medical, Inc.  
AZH, Inc.  
President, American College of Hyperbaric Medicine

**PRESENTATION:** Oxygen Free Radical Scavengers: Revolutionary Intervention
DENNIS PAUL ORGILL, MD, PhD
Vice Chair of Surgery
Medical Director, The Wound Care Center
Brigham and Women's Hospital
Professor of Surgery, Harvard Medical School

PRESENTATION: New Technologies for the Treatment of Pressure Sores

LEE C. ROGERS, DPM
Medical Director
Amputation Prevention Centers of America

PRESENTATION: Industry Changes in Cellular and Tissue-based Products Affect Practice Changes in the U.S.

JONATHAN ROSENBLUM, DPM
Director
Diabetic Foot Service
Shaarei Zedek Medical Center

PRESENTATION: Understanding the Mechanical Modalities Effects on the Skin. Harnessing the Science for Better Healing

GREGORY SCHULTZ, PhD
UF Research Foundation Professor
Department of Obstetrics and Gynecology
Institute for Wound Research
University of Florida

PRESENTATION: A Surfactant-Based Autolytic Debrider and Biofilm Disrupter

ROBERT J SNAYDER, DPM, MSc, CWS
Professor and Director of Clinical Research
Director, Fellowship Program in Wound Healing and Clinical Research
Barry University SPM

PRESENTATION: The Importance and Challenges of a Multidisciplinary Approach to Wound Management

BAUER SUMPIO, MD, PhD
Professor of Surgery and Radiology
Yale School of Medicine

PRESENTATION: New Modalities For Assessing Perfusion of The Foot

TAMAR TENNENBAUM, MD, PhD
CEO & Founder
Arava Bio-Tech, Ltd.

PRESENTATION: Opposing and Complementary Forces in Skin Regeneration – Bridging the Gap

MIN ZHAO, MD, PhD
Professor
Ophthalmology and Dermatology Research Institute for Regenerative Cures
University of California at Davis, School of Medicine

PRESENTATION: Electrical Signaling in Wound Healing

Faculty...cont'd
JAVIER RUIZ ABURTO, MD, FACS, FICS  
Cardiovascular Surgeon 
Endovascular Specialist 
NACET Program Director 
Society Prevention Cardiovascular Diseases 
Save a Leg, Save a Heart

Javier Ruiz Aburto is a Cardiovascular and Endovascular cardiothoracic Interventional Specialist. Dr. Aburto followed studies in Medicine at the Autonomous University of Mexico, performing his internships in the Presbyterian Medical Center in Colorado, Manchester Memorial Hospital in Connecticut and Baylor College of Medicine in Texas. In addition, He did his residency in General Surgery at the University of Michigan in St. Joseph Mercy Hospital. Then he continued his training in Cardiovascular and Cardiothoracic Surgery at the Texas Heart Institute of St. Luke's Episcopal Hospital. Currently, Dr. Ruiz has a private practice located in Rovira Office Park Building in Ponce, Puerto Rico.

DESMOND BELL, DPM, CWS  
Limb Salvage and Lower Extremity Wound Care 
First Coast Cardiovascular Institute 
Founder and President, The Save A Leg, Save A Life Foundation

Desmond Bell is the Founder and President of “The Save A Leg, Save A Life” Foundation, a multi-disciplinary non-profit organization dedicated to the reduction in lower extremity amputations and improving wound healing outcomes through evidence based methodology and community outreach. Dr. Bell is a Board Certified Wound Specialist (CWS)-(American Board of Wound Management), and a Fellow of the American College of Certified Wound Specialists. He presently serves on the Board of Directors of the American Board of Wound Management. Dr. Bell was the founder of the Limb Salvage Institute and Wound Care on Wheels, LLC a service that provided wound care to patients in the hospital, home and long term care settings.

Dr. Bell is a graduate of Tulane University and the Temple University School of Podiatric Medicine. He is a frequent lecturer and author on the subject of wound care, peripheral arterial disease and diabetes, and is an editorial Board Member of “Today’s Wound Clinic”, as well as being a regular contributor to “Podiatry Today”. Dr. Bell was awarded the Frist Humanitarian Award by Specialty Hospital Jacksonville for 2009.

He has been in private practice in Jacksonville, Florida since 1997 and is on staff at Memorial Hospital of Jacksonville, St. Vincent’s Southside and Specialty Hospital of Jacksonville. Dr. Bell served on the Medical Executive Committee at Specialty Hospital and is active in the Wound Management program there.

He is a member of the Speaker's Bureau of Organogenesis and serves as a consultant with Organogenesis, 3M, Healiance and DermaSciences.

IVONE BRUNO, PhD  
Director, Clinical RNA Core 
Houston Methodist Research Institute

Ivone Bruno is the director of the Clinical RNA Core at Houston Methodist Research Institute. Dr. Bruno completed a M.S degree in Medical Microbiology at Southern Illinois University (SIUE), and a Ph.D. in Biomedical Sciences and Human Genetics at The University of Texas Graduate School of Biomedical Sciences, and M.D. Anderson Cancer Center (MDACC). Her two postdoctoral fellowships at MDACC and at Baylor College of Medicine were focused on human molecular genetics, RNA biology and miRNA regulation during cancer and neurogenesis.

Dr. Bruno has worked in industry developing gene therapies, and cell-based therapies. She led the scientific team at Ingeneron, Inc. in Houston where adipose derived stem cells were applied as a source of regenerative medicine in veterinary approaches. Dr. Bruno optimized standard operating procedures for the cGMP manufacturing of T cell immune therapies for phase I/II clinical studies in the United States and Europe for patients with hematopoietic malignancies undergoing stem cell transplantations at Bellicum Pharmaceuticals. Dr. Bruno is currently leading clinical approaches for the advancement of mRNA-based therapeutics to provide safer and more efficient regulation of gene expression in cell-based regenerative and therapeutic approaches.

ALLA DANILOVITCH, PhD  
Chief Scientific Officer 
Osiris Therapeutics, Inc.

Alla Danilkovitch joined Osiris in 2003. Dr. Danilkovitch has a proven record of successful product development from scientific ideas to market launch, which includes the world’s first approved stem cell drug, remestemcel-L, for graft-versus-host disease as well as BIO4™ for bone repair, Cartiform® for cartilage repair, Grafix® for acute and chronic wounds, and two most recent products: Truskin for wounds and Stravix for soft tissue repair. The areas of Dr. Danilkovitch scientific expertise include cellular and molecular biology and immunology, stem cell biology and cell therapy development. Prior to joining Osiris, Dr. Danilkovitch conducted
research at the National Cancer Institute of National Institutes of Health, the Max Planck Institute of Biochemistry in Munich, and at Moscow State University. Dr. Danilkovitch earned a Ph.D. in cell biology and an M.S. in cellular immunology and microbiology from Moscow State University.

**ROBERT F. DIEGELMANN, PhD**
*Professor of Biochemistry & Molecular Biology*
Virginia Commonwealth University, School of Medicine

Robert Diegelmann received his PhD from Georgetown University and did a postdoc at the NIH. Dr. Diegelmann then established the Laboratory of Tissue Repair at Virginia Commonwealth University where he is Professor of Biochemistry & Molecular Biology. Dr. Diegelmann co-edited the textbook entitled “Wound Healing: Biochemical and Clinical Aspects”, has published over 180 scientific manuscripts and book chapters on wound healing and currently is editing an eBook entitled “Basic Biology and Mechanisms of Inflammation.” He is one of the Founding Members of The Wound Healing Society and served as the society’s President in 2013.

**LAWRENCE ALEXANDER GARCIA, MD**
*Chief, Interventional Cardiology*
St. Elizabeth's Medical Center

Lawrence Garcia received his training in Cardiology at the University of Iowa Hospitals and Clinics in Iowa City, Iowa and as an interventional cardiologist at the Beth Israel Deaconess Medical Center, Harvard Medical School. Further, Dr. Garcia received his peripheral vascular training at St. Elizabeth’s Medical Center, Tufts University, Boston, and Massachusetts. Dr. Garcia then served at the Beth Israel Hospital as a full time interventional cardiologist and Director of the Peripheral Cardiovascular Program and Peripheral Interventions at the Beth Israel Deaconess Medical Center as well as the Director of the Interventional Fellowship Program and has now returned to St. Elizabeth's Medical Center as Chief of the Section of Interventional Cardiology and Vascular Medicine Programs.

Dr. Garcia continues his research interests in a wide variety of studies including peripheral vascular interventional trials and has served as national or global principal investigator on several trials. He is widely regarded as an expert in peripheral vascular disease and specifically in atherectomy for lower extremity revascularization. His work has been presented in numerous manuscripts, abstracts, textbooks and textbook chapters.

**GAYLE M. GORDILLO, MD, FACS**
*Associate Professor, Vice Chair of Research*
*Director, Plastic Surgery Research Lab*
*Medical Director, Clinical Wound Services*
Department of Plastic Surgery
OSU Wexner Medical Center

Gayle Gordillo is an Associate Professor and Vice-Chair of Research and Chair of the Promotion and Tenure Committee for the Department of Plastic Surgery. Dr. Gordillo is Medical Director of Wound Services for the OSU Health System, which includes oversight of clinical and quality activities and research activities. She is the Principal Investigator or co-Principal Investigator of numerous clinical and translational research protocols, which includes industry, NIH and VA sponsored projects. She is founder and director of the Hemangioma and Vascular Malformation program at Nationwide Children’s Hospital and that program serves as a translational research outlet for her NIH R01 grant on hemangiomas. She is currently a standing member of the Bioengineering Technology and Surgical Sciences study section for NIH, chair of the Research Development Committee for the Plastic Surgery Foundation, the research arm of the American Society of Plastic Surgeons. She previously served on the Board of Directors for the Wound Healing Society and the Plastic Surgery Advisory Council for the American College of Surgeons. She completed the Executive Leadership in Academic Medicine (ELAM) fellowship in 2011.

**FRED GRINNELL, PhD**
*Robert McLemore Professor of Medical Science*
Department of Cell Biology
Ethics in Science and Medicine Program
UT Southwestern Medical Center

Frederick Grinnell is a cell biologist also known for his work in bioethics. Dr. Grinnell’s research contributed to the discovery of fibronectin and its importance in wound repair. Later studies helped popularize using wound fluid to analyze the human wound environment and led to the observation that chronic wounds contain degraded fibronectin and elevated proteinases. Recently, he has focused on the biomechanics of fibroblasts interacting with 3D collagen matrices. In bioethics, Dr. Grinnell works at the boundary between science and philosophy. He has published two books: The Scientific Attitude and Everyday Practice of Science: Where Intuition and Passion Meet Objectivity and Logic.
LIFEI GUO, MD, PhD, FACS
Professor and Director
Program in Cellular, Molecular and Developmental Biology
Center for Innovations in Wound Healing Research
Tufts University School of Medicine
Lahey Hospital Medical Center

Lifei Guo is a board certified plastic surgeon. Dr. Guo did his PhD training under Dr. Elaine Fuchs at the University of Chicago, studying keratinocyte growth factor and its role in epithelial mesenchymal interactions. He received his MD from Yale and completed plastic surgery residency at the combined Harvard program, where he also did a microsurgical fellowship. Afterwards, he was on staff as a plastic surgeon at the Brigham and Women's Hospital for over five years, where he focused on reconstructive surgery and wound healing research. In November of 2011, he took over as the Chair of Plastic Surgery at Lahey Hospital & Medical Center, where he has maintained a busy reconstructive practice and research laboratory.

JOHN W. HARMON, MD FACS
Professor of Surgery
Johns Hopkins University School of Medicine, Department of Surgery Hendrix Burn/Wound Laboratory
Johns Hopkins Bayview Medical Center

John Harmon’s interest in wound healing began at Walter Reed Army Institute of Research where he became the Director of the Division of Surgery responsible for a program of research focused on militarily relevant surgical issues including wound healing. Dr. Harmon continued this work at the Washington VA Hospital and over the last 16 years at Johns Hopkins. Currently, he directs the Surgical Research program at Johns Hopkins Bayview at the Hendrix Burn/Wound Laboratory of Johns Hopkins University. His current focus is awakening and mobilizing dormant endogenous stem cells to promote wound repair and regeneration.

IRA M. HERMAN, PhD
Professor and Director
Program in Cellular, Molecular and Developmental Biology
Center for Innovations in Wound Healing Research
Tufts University School of Medicine

Ira Herman is tenured professor and director, Center for Innovations in Wound Healing Research, Tufts University School of Medicine. Dr. Herman holds appointments in the departments of developmental, molecular & chemical biology, ophthalmology and biomedical engineering. Professor Herman is founding member and director emeritus, Integrated Studies Program, and is currently director, Cell Molecular and Developmental Biology Program, Sackler School of Graduate Biomedical Sciences, Tufts University School of Medicine, where he has received the Distinguished Faculty Award.

Throughout his professional career, and since the time of his graduate and post-graduate studies at Tulane University, Harvard University and Johns Hopkins University School of Medicine, professor Herman’s research interests have been focused on revealing the mechanisms controlling cellular and tissue responses to injury and tissue regeneration, including the vascular remodeling and angiogenesis of wound healing. These basic studies have given rise to several fundamental insights and a deepened understanding of many physiologic and pathologic processes, including the molecular mechanisms regulating the cellular responses to injury and tissue repair. Furthermore, several of these discoveries have fostered the development of novel technologies for therapeutics and device development, which are described in several issued and pending US and international patents and focus on the promotion of wound healing, scar-less healing, inhibition of ocular or tumor-induced angiogenesis, the etiology of essential hypertension and the abrogation of cancer cell invasion.

During his three-decade tenure at Tufts University, professor Herman has published scores of scholarly reviews and book chapters, and over 80 primary research papers. He serves as editor and scientific reviewer for many scientific journals and is regularly invited as a speaker at scientific meetings, worldwide. Fulfilling his commitment to the scientific community, Professor Herman continues to serve as scientific reviewer and expert consultant for pharma and the biotechnology sectors while having chaired and continuing to participate on grant advisory panels for the National Institutes of Health, Medical Research Council, National Science Foundation, American Heart Association and NASA.

LUISA IREULA-ARISPE, PhD
Professor and Vice-Chair, Department of Molecular, Cell and Developmental Biology – UCLA
Director, Molecular Biology Institute
Chair, Molecular Biology IDP

Luisa Iruela-Arispe is a cell and developmental biologist and professor in the Department of Molecular, Cell and Developmental Biology. Dr. Iruela-Arispe earned her Ph.D. degree from the University of Sao Paulo in Brazil in 1989 and received post-doctoral training at the University of Washington in Seattle. She was appointed Assistant Professor at the Department of Pathology at Harvard Medical School in 1994. In 1998, she joined the faculty of the Department of Molecular, Cell and Developmental Biology at UCLA. Her research centers
in understanding the molecular regulation of endothelial cell commitment and differentiation, patterning of the vasculature and homeostatic vascular function.

CHARLEEN ISE, MD
Regional Medical Director, Healogics Specialty Physicians
Healogics Inc.

Charleen Ise received her BA from University of Pennsylvania, and her MD from Jefferson Medical College. Dr. Ise completed her Residency training in Family Medicine at Bayfront Medical Center in Saint Petersburg, Florida. She then spent the next 14 years as faculty at Bayfront during which time she served as associate and acting residency director. She was also an Assistant Clinical Professor of Family Medicine at University of South Florida. In 2005 she accepted a new challenge and helped open the Wound Care And Hyperbaric Center at Bayfront where she is the Medical Director. She has supervised and helped train over 80 physicians and nurse practitioners in advanced wound care. Dr. Ise is a certified wound care specialist (CWS) and is board certified in Family Medicine and Hyperbaric Medicine. In 2013 she became the Regional Medical Director of Healogics Specialty Physicians, a position where she is able to marry her two great professional interests: teaching and advanced wound healing.

MICHELLE KHINE, PhD
Associate Professor, University of California, Irvine
Department of Biomedical Engineering
UC Irvine

Michelle Khine is currently an Associate Professor of Biomedical Engineering, Chemical Engineering and Materials Science at UC Irvine. She was an Assistant & Founding Professor at UC Merced (’06–’09). Dr. Khine received her BS and MS from UC Berkeley in Mechanical Engineering (’99 and ’01, respectively) and her PhD under Luke P. Lee in Bioengineering (’05) from UC Berkeley and UCSF. She was the Scientific Founder of Fluxion Biosciences, Shrink Nanotechnologies, Novoheart, and TinyKicks. Dr. Khine was the recipient of the TR35 Award and named one of Forbes ‘10 Revolutionaries’ in 2009 and by Fast Company Magazine as one of the ‘100 Most Creative People in Business’ in 2011. She was awarded the NIH New Innovator’s Award, was named a finalist in the World Technology Awards for Materials, and was named by Marie-Claires magazine as ‘Women on Top: Top Scientist’ and is an AIMBE Fellow. Dr. Khine was currently working on starting a novel ‘co-op’ with her students, ‘A Hundred Tiny Hands’ to invent the next generation of inventors.

KRIS KIESWETTER, PhD, MBA
Senior Director, Research & Technology
Acelity, Inc.

Kris Kieswetter currently serves as Senior Director, Research & Technology at Acelity, Inc. The Device Sciences organization she leads provides technical and scientific support to product development teams, develops novel concepts and performs technology assessments. During her 20+ year career, Dr. Kieswetter has been involved in both device and drug product development. Following a post-doctoral fellowship, Dr. Kieswetter joined OsteoBiologics, Inc. to develop biodegradable implants. After 2 years working with topical wound care products at Healthpoint, Ltd., she joined KCI and established the Research organization.

Dr. Kieswetter is a member of the Society for Biomaterials, Orthopaedic Research Society, Tissue Engineering Society, International and the Wound Healing Society and has served on the boards of UT San Antonio Department of Biomedical Engineering, The Health Cell and the Wound Healing Society.

ADAM LANDSMAN, DPM, PhD
Assistant Professor of Surgery, Harvard Medical School
Chief, Division of Podiatric Surgery Cambridge Health Alliance

Adam Landsman received a BS in Chemical Engineering from University of Virginia, MS and PhD in Bioengineering from University of Pennsylvania, and DPM from Temple University. In 1994, Dr. Landsman was appointed Director of Research and Professor of Surgery for School College of Podiatric Medicine, Chicago, IL. In 2006, Dr. Landsman joined Beth Israel Deaconess Medical Center, in Boston, and was appointed as Assistant Professor of Surgery at Harvard Medical School. In 2010, he became Chief of Podiatric Surgery for the Cambridge Health Alliance. He has published 80+ peer-reviewed papers, edited 2 books, published numerous chapters, and completed 40+ clinical trials.

GERALD LAZARUS, MD
Professor, Dermatology and Medicine
Johns Hopkins

Gerald Lazarus is Professor of Dermatology and Medicine, and Founder Johns Hopkins Wound Center. Dr. Lazarus is an internationally known academic physician and wound care expert, now focused upon the quality of information informing therapeutic interventions for patients with chronic ulcers. His wound care career began when he was the Chairman and Callaway Professor of Dermatology at Duke and then...
as Chairman and Hartzell Professor of Dermatology at the University of Pennsylvania. In 2002, he became Director and Founder of The Johns Hopkins Wound Center and served as administrative leader for almost 10 years. Dr. Lazarus then assumed a leadership role in collaboration with the Center for Evidence Based Care at Johns Hopkins that resulted in 3 major policy reviews accepted for posting on the Agency for Health Care Research and Quality, and over 20 recent peer review publications on wound care.

**Howard Levinson, MD, FACS**  
*Director, Plastic Surgery Research  
Associate Professor, Plastic and Reconstructive Surgery, Pathology,  
Division of Surgical Sciences, Pathology, and Surgery  
Duke University Medical Center*

Howard Levinson, MD, FACS is a double board certified General Surgeon and Plastic Surgeon at Duke. Dr. Levinson is the Director of Plastic Surgery Research and founder of the medical device company, Deep Blue Medical Advances. He leads the Innovation Workgroup in the Department of Surgery at Duke, has been an ad hoc member of Department of Defense and NIH study sections, including SBIR/STTR committees, is PI of a Coulter translational grant, and holds several patents. He has consulted for GlaxoSmithKline, Johnson and Johnson, and Allergan, and serves on the Wound Care Advisory board for Cardinal Health.

**Jeffrey A. Niezgoda, MD, FACHM, MAPWCA, CHWS**  
*President & Chief Medical Officer  
WebCME, Inc.  
RxOS Medical, Inc.  
AZH, Inc.  
President, American College of Hyperbaric Medicine*

Jeffrey Niezgoda is the President & Chief Medical Officer of AZH, a company providing clinical hyperbaric and wound care services, as well as the founder of Web CME, an international educational company with a mission to provide wound care and hyperbaric education over the internet. Over the past 10 years, WebCME has trained over five thousand healthcare providers. For 16 years (1998-2013) Dr. Niezgoda held the position of Medical Director of the Center for Comprehensive Wound Care and Hyperbaric Oxygen Therapy at St. Luke’s Medical Center in Milwaukee Wisconsin and served as the President and Chief Medical Officer of Hyperbaric & Wound Care Associates. He is the President of the American College of Hyperbaric Medicine and Vice President of the American Professional Wound Care Association. Dr. Niezgoda holds an M.D. from the Uniformed Services University of the Health Sciences, F. Edward Herbert School of Medicine, Bethesda, Maryland, and is an 1981 graduate of U.S. Air Force Academy.

**Dennis Paul Orgill, MD, PhD**  
*Vice Chair, Surgery  
Medical Director, The Wound Care Center  
Brigham and Women’s Hospital  
Professor of Surgery, Harvard Medical School*

Dennis Orgill is Vice Chairman for Quality Improvement in the Department of Surgery at Brigham and Women’s Hospital and Professor of Surgery at Harvard Medical School. Dr. Orgill is a reconstructive plastic surgeon with a PhD in Medical Engineering from MIT. He is the Director of the Wound Care Center and runs the Tissue Engineering and Wound Healing Laboratory at BWH. His lab focuses on developing better technologies to treat wounds by using artificial skin, micromechanical forces, platelets and stem cells. He is an inventor on several patents and worked on the team that developed the commercially available skin replacement therapy, Integra.

**Lee C. Rogers, DPM**  
*Medical Director  
Amputation Prevention Centers of America*

Lee Rogers is the medical director of the Amputation Prevention Centers of America, a division of RestorixHealth, Inc, which manages 130 specialized centers across the US in 24 states. Dr. Rogers is the past chair of the foot care council for the American Diabetes Association. He received the 2011 Rising Star Award from the American Podiatric Medical Association for outstanding national accomplishments and has been selected by Podiatry Management Magazine as one of the most influential podiatrists in America. Dr. Rogers was selected as Educator of the Year from the California Podiatric Medical Association in 2012 and given the Master’s Award from the American Professional Wound Care Association.

Dr. Rogers’s work has been quoted in the Wall Street Journal, the Washington Post, US News & World Report and he’s been a guest on ABC’s The Doctors Show, featured on PBS’s American Medical Journal and Al Jazeera International’s The Cure.
**Biographies...cont’d**

**Jonathan Rosenblum, DPM**  
*Director, Diabetic Foot Service*  
Shaarei Zedek Medical Center

Jonathan Rosenblum is the Director of the Diabetic Foot Service at Shaarei Zedek Medical Center in Jerusalem, Israel. Dr. Rosenblum is the parliamentary liaison responsible for bringing the Podiatry Law in Israel to fruition. He serves as a consultant to numerous Israeli medical startups in a variety of fields. Dr. Rosenblum has lectured worldwide on multiple topics related to Podiatric Medical and Surgical care.

**Gregory Schultz, PhD**  
*UF Research Foundation Professor*  
Department of Obstetrics and Gynecology  
Institute for Wound Research  
University of Florida

Gregory Schultz is a Professor of Obstetrics and Gynecology and Director of the Institute for Wound Research at the University of Florida. Dr. Schultz completed a PhD in Biochemistry from Oklahoma State University and postdoctoral training in Cell Biology at Yale University. His research focuses on defining the molecular regulation of normal wound healing and identifying the molecular imbalances that lead to fibrosis or to chronic wounds, with an emphasis on bacterial biofilms and rapid, point-of-care detectors for biomarkers. Dr. Schultz has published over 300 research papers, chapters and review articles, which have been cited more than 7,000 times. He has served as PI or Co-investigator on grants totaling over $35 million. He is an inventor on 22 patents, a co-founder of two biotech companies in the area of wound healing, and a consultant for multiple pharmaceutical and wound care device companies. Dr. Schulz served as a member of the National Pressure Ulcer Advisory Panel and as President of the Wound Healing Society from 1999-2001.

**Robert J Snyder, DPM, MSc, CWS**  
*Professor and Director of Clinical Research*  
*Director, Fellowship Program in Wound Healing and Clinical Research, Barry University SPM*  
*Immediate Past President, Association for the Advancement of Wound Care*  
*Past President, American Board of Wound Management*  
*Honorary Tutor, Department of Dermatology and Wound Healing, Cardiff University School of Medicine, Cardiff, Wales, UK*  
*Member, Academy of Physicians in Clinical Research*

Robert Snyder is Professor and Director of Clinical Research and Fellowship Director in wound care and research at Barry University SPM. Dr. Snyder has created and implemented the first post residency Wound Management and Research Fellowship for podiatric medical schools. He is certified in foot and ankle surgery by the American Board of Podiatric Surgery and is also a board certified wound specialist. Dr. Snyder is immediate past-president of the Association for the Advancement of Wound Care and past-president of the American Board of Wound Management, the certifying body for Wound Care Specialists. In addition to his doctorate, he holds an MSc in Wound Healing and Tissue Science from Cardiff University. His expertise at Cardiff, Wales, was further acknowledged as he was selected as an Internal Marker for MSc dissertations with an Honorary Title. To constantly expand his knowledge and stay current in all aspects of healthcare, he has started an MBA in Health Management. Dr. Snyder is a key opinion leader and sought after speaker, lecturing extensively throughout the United States and abroad. He was chosen to develop and teach a wound care course for physicians internationally. Dr. Snyder has published several book chapters and over 125 papers in peer reviewed and trade journals on wound care. He serves on the editorial advisory boards of Ostomy Wound Management, Wounds and Podiatry Management and has recently been appointed as a periodic reviewer for the Lancet and NEJM. He has been a Principal Investigator on more than 40 randomized controlled trials for innovative wound healing modalities and products.

**Bauer Sumpio, MD, PhD**  
*Professor of Surgery and Radiology*  
Yale School of Medicine

Bauer Sumpio received his medical degree in 1980 and his Ph.D. in Physiology in 1981 from Cornell University Medical College in New York. From 1981 to 1986, Dr. Sumpio was involved in post-graduate training in General Surgery at Yale University and from 1986 to 1987 he underwent fellowship training in Vascular Surgery at the University of North Carolina. Dr. Sumpio then returned to Yale University School of Medicine, Section of Vascular Surgery, as a faculty member and as Chief of Vascular Surgery at the VA Connecticut. In 1994, he was promoted to Full-Professor with tenure and was named as Vice-chairman of the Department of Surgery and the Chief of Vascular Surgery at Yale. His professional society memberships include the American Surgical Association, International College of Angiology, Society for Vascular Surgery, American College of Cardiology, Society for Vascular Medicine and Biology, American College of Surgeons, Society for University Surgeons, European Society for Vascular...
Dr. Bauer E. Sumpio is currently a tenured Professor of Surgery and Radiology at Yale University School of Medicine, the Emeritus Chief of Vascular Surgery at the Yale-New Haven Hospital and Emeritus Program Director of Vascular Surgery Fellowship Program.

TAMAR TENNENBAUM, MD, PhD

CEO & Founder
Arava Bio-Tech, Inc.

Tamar Tennenbaum is the founder and CEO of Arava Bio-Tech, Ltd. She is an established biotech entrepreneur, a physician and a scientist specializing in discovery and development of innovative pharmaceuticals addressing major medical needs in the fields of wound healing, Oncology and Dermatology. Dr. Tennenbaum holds an MD from the Hebrew University Hadassah Medical School, Jerusalem in Israel, and a PhD in cell biology and pharmacology from the Pharmacology Department at the Hebrew University, Jerusalem in Israel. Following a post-doctoral position as a visiting associate at NCI, NIH, Dr. Tennenbaum joined Bar-Ilan University where she established the Molecular Dermatology unit. In 2002, as a spin-off of her academic career, Dr. Tennenbaum established HealOr (2002-2011), a company specializing in development of novel therapeutics addressing the pathologies associated with wound healing and dermatology disorders. As a founder, inventor, and CEO, Dr. Tennenbaum played a key role in raising over $50 million of venture and partner financing leading the commercial strategy, portfolio development and the intellectual property strategies of the company with more than 140 patents submitted and more than 35 patents granted. Dr. Tennenbaum led the successful translation of advanced leading drug candidates from scientific research at preclinical stage to Phase 3 clinical trials in various wound healing indications. In addition to her startup companies, she also serves as an advisor to leading pharmaceutical companies in the areas of wound healing and dermatology. She is an acknowledged specialist in epithelial physiology and pathology, gene therapy and PKC signaling. Dr. Tennenbaum is the laureate of prestigious awards and grants and an author of over 50 scientific publications and book chapters in peer review journals.

MIN ZHAO, MD, PhD

Professor, Ophthalmology and Dermatology Research Institute for Regenerative Cures
University of California at Davis, School of Medicine

Min Zhao is a professor with Department of Dermatology and Department of Ophthalmology, University of California at Davis. Dr. Zhao got his medical and postdoctoral training in the Third Military Medical University, China and the University College London, and the University of Aberdeen in the United Kingdom. He was a personal chair and professor in regenerative medicine at the University of Aberdeen since 2004. He joined UC Davis in 2007. His research focuses on electrical signaling in wound healing and regeneration, and how the electrical signals can be exploited to facilitate wound healing.
**Abstracts**

**Adam Landsman, DPM, PhD**  
*Assistant Professor of Surgery*, Harvard Medical School  
Chief, Division of Podiatric Surgery Cambridge Health Alliance

**Poster Presentation No. 1: Surfactant-Based Hydrogel for the Management of Slough, Exudate, and Necrotic Debris in Chronic Wounds**

Adam Landsman, DPM, PhD¹, Harry Schneider, DPM¹,  
Debashish Chakravarty, PhD²

¹ Cambridge Health Alliance, Harvard Medical School, Boston, MA  
² Medline Industries, Inc., Mundelein, IL

A novel surfactant-based hydrogel was used to reduce slough, exudates, and necrotic debris in a variety of chronic wounds including diabetic foot ulcers, venous leg ulcers, and decubitus ulcers. This material is composed of micelles suspended in a hydrogel. The micelles encapsulate the debris to make it easier to rinse away. In our clinical experience, we found the surfactant-based burn and wound dressing (PharoGel, Medline, Mundelein, IL) to be an effective tool for reducing slough and promoting autolytic debridement of necrotic tissue. It is an excellent alternative to enzymatic debridement. The treatment had a soothing effect, and no apparent adverse events have been observed.

**Adam Landsman, DPM, PhD and Harry Schneider, DPM**  
*Assistant Professor of Surgery*, Harvard Medical School  
Chief, Division of Podiatric Surgery Cambridge Health Alliance

**Poster Presentation No. 2: Esterified Hyaluronic Acid Matrix Promotes Formation of Granulation Tissue and Facilitates Wound Closure**

Adam Landsman, DPM, PhD and Harry Schneider, DPM  
Cambridge Health Alliance, Harvard Medical School, Boston, MA

Hyaluronic acid (HA) is a critical component of the extracellular matrix of skin, but is frequently overlooked when treating difficult wounds. The authors report on their experience with a case series in which six diabetic foot ulcers and three venous leg ulcers were treated with an esterified hyaluronic acid matrix. Esterified HA is more persistent than other forms of HA in the wound bed, and in our experience, was more effective for promoting granulation tissue formation and achieving wound closure. Over a 12-week period, an increase from 46% to 91% granulation tissue across the wound bed was observed, along with 44.4% of the wounds closing, and reduction in average wound size from 7.93 to 0.78 cm².

**Amaan Mazhar, PhD**  
*Director of Research and Development*, Modulated Imaging Inc.

**Poster Presentation: An Optical Imaging Method to Compare Perfusion in Diabetic and Non-diabetic Feet**

Amaan Mazhar¹, PhD; Pierre Khoury¹, MS; Darryl Werner², MD; David J. Cuccia¹, PhD

¹ Modulated Imaging Inc., Irvine, CA  
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Diabetic foot ulcers (DFU) and their complications cause significant morbidity for patients and create a huge financial burden for our health care system. In the clinical setting, various measurements of perfusion in the foot have been used to guide treatment and to predict risk of ulceration. Spatial Frequency Domain Imaging (SFDI) is a non-contact imaging technology that has been proven to quantitatively measure deep-tissue (5 mm) perfusion over large fields of view (15 cm x 20 cm). Measured parameters such as tissue oxygen saturation (oxy- and deoxy- hemoglobin), total hemoglobin, and scattering may yield useful clinical information.

In this study, we describe preliminary results (n=40) using a commercial SFDI research system to evaluate multiple characteristics of foot perfusion in four types of feet: 1) non-diabetics with no ulcers (control); 2) diabetics with no existing ulcers (medium risk); 3) diabetics with ulcer on contralateral (high risk); and 4) diabetics with DFU.

Preliminary results demonstrate the ability of SFDI imaging to capture reliable measurements of perfusion in the both plantar and dorsal aspects of feet in a clinical setting. Furthermore, our SFDI derived data further demonstrated: 1) Tissue oxygen saturation remained similar in all groups. 2) The total hemoglobin was significantly increased (p<0.05) in high-risk group compared to both control and medium risk feet. The total hemoglobin in medium risk foot was also higher than control group, but to a lesser extent.

We hypothesize that the increased hemoglobin across risk groups represents progressive circulatory congestion occurring in the diabetic foot as a result of autonomic neuropathy and subsequent deterioration of vasomotor regulation in the foot. These initial results motivate multi-center trials to develop an Ulcer Risk Index based on SFDI output parameters to determine how this technology could be used clinically to direct treatment or to predict risk of DFU.

**Brian Tse, PhD**  
*Health Scientist*, HHS / OS / ASPR / BARDA / CBRN

**Poster Presentation: BARDA: Development of Commercially-Sustainable Medical Countermeasures for Mass Casualty Incidents Involving Severe Thermal Burns**

Brian N. Tse, Ph.D.; Jeffrey C. Geesin, Ph.D.; Julio F. Barrera-Oro, Ph.D.; Narayan Iyer, Ph.D.

The US Government recognizes the detonation of an improvised nuclear device as a material threat to national security. One of the anticipated medical consequences of a nuclear detonation is a large number of severe thermal burn casualties. Recognizing the nation’s limited burn care infrastructure and the resource-intensive nature of burn care, we have identified critical bottlenecks to providing timely treatment for these patients. Consequently, our portfolio aims to develop novel medical products, termed medical countermeasures (MCMs), that can help ease these treatment bottlenecks as described below.

The Biomedical Advanced Research and Development Authority (BARDA) is a component of the U.S. Dept. of Health and Human Services that focuses on the advanced development, manufacturing, and acquisition of MCMs for use in mass casualty scenarios. BARDA’s development portfolio for thermal burns and cutaneous injury includes allogeneic cell-based skin substitutes, enzymatic debridement gels, imaging devices for surgical excision, autologous cell-based therapies, topical gels, and anti-infective bandages.

To ensure the availability of these products in a cost-sustainable manner, BARDA prioritizes the development of MCMs that have routine medical uses, making them amenable to vendor-managed inventories. The products can be rotated through their inventories based on market demand, limiting the costs associated with product expiration. In the event of an emergency, the full contents of the inventory can be made available for immediate use.

Given the low incidence of large, severe thermal burns, the commercial market may not be sufficient to support the inventories needed for emergency preparedness. To circumvent this limitation, BARDA’s strategy is to seek MCMs that also have the potential for indications in other wound care markets, including (but not limited
WOUND HEALING: SCIENCE & INDUSTRY
Advancing Science & Technology in Wound Healing

**Abstract**

Pyoderma gangrenosum (PG) is an uncommon chronic and progressive skin disorder from mitochondria for bacterial killing. In the case of chronic wounds the supply of free radicals overwhelms the normal antioxidant molecules and enzymes at the wound site. These reactive species, which differ widely in their reactivity and residence times at the wound site, delay wound closure by disrupting the formation of a collagen matrix and inhibiting the proliferation and migration of epithelial cells from the wound margin. An innovative hydrogel formulation allows topical delivery of a mixture of antioxidants that are designed to promote wound healing by ameliorating the deleterious effects of inflammation and oxidative stress caused by free radical burden at the wound site. This wound dressing simultaneously ensures moisture balance and antioxidant effect. Antioxidant loaded hydrogels will be useful in the treatment of chronic and recalcitrant wounds.

**Bryan Doner, DO, CHWS, FAPWCA**
President, D&P Medical Group

**Poster Presentation:** A Prospective Case Series Evaluating the Effectiveness of a Topical Compound Pharmaceutical Preparation for Use in Wound Care

Thomas Serena, MD FACS MAPWCA FACHM; Bryan Doner DO; Keyur Patel DO; Craig Woodruff, PharmD; Laura Serena LPN; Heather Connell CCRP

One of the challenges in wound dressing selection is that one particular dressing does not fit all aspects of the patients/wounds needs. Specifically, pain reduction, bacterial bioburden control, drainage control, peri-wound protection, biofilm/fibrin control, and promotion of granulation and epithelialization are all required. The use of topical compounded products in wound care is a relatively novel approach with little research available on the use of these medications together with their subsequent base formulations. This prospective case series assessed the effectiveness of a topical compounded ointment in the promotion of wound healing. Methods: Healing progression was followed until wound closure after initiation of a topical compounded product containing varying formulations of the following medications: Phenytoin 4%, Misoprostol 0.0024%, Lidocaine 2%, Gentamicin 0.1%, Mupirocin 2%, Ketamine 4%, Hyaluronic Acid 1%, Collagenase 350 u/gm , Bupivacaine 5%, Gabapentin 6%, Flurbiprofen 15%, in a Spira Wash Gel BaseTM. The wound etiology varied, with topical application 1 to 2 times a day with patient’s self-administering the product. Length, width, and depth measurements along with photographs and physician assessment of the wound were recorded at the patient's weekly visits. The patients were followed up to wound closure. Results: The topical compounded preparation met all of the needs of the patient and the wound bed environment to optimize healing. All patients went on to complete wound closure while using the topical compounded ointment as the primary wound dressing. With a range of wound closure from a little as 9 days to 17 weeks depending on wound type. Patients reported notable pain reduction after the first use with a drop from 10/10 to 3/10 pain rating. Bioburden and fibrin tissue were controlled evidenced by visual observation along with reduction in periwound maceration. Conclusions: The use of topical compounded formulations in wound care has tremendous potential. These products can be designed to meet individual patient needs while at the same time addressing all aspects of wound healing in one topical preparation. Further research is needed in this area to better understand the potential uses of topical compounded products in wound care.

**Leticia Vallejo**
Professor, Metropolitan University of Puerto Rico

**Poster Presentation:** The Effectiveness of the Combination of the Negative Pressure Therapies with Other Treatment Modalities in the Management of Chronic Wounds

This retrospective-descriptive study aims to determine whether there are statistically significant differences between the combined application of negative pressure therapy (NPT) with other treatment modalities for the management of chronic wounds and ulcers; versus the single application of the NPT in the phase of healing of a wound or chronic ulcer. Another objective is that through the use and validation of “Vallejo’s Tool”, collect data on the progress of healing of ulcers of patients. This study provides evidence of the effectiveness of the NPT, in combination with other treatment therapies. It decreases the healing time of chronic wounds/ulcers, preventing amputation. The sample consists of 20 people assigned by the administration of an outpatient facility specialized in wounds and ulcer treatment in San Juan, Puerto Rico. The usefulness of “Vallejo’s Tool” I and II, as an instrument for collecting clinical data to assess the progress of patients in a treatment modality for wound care is evident. The instrument allows documenting and summarizing, the observations of the combination of treatments with NPT and it permits to gather the treatment time, percentage of progress of three-dimensional aspects (the area and depth) of wounds/ulcers. The different treatments combinations positively influence the progress of patients, when taken into account the physical, bio-chemical wound or ulcer to choose a treatment through the healing phase. These results show that there are significant differences in wound healing when NPT is combined with other modalities of treatment versus the single application of therapy in the phase of healing.

**Robert J Snyder, DPM, MSc, CWs**
Professor and Director of Clinical Research
Director, Fellowship Program in Wound Healing and Clinical Research, Barry University SPM

**Poster Presentation:** Dehydrated Human Amnion/Chorion Membrane as Adjunctive Therapy in the Treatment of Pyoderma Gangrenosum: A Case Report

Robert J. Snyder, DPM, MSc, CWs; Joey Ead, MS; Brad Glick, DO, MPH; Cherison Cuffy, DPM, CWs

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Pyoderma gangrenosum (PG) is an uncommon chronic and progressive skin disorder of unknown etiology that can lead to severe tissue necrosis, pathergy, horrendous pain, and disfigurement. PG is often a diagnosis of exclusion, as there are no
specific laboratory or histopathologic findings to confirm the diagnosis. Long-term immunosuppression is the mainstay of systemic treatment for PG, although increasing evidence supports the use of biologic therapies, such as tumor necrosis factor-α inhibitors, for refractory cases of PG. Localized care of the painful wound often represents a clinical challenge. We present a case of an elderly female with refractory, painful PG. For three months prior to utilization of adjunctive advanced topical therapeutics, her condition was managed by a multidisciplinary team with immunosuppressive therapy, local wound care, and compression. Dehydrated human amnion/chorion membrane (dHACM) allograft was adjunctively incorporated into the treatment plan to help modulate inflammation and improve wound healing. After the first dHACM placement the patient stated her pain, recorded as 10/10 was substantially reduced within hours (5/10) and, within 5 days was subsequently eradicated (0/10). Additionally, within one week of dHACM placement her wound reduced in size by over 25%, and within two months the wound had reduced by 56%. The wound was fully healed by eight months. These results suggest that using dHACM as an adjunct to immunosuppressive therapy may serve to mitigate pain and improve wound healing in patients with this challenging condition. Reduction of pain should be evaluated in studies of dHACM to determine if these results are reproducible in a larger cohort of patients and therefore generalizable to other wound types and conditions.

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Notes