

WOUND HEALING SOCIETY PROGRAM

DAY 1: WEDNESDAY, APRIL 25, 2018

WHS WELCOME AND INTRODUCTION

8:00 A.M. - 8:15 A.M. ROOM 207

WHS SESSION A: WOUND HEALING FOUNDATION THOMAS K. HUNT LECTURE (non-accredited)

8:15 AM - 9:15AM ROOM 207

Moderators: Laura Parnell, BS, MS, CWS

Speaker: Elaine Fuchs, PhD

In the spirit of the pioneering work of its namesake, Elaine Fuchs, PhD was chosen by the Wound Healing Foundation as the 2018 Thomas K. Hunt Honorary Lecturer. Dr Fuchs' major contributions in skin stem cell research are likely to advance the field of wound healing. This one-hour session will provide an overview of skin stem cell reservoirs, tissue generation and repair by stem cells and the impact of communication and environment in normal and dysfunctional situations. Dr Fuchs' will discuss how her research might impact the field of wound healing, and conclude with a vision for future research.

BREAK

9:15 A.M. - 9:30 A.M.

WHS SESSION B: ADJUNCTS TO WOUND HEALING

9:30 A.M. - 11:00 A.M. ROOM 207

Moderators: Adrian Barbul, MD

Speaker: Ally-Khan Somani, MD; David J. Margolis, MD; Maximillian Kueckelhouse, MD

Innumerable intrinsic and extrinsic factors may delay, impair, accelerate, or enhance wound healing. In this session, the latest science elucidating the role of oxidants and anti-oxidants, nutrition, dressings, and bioengineered constructs in wound healing and ways they can be manipulated will be discussed.

BREAK

11:00 A.M. – 11:15 A.M.

WHS Session C: INFLAMMATION, FRIEND OR FOE?

11:15 A.M. – 12:45 P.M. ROOM 207

Moderators: Robert F. Diegelmann, PhD

Speakers: Robert F. Diegelmann, PhD; MS; Boris Hinz, BSc, PhD

Tissue homeostasis, disease, and response to injury are governed by complex interactions between immune cells and other non-immune cells involved in wound healing. These interactions are shaped by micro-environmental factors such as the extracellular matrix or the presence of pathogens. This session will discuss new research on how immune cell behavior modulates tissue repair processes and response to infection, with applications in the development of novel therapies for inflammatory skin disease and chronic wound healing.

LUNCH ON OWN

12:45 P.M. – 2:00 P.M

WHS Session D: ETRS/ WHS JOINT SESSION- WOUND GENOMICS AND PROTEOMICS

2:00 P.M. – 3:30 P.M. ROOM 207

Moderators: Harriet W. Hopf, MD; Phil Stephens, MD

Speaker: Ulrich auf dem Keller, MD; Sashwati Roy, PhD; Jeffrey M. Davidson, MD; PhD; Ardeshir Bayat, AA/AS

The roles of cell recruitment, gene expression, and protein synthesis in successful healing cannot be overemphasized. Using the latest in genomic and proteomic technology, researchers hope to learn about the activation of genes, the proteins that are actually transcribed, and their role in leading to successful repair. Further, the importance of banking tissue or patient samples, extracting DNA and analyzing and sequencing them can lead to therapeutic intervention. In this session, the complex roles of proteins in wound healing will be addressed through discussion of the genomics and proteomics of acute and chronic wounds.

BREAK

3:30 P.M. – 3:45 P.M.

WHS Session E: SCAFFOLDS IN WOUND HEALING

3:45 P.M. – 5:15 P.M. ROOM 207

Moderators: Howard Levinson, MD

Speaker: Howard Levinson, MD; Craig Duvall, PhD; Stephen F. Badylak, DVM, PhD, MD

Scaffolds represent a bio-mechanical approach to tissue repair. Provision of scaffolds, which are biologically degradable, provides an initial road map for cells and matrix to organize around the site of injury; they are a way of increasing and regulating the repair process by providing a matrix to be filled with cells and wound products. The biomechanics of the composition of the scaffolds can also play a role in the repair process by acting as signals to cells. Different approaches to designing and applying scaffolds will be highlighted.

BREAK

5:15 P.M. –5:30 P.M.

SOCIAL EVENT FOR WHS MEMBERS

6:30 P.M.–9:30 P.M. NASCAR HALL OF FAME

Registered WHS members are invited to attend the NASCAR Hall of Fame at 6:30pm for a memorable night of food and activities. This is a WHS Members Only event, but limited guest tickets may be available for purchase. **Tickets are required for entry. ** Please pick up your reserved tickets at the WHS membership booth near the WHS General Session Room.

DAY 2: THURSDAY, APRIL 26, 2018

WHS COMMITTEE MEETINGS

7:30 A.M. - 9:00 A.M. 206A, 209A, 209B

BREAK

9:00 A.M. – 9:15 A.M.

SAWC SPRING OPENING CEREMONY

9:15 A.M. – 9:30 A.M. CROWN BALLROOM

KEYNOTE ADDRESS: FIRED UP OR BURNOUT: BUILDING TEAMS THAT THRIVE

9:30 A.M. - 10:30 A.M. CROWN BALLROOM

Speaker: Dan Diamond, MD, FAAFP

BREAK

10:30 A.M. – 10:45 A.M

WHS Session F: EDUCATING THE NEXT GENERATION OF WOUND CARE LEADERS: GLOBAL NETWORKING

10:45 A.M. – 11:45 A.M. ROOM 207BCD

Moderators: Susan W. Volk, VMD, PhD, Dipl ACVS; Lisa Gould, MD

Speaker: Pamela Scarborough, PT, DPT, MS, CDE, CWS, CEEAA; William Ennis, DO, MBA, FACOS; Elizabeth Foy White-Chu, MD

As the prevalence and incidence of complex wounds continues to rise, the need for skilled clinicians is increasing. Wound care is by nature an inter-professional specialty, leading to challenges in developing a standardized curriculum. Meanwhile, increasing competition for limited healthcare resources means that securing funding for wound management education and research is becoming more and more difficult. Increasing efficiency in translation of basic research findings into clinical solutions is paramount to addressing this discrepancy. Critical to this mission is a strategic approach for educating the next generation of wound care leaders and the development of global networks for basic and clinical wound care research.

BREAK

11:45 A.M. – 12:00 P.M.

INDUSTRY-SUPPORTED LUNCH SYMPOSIA

12:00 P.M. - 1:30 P.M.

BREAK

1:30 P.M. – 1:45 P.M.

WHS Session G: YOUNG INVESTIGATORS SYMPOSIUM

1:45 P.M. - 4:00 P.M. ROOM 207BCD

Moderators: Phil Stephens, MD; Sashwati Roy, PhD; Elof Eriksson, MD

In this session, young investigators involved in cutting-edge research will compete for the WHS Young Investigator Award. The winner will present his/her work at the ETRS meeting. Oral presentations will feature the top eight abstracts submitted to the WHS by young investigators as well as the winner of the ETRS Young Investigator Award.

1:45 G.01 WOUND FLUID AS A BIOMARKER: A METABOLOMIC APPROACH

Amitava Das, Subendu Sarkar, Joshua Johnson, Carly Polcyn, Scott Chaffee, Piya Das Ghatak, Suman Santra, Gayle M. Gordillo, Sashwati Roy, Chandan K. Sen

Comprehensive Wound Center, Center for Regenerative Medicine and Cell Based Therapies, The Ohio State University Wexner Medical Center, Columbus, OH, USA

2:00 G.02 MECHANOSENSITIVE LYMPHOCYTES POTENTIATE WOUND REPAIR BY REGULATING INFLAMMATION AND EXTRACELLULAR MATRIX

Xinyi Wang¹, Emily Steen¹, Alexander Blum¹, Hui Li¹, Natalie Templeman¹, Swathi Balaji¹, Paul Bollyky², Sundeep Keswani¹

¹BCM, Houston, TX, USA, ²Stanford University, Stanford, CA, USA

2:15 G.03 CAVEOLIN 1 INHIBITS KERATINOCYTE MIGRATION AND WOUND CLOSURE BY ORCHESTRATING CYTOSKELETAL REORGANIZATION

Ivan Jozic¹, Andrew P. Sawaya¹, George D. Glinos¹, Lulu L. Wong¹, Tongyu C. Wikramanayake¹, Irena Pastar¹, Robert S. Kisner¹, Harold Brem², Marjana Tomic-Canic¹

¹University of Miami Miller School of Medicine, Miami, FL, USA, ²Winthrop Hospital/Stony Brook University, Stony Brook, NY, USA

2:30 G.04 ETRS YOUNG INVESTIGATOR AWARD WINNER

THERMOSENSITIVE BIOMIMETIC POLYISOCYANOPEPTIDE HYDROGELS MAY FACILITATE WOUND REPAIR

Roel Op 't Veld, Hans Von Den Hoff, Onno Van Den Boomen, Ditte Lundvig, Ewald Bronkhorst, Paul Kouwer, John Jansen, Frank Wagener, Alan Rowan
Radboud University Medical Centre, Gelderland, Netherlands

2:45 G.05 A NOVEL SEQUENTIAL MULTI-TIERED IN-VIVO APPROACH FOR QUANTITATIVE EVALUATION OF TOPICALS FOR TREATMENT OF HUMAN SKIN SCARRING

Rubinder Basson¹, Martin Isabelle², David Reece², Philip Foden³, Mohamed Baguneid³, Ardeshir Bayat¹
¹*University of Manchester, Manchester, United Kingdom*, ²*Renishaw, Gloucestershire, United Kingdom*, ³*Manchester University NHS Foundation Trust, Manchester, United Kingdom*

3:00 G.06 MAST CELL ACTIVITY DURING SCAR MATURATION: MULTIPLE SEQUENTIAL TIME POINT ANALYSIS IN-VIVO SHOW ITS UNIQUE LOCALISATION AND ROLE IN SKIN HEALING

Sara Ud-Din¹, Mohamed Baguneid², Douglas McGeorge³, Martin Barron¹, Silvia Bulfone-Paus¹, Ardeshir Bayat¹
¹*University of Manchester, Manchester, United Kingdom*, ²*Manchester University NHS Foundation Trust, Manchester, United Kingdom*, ³*Nuffield Health Chester Hospital, Chester, United Kingdom*

3:15 G.07 SINGLE CELL RNA-SEQ ANALYSES OF HEALTHY SKIN AND DIABETIC ULCERS REVEALS FUNDAMENTALLY DIFFERENT CELL TYPE-SPECIFIC TRANSCRIPTIONAL PROFILES

Georgios Theocharidis, Swati Bhasin, Konstantinos Kounas, Thanh Dinh, Barry Rosenblum, Manoj Bhasin, Aristidis Veves
Beth Israel Deaconess Medical Center, Harvard Medical School, Boston, MA, USA

3:30 G.08 PRRX1 LABELS THE FIBROGENIC FIBROBLAST IN THE VENTRAL DERMIS

Michael Hu, Tripp Leavitt, Julia Garcia, Ryan Ransom, Ulrike Litzenburger, Graham Walmsley, Clement Marshall, Alessandra Moore, Shamik Mascharak, Charles Chan, Derrick Wan, Peter Lorenz, Howard Chang, Michael Longaker
Stanford University, Stanford, CA, USA

BREAK

4:00 P.M. – 4:15 P.M.

WHS SESSION H: CONCURRENT ORAL ABSTRACTS I (non-accredited)

4:15 P.M. - 5:15 P.M.

Oral abstract presentations will feature the highest scoring abstracts submitted to the WHS.

Acute Wounds (H1) ROOM 207BCD

Moderators: Boris Hinz, MD; Marielle Walraven, PhD

4:15 H1.01 INHERENT FEATURES IN HUMAN ORAL EPITHELIA DETERMINE HEIGHTENED WOUND HEALING

Ramiro Iglesias-Bartolome¹, Akihiko Uchiyama¹, Rose Graf¹, Alfredo A. Molinolo², Loreto Abusleme³, Stephen R. Brooks⁴, Juan Luis Callejas-Valera², Dean Edwards², Colleen Doci², Marie-Liesse Asselin-Labat⁵, Mark Onaitis⁵, Niki Moutsopoulos³, J. Silvio Gutkind², Maria I. Morasso¹
¹*Laboratory of Skin Biology, NIAMS, NIH, Bethesda, MD, USA* ²*Oral and Pharyngeal Cancer Branch, NIDCR, NIH, Bethesda, MD, USA* ³*Oral Immunity and Inflammation Unit, NIDCR, NIH, Bethesda, MD, USA* ⁴*Biodata Mining and Discovery Section, NIAMS, NIH., Bethesda, MD, USA* ⁵*Moore's Cancer Center, UCSD, La Jolla, CA, USA*

4:25 H1.02 DELAYED WOUND HEALING IN USP15 KNOCKOUT MICE

Yixuan Zhao, Guo-You Zhang, Qing-Feng Li

Department of Plastic and Reconstructive Surgery, Shanghai Ninth People's Hospital, Shanghai Jiaotong University, School of Medicine, Shanghai, China

- 4:35 **H1.03 SCAR RE-PIGMENTATION: MELANOCYTE REPOPULATION IN TEMPORAL HUMAN SKIN SCARRING AND ITS ONGOING INTERACTION WITH INFLAMMATION AND ANGIOGENESIS**
Sara Ud-Din¹, Philip Foden², Mohsin Mazhari², Samer Al-Habba², Mohamed Baguneid², Ardeshir Bayat¹
¹University of Manchester, Manchester, United Kingdom, ²Manchester University NHS Foundation Trust, Manchester, United Kingdom
- 4:45 **H1.04 USE OF NICOTINE REPLACEMENT THERAPY IN ACTIVE SMOKERS IS ASSOCIATED WITH INCREASED WOUND COMPLICATION RATES IN BREAST SURGERY**
Zhenzhen Xu, Rance Fujiwara, Lisa Fucito, Steven Bernstein, Henry C. Hsia
Yale University School of Medicine, New Haven, CT, USA
- 4:55 **H1.05 KERATINOCYTE-SECRETED HSP90A-CONTAINING EXOSOMES ARE A DRIVING FORCE OF WOUND CLOSURE**
Wei Li
University of Southern California, Los Angeles, CA, USA
- 5:05 **H1.06 CARDIAC PROGENITOR CELL RECRUITMENT MODULATES REGULATION OF EXTRACELLULAR MATRIX DEPOSITION FOLLOWING MYOCARDIAL INFARCTION**
Maggie M. Hodges, Carlos Zgheib, Junwang Xu, Junyi Hu, Sarah A. Hilton, Lindel C. Dewberry, Kenneth W. Liechty
The Laboratory for Fetal and Regenerative Biology, Department of Surgery, University of Colorado School of Medicine and Anschutz Medical Campus, Aurora, CO, USA

Infection and Biofilms (H2) ROOM 207A

Moderators: Swathi Balaji, PhD; Lauren Moffatt, PhD

- 4:15 **H2.01 PF PHAGE IN CHRONIC PSEUDOMONAS AERUGINOSA WOUND INFECTIONS**
Michelle S. Bach, Jolien Sweere, Elizabeth B. Burgener, Paul L. Bollyky, Gina A. Suh
Stanford University, Stanford, CA, USA
- 4:25 **H2.02 STAPHYLOCOCCUS AUREUS BIOFILM INFECTION COMPROMISES WOUND HEALING BY CAUSING DEFICIENCIES IN GRANULATION TISSUE COLLAGEN**
Suman Santra¹, Sashwati Roy¹, Sriteja Dixith¹, Amitava Das¹, Subhadip Ghatak¹, Piya Das Ghatak¹, Savita Khanna¹, Shomita Mathew-Steiner¹, Valerie K. Bergdall², Daniel J. Wozniak³, Chandan K. Sen¹
¹Comprehensive Wound Center, The Ohio State University, Columbus, OH, USA, ²Department of Veterinary Preventive Medicine, The Ohio State University, Columbus, OH, USA, ³Department of Microbiology, The Ohio State University, Columbus, OH, USA
- 4:35 **H2.03 ELECTRICAL STIMULATION SIGNIFICANTLY IMPACTS BIOFILM VIABILITY, METABOLISM, BIOMASS AND VOLATILE ORGANIC COMPOUND PROFILES**
Mohammed Ashrafi¹, Lilyann Novak-Frazer¹, Mohamed Baguneid², Teresa Alonso-Rasgado¹, Riina Rautemaa-Richardson¹, Ardeshir Bayat¹
¹The University of Manchester, Manchester, United Kingdom, ²Manchester University NHS Foundation Trust, Manchester, United Kingdom
- 4:45 **H2.04 POLYMICROBIAL BIOFILM INFECTION DYSREGULATES CERAMIDE METABOLISM COMPROMISING FUNCTIONAL CUTANEOUS WOUND CLOSURE OF THE SKIN**
Nandini Ghosh¹, Mithun Sinha¹, Dayanjan S. Wijesinghe², Shomita Mathew-Steiner¹, Savita Khanna¹, Daniel J. Wozniak³, Gayle M. Gordillo¹, Sashwati Roy¹, Chandan K. Sen¹
¹Comprehensive Wound Center, Center for Regenerative Medicine and Cell Based Therapies, Department of Surgery, The Ohio State University, Columbus, OH, USA, ²School of Pharmacy, Virginia Commonwealth University, Richmond, VA, USA, ³Dept of Microbiology, The Ohio State University, Columbus, OH, USA

- 4:55 **H2.05 VIABLE CRYOPRESERVED UMBILICAL TISSUE (VCUT) INHIBITS BACTERIAL GROWTH IN A SUBCUTANEOUS RAT INFECTION MODEL**
 Sandeep Dhall¹, Turhan Coksaygan², Tyler M. Hoffman¹, Anne Lerch¹, Jin-Qiang Kuang¹, Malathi Sathyamoorthy¹, Alla Danikovitch¹
¹ Osiris Therapeutics Inc., Columbia, MD, USA, ²University of Maryland, Baltimore, Baltimore, MD, USA
- 5:05 **H2.06 VALIDATION OF BIOFILM FORMATION ON HUMAN WOUND MODELS AND CONFIRMATION OF THEIR USABILITY IN SKIN-RELEVANT BIOFILM STUDIES**
 Mohammed Ashrafi¹, Lilyann Novak-Frazer¹, Mohamed Baguneid², Teresa Alonso-Rasgado¹, Guoqing Xia¹, Riina Rautemaa-Richardson¹, Ardeshir Bayat¹
¹The University of Manchester, Manchester, United Kingdom, ²Manchester University NHS Foundation Trust, Manchester, United Kingdom

Bioengineering (H3) ROOM 203A

Moderators: Timothy W. King, MD, PhD; Mithun Sinha, PhD

- 4:15 **H3.01 PHOTOACTIVE TYPE I (ATELO)COLLAGEN AS BUILDING BLOCK OF ADVANCED WOUND DRESSINGS**
 Giuseppe Tronci
 University of Leeds, Leeds, United Kingdom
- 4:25 **H3.02 INCUBATION OF PORCINE URINARY BLADDER MATRIX OF ENDOTHELIAL CELLS AND KERATINOCYTES FROM DIABETIC PATIENTS RESTORES A NON-DIABETIC PHENOTYPE**
 John Paige¹, David Lightell, Jr.², Jace Landry¹, T. Cooper Woods²
¹LSU Health New Orleans School of Medicine, New Orleans, LA, USA, ²Tulane University School of Medicine, New Orleans, LA, USA
- 4:35 **H3.03 REGENERATION OF MERKEL CELLS IN ENGINEERED SKIN SUBSTITUTES GRAFTED TO MICE**
 Dorothy M. Supp¹, Jennifer M. Hahn¹, Kevin L. McFarland¹, Kelly A. Combs¹, Andrea L. Lalley¹, Christopher M. Lloyd¹, Steven T. Boyce²
¹Shriners Hospitals for Children - Cincinnati, Cincinnati, OH, USA, ²University of Cincinnati College of Medicine, Cincinnati, OH, USA
- 4:45 **H3.04 A NEW HERNIA MESH PRECISELY ENGINEERED TO PREVENT HERNIA RECURRENCE**
 Mohamed M. Ibrahim, Richard R. Glisson, Ken Gall, Howard Levinson
 Duke University Medical Center, Durham, NC, USA
- 4:55 **H3.05 STABILIZED COLLAGEN MATRIX DRESSING IMPROVES WOUND MACROPHAGE FUNCTION AND EPITHELIALIZATION**
 Mohamed S. El Masry¹, Amitava Das¹, Scott Chaffee¹, Piya Das Ghatak¹, Shomita Mathew-Steiner¹, Natalia Higueta-Castro¹, Raafat A. Anani², Sashwati Roy¹, Chandan K. Sen¹
¹Department of Surgery, Center for Regenerative Medicine and Cell Based Therapies and Comprehensive Wound Center, The Ohio State University Wexner Medical Center, Columbus, OH, USA, ²Department of General Surgery, Zagazig University, Zagazig, Egypt
- 5:05 **H3.06 IMPLANTABLE OXYGEN PLATFORM FOR CONTINUOUS, REAL-TIME DETECTION OF VASCULAR PERFUSION AND ISCHEMIA**
 Mohamed M. Ibrahim, Ryan M. Schweller, Mahmoud M. Mohammed, David B. Powers, Bruce Klitzman
 Duke University Medical Center, Durham, NC, USA

Burn Wounds (H4) ROOM 203B

Moderators: Elizabeth A. Grice, MD; Amanda S. MacLeod, MD

- 4:15 **H4.01 DESIGN AND TEST OF TARGETED LIPID-NANOPARTICLES IN BURN WOUND CARE**
 Subhadip Ghatak, Jilong Li, Mohamad S. El Masry, Amitava Das, Yang Liu, Sashwati Roy, Robert J. Lee,

Chandan K. Sen
The Ohio State University, Columbus, OH, USA

- 4:25 **H4.02 GRANZYME K IMPAIRS WOUND HEALING**
Christopher T. Turner¹, Matthew Zeglinski¹, Hongyan Zhao¹, Phillip Bird², Anthony Papp¹, David Granville¹
¹University of British Columbia, Vancouver, BC, Canada, ²Monash University, Melbourne, Australia
- 4:35 **H4.03 REDUCTION OF INFECTION AND TISSUE LOSS IN A PORCINE MODEL OF PROLONGED FIELD CARE**
Kristo Nuutila¹, Lu Yang¹, Josh Grolman², Michael Broomhead¹, Andrew Onderdonk³, David Mooney², Elof Eriksson¹
¹Applied Tissue Technologies, Hingham, MA, USA, ²Harvard University, Boston, MA, USA, ³Brigham and Women's Hospital, Boston, MA, USA
- 4:45 **H4.04 DETERMINATION OF ADEQUATE DEBRIDEMENT OF BURN WOUNDS VIA LASER SPECKLE IMAGING**
Randolph Stone, II, David Larson, John Wall, Kyle Florell, Hannah Dillon, Christine Kowalczewski, Shanmugasundaram Natesan, Robert Christy
US Army Institute of Surgical Research, Fort Sam Houston, TX, USA
- 4:55 **H4.05 ALLOGENEIC CD26 / CD55 CELL THERAPY FOR TREATING BURN WOUNDS**
Artem Trotsyuk, Melanie Rodrigues, Clark Bonham, Paul Mittermiller, Geoffrey Gurtner
Division of Plastic and Reconstructive Surgery, Department of Surgery, Stanford University School of Medicine, Stanford, CA, USA
- 5:05 **H4.06 EFFICACY OF PRESSURE GARMENT THERAPY AT REDUCED LENGTHS OF DAILY WEAR**
Danielle M. DeBruler¹, Jacob C. Zbinden¹, Molly E. Baumann¹, Britani N. Blackstone¹, John K. Bailey¹, Dorothy M. Supp², Heather Powell¹
¹The Ohio State University, Columbus, OH, USA, ²Shriners Hospitals for Children, Cincinnati, OH, USA

GRAND OPENING OF EXHIBITS/COCKTAIL RECEPTION

5:30 P.M. - 8:30 P.M. HALL AB
WHS Exhibit Booth #318

DAY 3: FRIDAY, APRIL 27, 2018

INDUSTRY-SUPPORTED SYMPOSIUM BREAKFAST

7:30 A.M. – 9:00 A.M.

BREAK

9:00 A.M. – 9:15 A.M.

WHS SESSION I: BEST JOURNAL ARTICLES of 2017-2018

9:15 A.M. - 10:15 A.M. ROOM 207BCD

Moderators: Luisa DiPietro, DDS, PhD; Jeffrey M. Davidson, MD, PhD

Speakers: Luisa DiPietro, DDS, PhD; Jeffrey M. Davidson, MD, PhD

Keeping up with the literature in wound healing science and practice is a challenge! In this session, some of the highest impact articles of the past year that advanced our knowledge and understanding will be reviewed. Join us and catch up!

BREAK

10:15 A.M. - 10:30 A.M.

WHS SESSION J: ETRS SESSION: PROGENITOR CELLS AND MOLECULAR MECHANISMS IN WOUND HEALING

10:30 A.M. - 11:30 A.M. ROOM 207BCD

Moderators: Boris Hinz, BSc, PhD

Speakers: Sabine Eming, MD; Phil Stephens, MD

Chronic and/or fibrotic healing occur when body-inherent repair capacities are impaired or overwhelmed. Regenerative medicine could support the body's repair force by replacing/supporting injured, diseased or aged tissues with fully functional counterparts or stem/progenitor cells from various sources. However, regenerative medicine still faces challenges, one of which is our incomplete understanding of progenitor cell biology. Following implantation, regenerative stem cells can fail to acquire the desired functionality and become part of the dysregulated repair process by developing tumorigenic or fibrotic/scarring features. This session will discuss how fundamental repair signaling pathways can be controlled in progenitor cells to promote human adult organ regeneration. The clinical implications of recent research findings will be discussed.

BREAK

11:30 A.M. - 11:45 A.M.

LUNCH WITH EXHIBITORS HALL AB

11:45 A.M. – 2:15 P.M.

WHS MEET THE MENTORS (non-accredited)

12:15 P.M. - 2:00 P.M. ROOM 210AB

Moderator: Harriet W. Hopf, MD

Speakers: Lisa Gould, MD

As a new faculty member, clinician, or investigator, how can you simultaneously establish a successful clinical practice while developing a productive line of research and establishing a funded research laboratory? In this session, trainees and junior faculty will have the opportunity to learn from successful leaders in wound healing research and practice, first through a keynote address and then at interactive tables highlighting areas such as obtaining grant funding, navigating the academic promotion process, managing your time, and translating science into innovations through technology commercialization.

BREAK

2:00 P.M. - 2:15 P.M.

WHS SESSION K: CONCURRENT ORAL ABSTRACTS II (non-accredited)

2:15 P.M. - 3:15 P.M.

Oral presentations will feature the highest scoring abstracts submitted to the WHS.

Chronic Wounds (K1) ROOM 207BCD

Moderators: Traci A. Wilgus, PhD; Sara Ud-Din, BSc, MSc

2:15 **K1.01 USING IN VIVO LABEL-FREE MULTIPHOTON MICROSCOPY TO MONITOR WOUND METABOLISM**

Jake D. Jones, Hallie E. Ramser, Alan Woessner, Kyle P. Quinn
University of Arkansas, Fayetteville, AR, USA

2:25 **K1.02 OUTCOME ANALYSIS OF HYPERBARIC OXYGEN THERAPY IN DIABETIC WOUNDS AND RELATED GENE EXPRESSION ANALYSIS**

Vikram G. Mookerjee, Xiao Tian Wang, Mariska Raglow-Defranco, Solomon Swartz, Bielinsky Brea,

Deborah Ciombor, Paul Y. Liu
Rhode Island Hospital, Providence, RI, USA

- 2:35 **K1.03 TRANSDERMAL DEFEROXAMINE ENHANCES WOUND HEALING IN AGED MICE**
Clark A. Bonham, Melanie Rodrigues, Artem Trotsyuk, Zachary Stern-Buchbinder, Mohammed Inayathullah, Jayakumar Rajadas, Geoffrey C. Gurtner
Stanford, Stanford, CA, USA
- 2:45 **K1.04 EPIGENETIC MAPPING OF WOUND EDGE FROM CHRONIC WOUND PATIENTS USING NEXT GENERATION SEQUENCING**
Kanhaiya Singh, Sashwati Roy, Durba Pal, Subhadip Ghatak, Shomita Steiner, Devleena Das, Pearly Yan, Ralf Bundschuh, Savita Khanna, Chandan K. Sen. *The Ohio State University, columbus, OH, USA*
- 2:55 **K1.05 KERATINOCYTE-FIBROBLAST CROSSTALK VIA EXTRACELLULAR VESICLES REVEALS INTERPLAY OF MIRNAS THAT INHIBITS KGF SIGNALING IN DIABETIC FOOT ULCERS**
Irena Pastar, Horacio A. Ramirez, Andrea F. Ferreira, Ivan Jozic, Marta Garcia-Contreras, Jeffrey McBride, Robert S. Kirsner, Marjana Tomic-Canic
University of Miami Miller School of Medicine, Miami, FL, USA
- 3:05 **K1.06 TRANSDERMAL DEFEROXAMINE SIGNIFICANTLY ENHANCES HEALING OF SICKLE CELL ULCERS**
Melanie Rodrigues¹, Clark A. Bonham¹, Mohammed Inayathullah¹, Jayakumar Rajadas¹, George P. Yang¹, Minniti P. Caterina², Kalpna Gupta³, Michael T. Longaker¹, Geoffrey C. Gurtner¹
¹Stanford University School of Medicine, Stanford, CA, USA, ²Albert Einstein College of Medicine, Bronx, NY, USA, ³University of Minnesota, Minneapolis, MN, USA

Chronic Wounds and Inflammation (K2) ROOM 207A

Moderators: Rummana Aslam, MD; Luris C. De Calero, MD

- 2:15 **K2.01 A MODIFIED COLLAGEN GEL RESOLVES WOUND INFLAMMATION VIA MICRORNA-21-DEPENDENT PRO-HEALING MACROPHAGE POLARIZATION**
Amitava Das, Motaz Abas, Savita Khanna, Sashwati Roy, Chandan K. Sen
Department of Surgery, Center for Regenerative Medicine and Cell Based Therapies and Comprehensive Wound Center, The Ohio State University Wexner Medical Center, Columbus, OH, USA
- 2:25 **K2.02 PHYSIOLOGICAL CELL REPROGRAMMING AT THE SITE OF TISSUE INJURY CRITICAL ROLE OF MIR-21**
Mithun Sinha¹, Kanhaiya Singh¹, Amitava Das¹, Subhadip Ghatak¹, Heather Powell², Brian Rhea¹, Britani Blackstone², Savita Khanna¹, Chandan K Sen¹, Sashwati Roy¹
¹Comprehensive Wound Center, Center for Regenerative Medicine and Cell Based Therapies, The Ohio State University, Columbus, OH, USA, ²Department of Biomedical Engineering, The Ohio State University, Columbus, OH, USA
- 2:35 **K2.03 VIABLE CRYOPRESERVED UMBILICAL TISSUE (VCUT) BARRIER REDUCES POST OPERATIVE ADHESIONS IN A RABBIT ABDOMINAL ADHESION MODEL**
Sandeep Dhall¹, Turhan Coksaygan², Tyler M. Hoffman¹, Mathew Moorman¹, Anne Lerch¹, Jin-Qiang Kuang¹, Malathi Sathyamoorthy¹, Alla Daniilkevitch¹
¹Osiris Therapeutics Inc., Columbia, MD, USA, ²University of Maryland, Baltimore, Baltimore, MD, USA
- 2:45 **K2.04 THE ROLE OF THE MICROSURGICAL TISSUE TRANSFER IN DIABETIC FOOT ULCER: COMPLETING THE MOST FUNCTIONAL HEALING**
Donghyeok Shin, Dongkun Jeon
Konkuk University Medical Center, Seoul, Korea, Republic of
- 2:55 **K2.05 SUBSTANCE P ACTIVATES THE EPIDERMAL DENDRITIC T CELLS TO PROMOTE WOUND HEALING BY PRODUCING NGF**

Guo-You ZHANG , Yi-Xuan ZHAO, Qing-Feng LI, Lian ZHU
Shanghai Ninth People's Hospital, Shanghai, China

3:05 **K2.06 HUMAN MACROPHAGE RESPONSE TO BACTERIAL AND FUNGAL ISOLATES FROM DIABETIC FOOT ULCERS**

Carly Deussenbery¹, Anamika Bajpai, PhD¹, Lindsay Kalan, PhD², Jacquelyn S. Meisel², Brandon Marcinkiewicz, MS¹, Sue E. Gardner, PhD³, Elizabeth Grice, PhD², Kara L. Spiller, PhD¹
¹*Drexel University, Philadelphia, PA, USA*, ²*University of Pennsylvania, Philadelphia, PA, USA*,
³*University of Iowa, Iowa City, IA, USA*

ECM, Fibrosis and Scarring (K3) ROOM 203A

Moderators: Jeffrey M. Davidson, MD; Veronica Haywood, MD

2:15 **K3.01 ROLE OF MRTF-A AND MRTF-B IN POST-OPERATIVE INTRA-ABDOMINAL ADHESION FORMATION**

Paul McGaha¹, Cullen McCarthy¹, Phillip Bonney², James Griffith¹, Eric Howard¹, James Tomasek¹, Jason Lees¹, William Berry¹
¹*University of Oklahoma Health Sciences Center, Oklahoma City, OK, USA*, ²*University of Southern California, Los Angeles, CA, USA*

2:25 **K3.02 REGULATION OF HYALURONAN METABOLISM ATTENUATES ORGAN FIBROSIS**

Xinyi Wang¹, Swathi Balaji¹, Alexander Blum¹, Hui Li¹, Emily Steen¹, Natalie Templeman¹, Paul Bollyky², Sundeep Keswani¹
¹*BCM, Houston, TX, USA*, ²*Stanford University, Stanford, CA, USA*

2:35 **K3.03 COMPARATIVE RNA-SEQ TRANSCRIPTOMIC ANALYSIS USING INGENUITY PATHWAY OF UNSCARRED HUMAN SKIN, VERSUS NORMAL SCARRING AND ABNORMAL KELOID SCARS**

Silvian Tan, Ping Wang, Ardeshir Bayat
University of Manchester, Manchester, United Kingdom

2:45 **K3.04 WT1 TRANSCRIPTS ARE ALTERNATIVELY SPLICED AND M1 CYTOKINE INDUCIBLE IN PALMAR FASCIA FIBROBLASTS**

John Luo, Emmy Sun, Trisiah Tugade, Ana Pena Diaz, Bing Siang Gan, Ruby Grewal, Nina Suh, David B. O'Gorman
Lawson Health Research Institute and University of Western Ontario, London, ON, Canada

2:55 **K3.05 POTENTIAL ROLE OF NEUROPEPTIDE RECEPTORS IN SCLERODERMA**

Mohamed M. Ibrahim, Elizabeth McKinnon, Mary E. Sunday, Howard Levinson
Duke University Medical Center, Durham, NC, USA

3:05 **K3.06 MYOFIBROBLAST DIFFERENTIATION OF FETAL FIBROBLASTS IS INHIBITED IN RESPONSE TO ECM RIGIDITY AND TGF-B1**

Aron Parekh, PhD, Rachel J. Jerrell, Mitchell J. Leih
Vanderbilt University Medical Center, Nashville, TN, USA

Angiogenesis (K4) ROOM 203B

Moderators: Ardeshir Bayat, AA/AS; Ruben Basson, MD

2:15 **K4.01 ANGIOGENESIS THROUGH STIMULATION WITH EXTERNAL VOLUME EXPANSION IMPROVES ADIPOSE TISSUE GRAFT RETENTION IN A RADIATION FIBROSIS MODEL**

Robert Slamin, BS, Jorge Lujan-Hernandez, MD, Michael S. Chin, MD, Janice F. Lalikos, MD
University of Massachusetts Medical School, Worcester, MA, USA

2:25 **K4.02 INTERLEUKIN-10 IMPROVES DIABETIC WOUND NEOVASCULARIZATION VIA ENDOTHELIAL PROGENITOR CELL (EPC) RECRUITMENT**

Emily Steen¹, Swathi Balaji¹, Kenneth Liechty², Timothy Crombleholme², Paul Bollyky³, Sundeep Keswani¹

¹BCM, Houston, TX, USA, ²U Colorado SOM, Aurora, CO, USA, ³Stanford University SOM, Stanford, CA, USA

2:35 **K4.03 DECREASED LYMPHANGIOGENESIS IN THE SKIN OF PATIENTS WITH KELOID**

Guo-You ZHANG, Yi-Xuan ZHAO, Qing-Feng LI, Chao-Hua JIANG, Lian ZHU
Shanghai Ninth People's Hospital, Shanghai, China

2:45 **K4.04 IMPROVED PERFUSION AND WOUND HEALING IN HEALTHY PIGS WITH MRG-110, AN INHIBITOR OF MICRORNA-92A**

Rusty L. Montgomery, Linda A. Pestano, Corrie L. Gallant-Behm, Paul Rubin
miRagen Therapeutics, Boulder, CO, USA

2:55 **K4.05 EPITHELIAL HYPOXAMIR MIR-210 DIRECTLY CONTRIBUTES TO ISCHEMIC SKIN INJURY**

Ayan Biswas, Subhadip Ghatak, Mohamed El Masry, Savita Khanna, Sashwati Roy, Chandan K. Sen
Ohio State University, columbus, OH, USA

3:05 **K4.06 DETECTION OF ACUTE VASCULAR OCCLUSION USING OXYGEN MONITORING IN MYOCUTANEOUS FLAPS**

Mohamed M. Ibrahim¹, Jennifer S. Chien¹, Mahmoud M. Mohammed¹, Timothy King², Bruce Klitzman¹
¹Duke University Medical Center, Durham, NC, USA, ²University of Alabama, Birmingham, AL, USA

BREAK

3:15 P.M. - 3:30 P.M.

WHS DAY 3 GENERAL SESSION – OPIOIDS & WOUND HEALING

3:30 P.M. – 4:30 P.M. Crown Ballroom

Moderators: Sashwati Roy, PhD

Speaker: Victoria K. Shanmugam, MD, FACR, FACP

Opioids are frequently required in the management of pain in healing wounds, particularly when there is impaired healing. Wounds are known to contain opioid receptors, and opioids are known to have effects beyond analgesia, including T-cell inhibition and respiratory depression. Recently, it has been shown that greater opioid use is associated with impaired healing. In this session, the complex effects of opioids in wound healing will be discussed.

BREAK

4:30 P.M. – 4:45 P.M.

WHS Session L: WOUND HEALING FOUNDATION - 3M AWARD LECTURE

4:45 P.M. – 5:45 P.M. ROOM 207BCD

Moderators: Laura Parnell, BS, MS, CWS; Joshua Tam, PhD

Speaker: Veronica Haywood, DPT

Diabetic Lower Extremity Ulcerations (DLEU's) are a common complication of diabetes (DM) that severely impact quality of life and can lead to amputation. With DM reaching epidemic proportions, a thorough understanding of the pathogenesis involved in impaired healing is required. Previous studies suggest that DM can alter glycosylation related gene expression leading to changes in protein sialylation and fucosylation. A disruption of the normal patterns of enzymatic protein glycosylation during wound healing would be expected to lead to functional alterations in cellular-protein interactions and signaling, thereby affecting wound healing and epithelial integrity. Although the expression and activity of ceramide glycosyl transferases are recognized as a necessary component of normal epidermal homeostasis and skin barrier function, most other glycosylation related pathways have been ignored during normal and DM cutaneous wound healing. Our preliminary studies have identified multiple glycosylation gene pathways that are differentially expressed in DM and normal skin wound healing, including polysialylation. Additionally, our analysis of previously published datasets identified

alterations in N- and O- linked glycosylation related pathways in ulcerated versus intact human DM skin. With funding from the Wound Healing Society Foundation 3M Fellow Award, we are investigating the regulation of enzymatic protein glycosylation during diabetic and non-diabetic wound healing to determine whether diabetes induces impairments in skin wound healing by altering the pattern of normal protein glycosylation.

WHS BUSINESS MEETING

5:45 P.M. – 6:45 P.M. ROOM 207BCD

WHS Session M: RAPID FIRE POSTER TALKS

6:45 P.M. - 7:15 P.M. ROOM 207BCD

Moderators: Praveen R. Arany, DDS, PhD; Gayle M. Gordillo, MD

This session will highlight the highest scoring abstracts selected for poster presentations. Eight short 'rapid-fire' poster talks will be featured. Presenters will have one slide and two minutes to summarize novel research findings, then one minute to answer questions. This session will immediately precede the poster gala, where all poster presenters will be available to discuss their research.

- 6:48 **M1.01 PROTEASE-ACTIVATED RECEPTOR-2 KNOCKDOWN ATTENUATES THE FIBROTIC PHENOTYPE IN POST-BURN HYPERTROPHIC SCAR FIBROBLASTS**
Jayson W. Jay, Anesh Prasai, Amina El Ayadi, David N. Herndon, Celeste C. Finnerty
University of Texas Medical Branch, Galveston, TX, USA
- 6:51 **M1.02 MECHANICAL EDUCATION IN VITRO ENHANCES REGENERATIVE CAPACITIES OF HUMAN MESENCHYMAL STEM CELLS IN VIVO**
Marielle Walraven, Akosua Vilaysane, John E. Davies, Boris Hinz
University of Toronto, Toronto, ON, Canada
- 6:54 **M1.03 FIBROBLAST MEDIATED NAX SIGNALING DRIVES INFLAMMATION IN OPEN WOUNDS**
Huining Bian, Ping Xie, Elena Bogdanovic, Emily Elizabeth Friedrich, Seok Jong Hong, Robert Galiano, Thomas Mustoe
Northwestern University Feinberg School of Medicine, Chicago, IL, USA
- 6:57 **M1.04 BIOFILM INFECTION POSES RISK OF OXIDATIVE STRESS VIA REDOX CYCLING OF SECRETORY PYOCYANIN**
Karamjeet Kaur, James Boslett, Craig Hemann, Jay L. Zweier, Chandan K. Sen
Comprehensive Wound Center, The Ohio State University, Columbus, OH, USA
- 7:00 **M1.05 DIFFERENTIAL TIGHT JUNCTION EXPRESSION IN SKIN AND MUCOSAL WOUNDS**
Junhe Shi, Luisa A. DiPietro, Lin Chen
Center for Wound Healing and Tissue Regeneration, College of Dentistry, University of Illinois at Chicago, Chicago, IL, USA
- 7:03 **M1.06 COULD -79 °C SPRAY-TYPE CRYOTHERAPY BE AN EFFECTIVE MONOTHERAPY FOR THE TREATMENT OF KELOID?**
Tae Hwan Park¹, Yun Joo Park²
¹CHA University, Seongnam-Si, Korea, Republic of, ²Hallym University, Anyang-Si, Korea, Republic of
- 7:06 **M1.07 RAMAN SPECTROSCOPY AND HPLC: IN VIVO AND EX-VIVO VALIDATION OF A COMBI-APPROACH FOR TESTING TRANSDERMAL DELIVERY OF COMPOUNDS IN WOUNDS AND SCARS**
Rubinder Basson¹, Martin Isabelle², Weiping Li¹, Mohamed Baguneid³, David Reece², Ardeshir Bayat¹
¹University of Manchester, Manchester, United Kingdom, ²Renishaw, Gloucestershire, United Kingdom, ³Manchester University NHS Foundation Trust, Manchester, United Kingdom
- 7:09 **M1.08 CONTRIBUTION OF INDIVIDUAL SATELLITE CELLS TO MUSCLE REGENERATION ASSESSED USING A CONFETTI MOUSE MODEL**

Hans Heemskerk¹, N Suhas Jagannathan¹, Binh Phu Nguyen¹, Keshmarathy D/O Sacadevan², Paul Matsudaira², Peter TC So³, Lisa Tucker-Kellogg¹

¹Duke-NUS Medical School, Singapore, Singapore, ²National University of Singapore, Singapore, Singapore, ³Massachusetts Institute of Technology, Cambridge, MA, USA

WHS AND SAWC SPRING POSTER GALA/AWARDS

7:15 P.M. – 8:45 P.M. HALL C1

****POSTER PRESENTERS SHOULD ATTEND THIS ENTIRE EVENT****

DAY 4: SATURDAY, APRIL 28, 2018

INDUSTRY-SUPPORTED BREAKFAST SYMPOSIA

7:30 A.M. - 9:00 A.M.

BREAK

9:00 A.M. - 9:15 A.M.

WHS SESSION N: CONCURRENT ORAL ABSTRACTS III (non-accredited)

9:15 A.M. - 10:15 A.M.

Oral presentations will feature the highest scoring abstracts submitted to the WHS.

Scarring, ECM & Regeneration (N1) ROOM 207BCD

Moderators: Allen Halloway, MD; Ivan Jozic, MD

9:15 **N1.01 MECHANICAL TENSION REGULATES MESENCHYMAL STEM CELL PARACRINE SIGNALING ON DERMAL FIBROBLASTS VIA MICRORNA- AND LINC RNA-ENRICHED EXOSOMES**

Natalie Templeman¹, Hui Li¹, Emily Steen¹, Xinyi Wang¹, Alexander Blum¹, Paul Bollyky², Sundeep Keswani¹, Swathi Balaji¹

¹Baylor College of Medicine, Houston, TX, USA, ²Stanford University, Stanford, CA, USA

9:25 **N1.02 A COMPLEX MECHANISM OF EXTRACELLULAR MATRIX INDUCTION BY ER CHAPERONE CALRETICULIN AND TGF- β FOR TISSUE REGENERATION**

Leslie I. Gold, Unnati M. Pandya, Julien Daubriac, Ana Tellechea, Miguel M. Manzanares, Chinaza Egbuta

New York University School of Medicine, New York, NY, USA

9:35 **N1.03 MICRO-ARCHITECTURAL ANALYSIS OF UNSCARRED AND SCARRED HUMAN DERMIS PROVIDES STRUCTURAL INSIGHT FOR FUTURE SCAFFOLD DESIGN**

Umair Khan, Ardeshir Bayat

University of Manchester, Manchester, United Kingdom

9:45 **N1.04 DYNAMIC FIBROBLAST CONTRACTIONS ATTRACT REMOTE MACROPHAGES IN FIBRILLAR COLLAGEN MATRIX**

Pardis Pakshir¹, Moien Alizadehghashi², Boaz Wong³, Nuno Miranda Coelho⁴, Christopher McCulloch⁵, Boris Hinz⁶

¹Laboratory of Tissue Repair and Regeneration, Matrix Dynamics Group, Faculty of Dentistry, University of Toronto, Toronto, ON, Canada, ²Department of Chemistry, University of Toronto, Toronto, ON, Canada, ³Department of Physiology, University of Western Ontario, London, ON, Canada, ⁴Matrix Dynamics Group, Faculty of Dentistry, University of Toronto, Toronto, ON, Canada, ⁵Matrix Dynamics Group, Faculty of Dentistry, University of Toronto, Toronto, ON, Canada, ⁶Laboratory of Tissue Repair and Regeneration, Matrix Dynamics Group, Faculty of Dentistry, University of Toronto, Toronto, ON, Canada

9:55 **N1.05 ISOLATION AND CHARACTERIZATION OF PERICYTES FROM BURN ESCHAR TISSUES**
Alexander Evdokiou¹, Richard Bodnar², Latha Satish¹
¹Shriners Hospitals for Children-Cincinnati, Cincinnati, OH, USA, ²Veterans Affairs Medical Center, Pittsburgh, PA, USA

10:05 **N1.06 DECELLULARIZED KELOID MATRIX AS A NOVEL THREE-DIMENSIONAL MODEL FOR STUDYING CELLULAR BEHAVIOR OF ABNORMAL KELOID FIBROBLASTS**
Silvian Tan, Ardeshir Bayat
University of Manchester, Manchester, United Kingdom

Chronic Wounds (N2) ROOM 207A

Moderators: Anie Philip, PhD; Lisa Tucker-Kellogg, MD

9:15 **N2.01 IMPORTANCE OF OXIDATIVE STRESS ON THE INITIATION OF CHRONIC WOUND DEVELOPMENT IN A DIABETIC CHRONIC WOUND MOUSE MODEL**
*Jane H. Kim, Amanda Tedesco, Paul Ruegger, James Borneman, Manuela Martins-Green
University of California, Riverside, Riverside, CA, USA*

9:25 **N2.02 N-ACETYL-CYSTEINE DISASSEMBLES BACTERIAL BIOFILM AND CAUSES CELL DEATH LEADING TO DISAPPEARANCE OF THE BIOFILM AND IMPROVED WOUND HEALING**
*Xin C. Li, Amanda Tedesco, Jane H. Kim, Manuela Martins-Green
University of California Riverside, Riverside, CA, USA*

9:35 **N2.03 GLOBAL GENE DYSREGULATION DUE TO HIGH OXIDATIVE STRESS LEADS TO CHRONIC WOUND INITIATION**
*Jane H. Kim, Sandeep Dhall, Manuela Martins-Green
University of California, Riverside, Riverside, CA, USA*

9:45 **N2.04 RENAL DYSFUNCTION AGGRAVATED IMPAIRED DIABETIC CUTANEOUS WOUND HEALING**
*Seok Hong, Ping Xie, Mimi wu young, Huining Bian, Solmaz N. Leilabadi, Thomas A. Mustoe, Robert D. Galiano
Northwestern university, Chicago, IL, USA*

9:55 **N2.05 THE SIGNIFICANCE OF FRICTION AND SHEAR IN THE PREVENTION OF CONTEMPORARY HOSPITAL ACQUIRED PRESSURE ULCERS**
*Raysa Cabrejo, Sifon Ndon, Ean Saberski, Carolyn Chuang, Henry C. Hsia
Yale School of Medicine, New Haven, CT, USA*

10:05 **N2.06 EFFECTS OF NONCONTACT LOW FREQUENCY ULTRASOUND (NLFU) ON WOUND HEALING AT THE MOLECULAR LEVEL**
*Cornelia Wiegand¹, Kyle Bittenger², Robert D. Galiano³, Vickie R. Driver⁴, Pamela G. Unger⁵, Helen D. Hahn⁵, Gary W. Gibbons⁶
¹University Hospital Jena, Jena, Germany, ²Department of Microbiology, Perelman School of Medicine, Philadelphia, PA, USA, ³Division of Plastic Surgery, Northwestern University Feinberg School of Medicine, Chicago, IL, USA, ⁴Department of Orthopedic Surgery, Brown University, Providence, RI, USA, ⁵Alliqua Biomedical, Inc, Langhorne, PA, USA, ⁶Center for Wound Healing, South Shore Hospital, Weymouth, MA, US*

Inflammation and Immunity (N3) ROOM 203A

Moderators: Michael Schurr, MD; Xinyi Wang, MD

9:15 **N3.01 CHRONIC WOUND MICROBIOME COLONIZATION ON MOUSE MODEL FOLLOWING CRYOGENIC PRESERVATION**
Craig D. Tipton¹, Nick Sanford², Jake Everett³, Randall D. Wolcott², Kendra P. Rumbaugh³, Caleb D. Phillips¹

¹Texas Tech University, Lubbock, TX, USA, ²Southwest Regional Wound Care Center, Lubbock, TX, USA, ³Texas Tech University Health Sciences Center, Lubbock, TX, USA

- 9:25 **N3.02 COLLAGENASE RESOLVES WOUND INFLAMMATION THROUGH A PGE 2 -EP4-STAT6 MEDIATED PRO-HEALING MACROPHAGE POLARIZATION**
Amitava Das¹, Soma Datta¹, Eric Roche², Scott Chaffee¹, Lei Shi², Komel Grover², Savita Khanna¹, Chandan K. Sen¹, Sashwati Roy¹
¹Department of Surgery, Center for Regenerative Medicine and Cell Based Therapies and Comprehensive Wound Center, The Ohio State University Wexner Medical Center, Columbus, OH, USA, ²Research & Development, Smith & Nephew, Inc., Fort Worth, TX, USA
- 9:35 **N3.03 GRANZYME B IN SUB-EPIDERMAL BLISTERING**
David J. Granville, Valerio Russo, Theo Klein, Nick Carr, Richard Crawford, Chris M. Overall
University of British Columbia, Vancouver, BC, Canada
- 9:45 **N3.04 HYPERGLYCEMIA INDUCES LONG NON-CODING RNA GAS5 EXPRESSION THROUGH THE RIBOSOMAL BINDING PROTEIN HUR**
Junwang Xu, Junyi Hu, Carlos Zgheib, Maggie M. Hodges, Kenneth W. Liechty
University of Colorado, Aurora, CO, USA
- 9:55 **N3.05 INVESTIGATION OF ENDOGENOUS GENE EXPRESSION CHANGES AFTER VEGF GENE THERAPY VIA AAV2 DOUBLE-STRANDED VECTORS**
Xiao Tian Wang, Vikram G. Mookerjee, William R. Miklavcic, Sherry YQ Tang, Paul Y. Liu
Rhode Island Hospital, Providence, RI, USA
- 10:05 **N3.06 AN EFFECTIVE “ANTI-INFLAMMATORY/ANTI-ROS” COMBINATION THERAPY THAT ACCELERATES DIABETIC WOUND HEALING**
Carlos Zgheib¹, Junyi Hu¹, Junwang Xu¹, Maggie M. Hodges¹, Sarah A. Hilton¹, Lindel C. Dewberry¹, Sudipta Seal², Kenneth W. Liechty, MD, FACS¹
¹Laboratory for Fetal and Regenerative Biology, University Of Colorado Denver and Colorado Children's Hospital, Aurora, CO, USA, ²Advanced Materials Processing and Analysis Center, Nanoscience Technology Center, University of Central Florida, Orlando, FL, USA

Acute Wounds (N4) ROOM 203B

Moderators: Harvey N. Himel, MD, MPH; Subhadip Ghatak, MD

- 9:15 **N4.01 NEXT GENERATION SEQUENCING REVEALS NOVEL MECHANISM OF STATIN ACTION TO PROMOTE HEALING IN PRE-CLINICAL AND CLINICAL MODELS**
Andrew Sawaya, Irena Pastar, Ivan Jozic, Olivera Stojadinovic, Stephen C. Davis, Joel Gill, Robert S. Kirsner, Marjana Tomic-Canic
Wound Healing and Regenerative Medicine Research Program, Department of Dermatology and Cutaneous Surgery, University of Miami Miller School of Medicine, Miami, FL, USA
- 9:25 **N4.02 PEG-PLASMA HYDROGELS INCREASE EPITHELIALIZATION USING A HUMAN EX VIVO SKIN MODEL**
Randolph Stone, II, John Wall, Kyle Florell, Shanmugasundaram Natesan, Robert Christy
US Army Institute of Surgical Research, Fort Sam Houston, TX, USA
- 9:35 **N4.03 PLATELET RICH PLASMA TREATMENT ACCELERATES RE-EPITHELIALIZATION IN A MURINE MODEL OF EXCISIONAL WOUND HEALING**
Bonnie C. Carney¹, Benjamin J. Browne¹, Lauren T. Moffatt¹, Dean S. Rosenthal², Jeffrey W. Shupp¹
¹MedStar Health Research Institute, Washington, DC, USA, ²Georgetown University Medical Center, Washington, DC, USA
- 9:45 **N4.04 SKIN-SPECIFIC HYALURONAN KNOCKDOWN IN MICE BY AN OPTIMIZED TOPICAL 4-METHYLBELLIFERONE FORMULATION**
Emily H. Steen¹, Hui Li¹, Xinyi Wang¹, Natalie Templeman¹, Alexander Blum¹, Paul Bollyky², Sundeep G.

Keswani¹, Swathi Balaji¹

¹BCM, Houston, TX, USA, ²Stanford University SOM, Stanford, CA, USA

9:55 **N4.05 SUBSTANCE P PROMOTES FIBROSIS IN HUMAN CORNEAL STROMA**

Marta Sloniecka, Patrik Danielson
Umeå University, Umeå, Sweden

10:05 **N4.06 OMEGA-3 RICH FISH SKIN GRAFTS REDUCE DONOR SKIN REQUIREMENTS FOR FULL THICKNESS BURNS**

Randolph Stone, II ¹, David Larson¹, John Wall¹, Kyle Florell¹, Hannah Dillon¹, Skuli Magnusson², Hilmar Kjartansson², Shanmugasundaram Natesan¹, Robert Christy¹
¹US Army Institute of Surgical Research, Fort Sam Houston, TX, USA, ² Kerecis, Reykjavik, Iceland

BREAK

10:15 A.M. - 10:30 A.M.

WHS Day 4 GENERAL SESSION – FACE TRANSPLANT AS A MODEL FOR TISSUE ENGINEERING

10:30 A.M. – 11:30 A.M. Crown Ballroom

Moderators: Paul Y. Liu, MD

Speaker: Elof Eriksson, MD

Deep burns and tangential missile wounds can destroy the face while the brain remains fully functional. Current methods for wound closure including debridement, antimicrobials, skin transplantation and skin flaps provide unsatisfactory functional and esthetic results even after extensive reconstructive procedures. Since the first partial face transplant in France approximately 40 more have been done World Wide.

We have done a series of 7 face transplants successfully. 3 of the patients were injured by thermal burns, one by a chemical burn, two by missile injuries and one by animal bites. 5 patients were male and 2 were female. Donors were chosen from patients of the same sex, same skin color and with an age difference of less than 10 years.

After the transplantation, every patient has had at least one rejection episode which was treated successfully and all patients have retained their transplants. Diagnostic, technical, immune suppressive and other postoperative management issues will be discussed. Face transplantation seems to be indicated in the most severe facial injuries.

WHS MEETING ADJOURNS

11:30 A.M.

LUNCH WITH EXHIBITORS

11:45 A.M. – 2:15 P.M. HALL C1

WHS POSTER PRESENTATIONS

Poster Gala/Awards Session is Friday, April 27, 2018 from 7:15 P.M. - 8:45 P.M.

Regular Posters and Rapid Fire Posters

ACUTE WOUNDS

(RAPID FIRE POSTER)

M1.04 BIOFILM INFECTION POSES RISK OF OXIDATIVE STRESS VIA REDOX CYCLING OF SECRETORY PYOCYANIN

Karamjeet Kaur, James Boslett, Craig Hemann, Jay L. Zweier, Chandan K. Sen *Comprehensive Wound Center, The Ohio State University, Columbus, OH, USA*

(RAPID FIRE POSTER)

M1.05 DIFFERENTIAL TIGHT JUNCTION EXPRESSION IN SKIN AND MUCOSAL WOUNDS

Junhe Shi, Luisa A. DiPietro, Lin Chen

Center for Wound Healing and Tissue Regeneration, College of Dentistry, University of Illinois at Chicago, Chicago, IL, USA

P.AW01. ACUTE WOUND HEALING IN A RODENT MODEL OF UREMIA

Sai Krishna Duraisingham, Julius E. Kieswich, Steven M. Harwood, Muhammad M. Yaqoob *William Harvey Research Institute, London, United Kingdom*

P.AW02. EX-VIVO WOUND MODEL TO MEASURE MICROBIAL BURDEN, EPITHELIAL TOXICITY AND BIOMARKER CONCENTRATIONS ASSOCIATED WITH WOUND-HEALING PRODUCTS

Patrick Finnegan¹, Kira Heller, PhD¹, Robert Asmus, MS², Patrick Parks, MD PhD², Marnie Peterson, PhD DPharm¹

¹University of Wyoming, Jackson, WY, USA, ²3M Company, Mendota Heights, MN, USA

P.AW03. FIRST IDENTIFICATION OF VOLATILE BIOMARKER PROFILES AND THEIR ASSOCIATIONS IN ACUTE WOUND HEALING PROCESSES IN HUMAN SKIN

Mohammed Ashrafi¹, Iain White¹, Howbeer Muhamadali¹, Mohamed Baguneid², Teresa Alonso-Rasgado¹, Roy Goodacre¹, Ardeshir Bayat¹

¹The University of Manchester, Manchester, United Kingdom, ²Manchester University NHS Foundation Trust, Manchester, United Kingdom

P.AW04. COMPARISON OF BETAFOAM® , ALLEVYN® , AND PETROLATUM GAUZE (PG) FOR SPLIT-THICKNESS SKIN GRAFT (STSG) DONOR-SITE DRESSING

ChangSik Pak¹, DaeHwan Park², TaeSuk Oh³, WonJai Lee⁴, YoungJoon Jun⁵, KyungAh Lee⁶, KapSung Oh⁷, JongWon Rhie⁸

¹Seoul National University Bundang Hospital, Seoul, Korea, Republic of, ²Daegu Catholic University Medical Center, Daegu, Korea, Republic of, ³Asan Medical Center, Seoul, Korea, Republic of, ⁴Severance Hospital, Yonsei University Health System, Seoul, Korea, Republic of, ⁵The Catholic University of Korea, Bucheon St. Mary's Hospital, Bucheon, Korea, Republic of, ⁶Inje University Haeundae Paik Hospital, Busan, Korea, Republic of, ⁷Samsung Medical Center, Seoul, Korea, Republic of, ⁸The Catholic University of Korea, Seoul St. Mary's Hospital, Seoul, Korea, Republic of

P.AW05. SHORT-TERM ADMINISTRATION OF A HIGH-FAT DIET IMPAIRS WOUND REPAIR IN MICE

Fernanda Schanuel, Bruna Romana-Souza, Andrea Monte-Alto-Costa

Rio de Janeiro State University, Rio de Janeiro, Brazil

P.AW06. USE OF ABRA DYNAMIC TISSUE SYSTEM AND ACELL MATRISTEM FOR SUCCESSFUL CLOSURE OF TRAUMATIC COMPLEX EXTREMITY AND TRUNK SOFT TISSUE WOUNDS

Jayne McCauley, MD , Shirley McReynolds, FNP, Catherine Ronaghan, MD

Texas Tech University Health Sciences Center, Lubbock, TX, USA

P.AW07. INTRACELLULAR ATP DELIVERY INDUCES ENHANCED WOUND HEALING VIA EARLY INITIATION OF THE WOUND HEALING CASCADE

Harshini Sarojini, Sarah Eichenberger, Arezoo Rajaei, Sufan Chien
Price Institute of Surgical Research, Hiram C. Polk Jr. MD Department of Surgery, University of Louisville, Louisville, KY, USA

P.AW08. A RETROSPECTIVE REVIEW OF UBM-ECM USE IN TREATING ACUTE PLANTAR WOUNDS

Bruce A. Kraemer
Saint Louis University, Saint Louis, MO, USA

P.AW09. SECONDARY INTENTION HEALING AFTER SURGICAL EXCISION OF HIDRADENITIS SUPPURATIVA

Kyoungaw Nam, Keeyang Chung
Yonsei University Health System Severance Hospital, Seoul, Korea, Republic of

P.AW10. APPLICATION OF NEGATIVE PRESSURE WOUND THERAPY AFTER DISTAL DIGIT AMPUTATION FOR SUBUNGAL MELANOMA

Kyoungaw Nam, Keeyang Chung
Yonsei University Health System Severance Hospital, Seoul, Korea, Republic of

AGING & SENESCENCE

P.AS01. KNOWLEDGE AND PRACTICE OF DIABETIC FOOT CARE IN NURSING HOME CARE WORKERS

Hyo Jeong Song
Jeju National University, Jeju-si, Korea, Republic of

ANGIOGENESIS

P.ANG01. OPTIMIZING HEALING OUTCOME BY ZONAL CONDITIONING OF CUTANEOUS WOUNDS PRIOR TO SCAR FORMATION DEMONSTRATED IN A DOUBLE-BLIND RANDOMISED STUDY

Sara Ud-Din¹, Philip Foden², Mohsin Mazhari², Samer Al-Habba², Mohamed Baguneid², Douglas McGeorge³, Ardeshir Bayat¹

¹University of Manchester, Manchester, United Kingdom, ²Manchester University NHS Foundation Trust, Manchester, United Kingdom, ³Nuffield Health Chester Hospital, Chester, United Kingdom

P.ANG02. PHENOTYPIC CHANGE IN ANGIOGENIC FIBROCYTES IN PLANTER DECUBITUS ULCERS IN RATS

Yoshikiyo Akasaka¹, Tetsuya Okaneya², Chie Fujisawa³, Miho Nakamichi², Kiyoshi Onishi², Yuri Akishima-Fukasawa⁴, Naoko Honma⁴, Tetuo Mikami⁴

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BIOENGINEERING/BIOMATERIALS

P.BIO01. PROTEASE MODULATION BY AN OVINE-BASED COLLAGEN EXTRACELLULAR MATRIX DRESSING IN AN IN VITRO MODEL REPRESENTATIVE OF IN SITU USE

Michelle Chen, PhD¹, Abram D. Janis, MS CWCA², Louis Ferland, PhD¹
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P.BIO02. STRUCTURAL PROPERTIES OF VIABLE LYOPHILIZED PLACENTAL TISSUES

Nicholas Johnson, Vimal Jacob, Tyler Hoffman, Anne Lerch, Sandeep Dhall, Jin-Qiang Kuang, Malathi Sathyamoorthy, Alla Danilkovitch
Osiris Therapeutics Inc., Columbia, MD, USA

P.BIO03. PREPARATION AND ACTIVITY OF NANOCELLULOSIC MATERIALS AS PROTEASE SENSORS AND SEQUESTRANTS

J. Vincent Edwards, Nicolette Prevost, Krystal Fontentot, Brian Condon
Southern Regional Research Center, New Orleans, LA, USA

P.BIO04. ASSESSMENT OF MATRICELLULAR PROTEIN BIOMIMETIC SCAFFOLDS IN A PORCINE MODEL OF CUTANEOUS WOUND HEALING

Adam Hopfgartner, Karrie McLeod, Alexander El-Warrak, Douglas Hamilton
The University of Western Ontario, London, ON, Canada

P.BIO05. ASSESSMENT OF HUMAN AMNIOTIC TISSUE CELL VIABILITY

Anne Lerch, Vimal Jacob, Tyler Hoffman, Nicholas Johnson, Jin-Qiang Kuang, Sandeep Dhall, Malathi Sathyamoorthy, Alla Danilkovitch
Osiris Therapeutics Inc., Columbia, MD, USA

P.BIO06. TOWARDS NEXT GENERATION MAGGOT DEBRIDEMENT THERAPY: TRANSGENIC LUCILIA SERICATA LARVAE THAT PRODUCE AND SECRETE A HUMAN GROWTH FACTOR

Rebecca J. Davis, Esther J. Belikoff, Maxwell J. Scott
North Carolina State University, Raleigh, NC, USA

BURN WOUNDS

(RAPID FIRE POSTER)

M1.01 PROTEASE-ACTIVATED RECEPTOR-2 KNOCKDOWN ATTENUATES THE FIBROTIC PHENOTYPE IN POST-BURN HYPERTROPHIC SCAR FIBROBLASTS

Jayson W. Jay, Anesh Prasai, Amina El Ayadi, David N. Herndon, Celeste C. Finnerty
University of Texas Medical Branch, Galveston, TX, USA

P.BW01. ROLE OF PRESSURE MAGNITUDE IN COMPRESSION GARMENT THERAPY

Danielle M. DeBruler¹, Colleen Bendig¹, Molly E. Baumann¹, Britani N. Blackstone¹, John K. Bailey¹, Dorothy M. Supp², Heather Powell¹

¹The Ohio State University, Columbus, OH, USA, ²Shriners Hospitals for Children, Cincinnati, OH, USA

P.BW02. SCAR OUTCOMES FOLLOWING PRESSURE GARMENT THERAPY CESSATION

Danielle M. DeBruler¹, Jacob C. Zbinden¹, Molly E. Baumann¹, Britani N. Blackstone¹, John K. Bailey¹, Dorothy M. Supp², Heather Powell¹

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P.BW03. KINETICS OF COLLAGEN DEPOSITION IN BURN WOUNDS OF RED DUROC VS. YORKSHIRE PIG

Jesse Nguyen, Andrea Fourcaudot, Sai Lakshmi Rajasekh Karna, Fatemeh Sanjar, Liwu Qian, Ping Chen, David Silliman, Stardaous Gibbons, Kai Leung
Brooke Army Medical Center, Fort Sam Houston, TX, USA

P.BW04. IMPROVED HEALING OF DEEP PARTIAL THICKNESS BURN WOUNDS WITH OMEGA-3 RICH FISH SKIN DERMIS COMPARED TO FETAL BOVINE DERMIS

Randolph Stone, II¹, David Larson¹, John Wall¹, Kyle Florell¹, Hannah Dillon¹, Skuli Magnusson², Hilmar Kjartansson², Shanmugasundram Natesan¹, Robert Christy¹

¹US Army Institute of Surgical Research, Fort Sam Houston, TX, USA, ²Kerecis, Reykjavik, Iceland

P.BW05. SUCCESSFUL TREATMENT OF A SEVERE HIGH-VOLTAGE ELECTRICAL BURN WITH THORACOABDOMINAL INJURY

Huining Bian, Hanhua Li, Lianghua Ma, Chuanwei Sun, Hongmin Luo, Deqing Wu, Zihao Zhou, Wen Lai
Guangdong General Hospital, Guangzhou, China

CHRONIC WOUNDS

P.CW01. ECTOPIC EXPRESSION OF MYOCARDIN-RELATED TRANSCRIPTION FACTORS RESTORES MYOFIBROBLAST FUNCTION IN CHRONIC WOUND FIBROBLASTS

Bojie Dai, William Berry, James Griffith, James Tomasek
University of Oklahoma Health Sciences Center, Oklahoma City, OK, USA

P.CW02. MODIFIED KEYSTONE FLAP WITH FORTUNE COOKIE DESIGN: NEW “WORKHORSE” FLAP IN GLUTEAL REGION

Tae Hwan Park¹, Yun Joo Park²

¹CHA university, seongnam-si, Korea, Republic of, ²Hallym University, Anyang-si, Korea, Republic of

P.CW03. GENERATION OF AN EXTREMELY LONG TERM ISCHEMIC WOUND MODEL

Arezoo Rajaei, Harshini Sarojini, Sarah Eichenberger, Stephen O'Brien, Michael Martin, Sufan Chien

Price Institute of Surgical Research, Hiram C. Polk Jr. MD, Department of Surgery, University of Louisville, Louisville, KY, USA

P.CW04. SILVER BANDAGE TOXICITY TO HUMAN SKIN CELLS AND TO LEG ULCERS

Vojtech Pavlik¹, Kristina Nesporova, PhD¹, Hana Vagnerova¹, Natalie Cisarova¹, Jaroslav Pejchal, PhD², Barbora Safrankova, PhD¹, Lubos Sobotka, PhD³

¹Contipro a.s., Dolni Dobrouc, Czech Republic, ²Department of Toxicology, University of Defence, Hradec Kralove, Czech Republic, ³Metabolic Disorder Clinic of University Hospital, Hradec Kralove, Czech Republic

P.CW05. CLINICAL ASSESSMENT OF A NEW BIOFILM DISRUPTING AGENT FOR THE MANAGEMENT OF CHRONIC WOUNDS COMPARED TO STANDARD OF CARE - A NOVEL APPROACH

Daniel B. Kim, MD¹, William J. Namen, DPM², January F. Moore, BA¹, Mauricia A. Buchanan, BSN¹, Matthew F. Mynttti, PhD³, Valerie Y. Hayes, PhD³, Albert G. Hakaim, MD¹

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P.CW06. TREATMENT OF DEEP CAVITIES USING A PERFORATOR-BASED ISLAND FLAP WITH PARTIAL DE-EPITHELIZATION

Jung Woo Chang¹, Jeongseok Oh¹, Seung Suk Choi²

¹Hanyang Univ. Guri Hospital, Guri, Korea, Republic of, ²Plastic Surgery, Hanyang Univ. Guri Hospital, Guri, Korea, Republic of

P.CW07. A MURINE MODEL OF AGED DIABETIC WOUND HEALING

Giorgio Giatsidis, Dennis P. Orgill

Brigham and Women's Hospital - Harvard Medical School, Boston, MA, USA

P.CW08. DEHYDRATED HUMAN AMNION CHORION & ALLOGRAFT IMPROVED DIABETIC CUTANEOUS WOUND HEALING

Seok Hong¹, Ping Xie¹, Emily Friedrich¹, Abigail Phipps², Jay Hong¹, Thomas A. Mustoe¹, Robert D. Galiano¹

¹Northwestern University, Chicago, IL, USA, ²Musculoskeletal Transplant Foundation, Edison, NJ, USA

P.CW09. PROSPECTIVE CLINICAL OBSERVATIONAL STUDY ON EFFICACY OF DICHLORIDE OCTENIDYNE IN THE TREATMENT OF CHRONIC WOUNDS

Maciej Sopata¹, Elzbieta Tomaszewska², Mateusz Sopata³

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³Poznań University of Technology, Faculty of Mechanical Engineering and Management, Institute of Materials Engineering, Department of Metal Science and Surface Engineering, Poznan, Poland

P.CW10. THE COMBINED EFFECT OF MESENCHYMAL STEM CELLS AND CHICKEN EMBRYO EXTRACT ON THE FLAP VIABILITY AND MAST CELLS IN RANDOM SKIN FLAPS

Mohammad Bayat, MD, Hiram C Polk Jr. MD

University of Louisville, Louisville, KY, USA

P.CW11. CLINICAL ASSESSMENT THE EFFICACY OF A BIOFILM DISRUPTION WASH IN THE TREATMENT OF CHRONIC WOUNDS: A PILOT STUDY

Matthew F. Mynttti, PhD¹, Matthew Regulski, DPM²

¹Next Science, LLC, Jacksonville, FL, USA, ²The Wound Institute of Ocean County, NJ, Whiting, NJ, USA

P.CW12. IMMUNOMODULATORY AND WOUND HEALING EFFECTS OF COMBINED CHLOROGENIC ACID AND MYRICETIN FORMULATION

Sara Moghadam, Ehsan Jabbarzadeh
University of South Carolina, Columbia, SC, USA

P.CW13. COMBINING TREATMENT METHODS FOR DIABETIC FOOT ULCERS - TISSUE BASE PRODUCTS, NEGATIVE PRESSURE WOUND THERAPY AND OFFLOADING

Lucian G. Vlad, MD, Mir M. Ali, MD, Joseph A. Molnar, MD, PhD
Wake Forest School of Medicine, Winston-Salem, NC, USA

P.CW14. COMBINING TREATMENT METHODS FOR VENOUS LEG ULCERS - TISSUE BASED PRODUCTS, NEGATIVE PRESSURE WOUND THERAPY AND COMPRESSION

Lucian G. Vlad, MD, Mir M. Ali, MD, Joseph A. Molnar, MD, PhD
Wake Forest School of Medicine, Winston-Salem, NC, USA

P.CW15. EARLY DETECTION OF DEEP TISSUE INJURY IN CRITICALLY ILL SURGICAL PATIENTS

Miriam Putterman, Iris Xu, Elizabeth Mintz, Christine Chen, Matthew Richards, Alec Lafontant, Michael S. Weingarten, Brendan K. McCracken, Rose A. DiMaria-Ghalili, Leonid Zubkov, Michael Neidrauer, Peter A. Lewin
Drexel University, Philadelphia, PA, USA

EPITHELIALIZATION

P.EP01. NOVEL APPLICATION OF CULTURED EPITHELIAL AUTOGRAFTS (CEA) WITH EXPANDED MESH SKIN GRAFTING OVER ARTIFICIAL DERMIS

Sadanori Akita
Fukuoka University, Fukuoka, Japan

EXTRACELLULAR MATRIX

P.EXT01. A RETROSPECTIVE REVIEW OF UBM-ECM AS A PRIMARY RECONSTRUCTIVE MODALITY IN COMPLEX WOUNDS

Bruce A. Kraemer
Saint Louis University, Saint Louis, MO, USA

P.EXT02. THE RELATIONSHIP BETWEEN BONE BIOPSY AND BONE CULTURE RESULTS IN PATIENTS WITH OSTEOMYELITIS FROM PRESSURE ULCERS

Kunal Vani, Roshin Thomas, Matthew Finnegan, Jonathan Levin
Rowan University, Voorhees, NJ, USA

FIBROSIS/SCARRING

(RAPID FIRE POSTER)

M1.03 FIBROBLAST MEDIATED NAX SIGNALING DRIVES INFLAMMATION IN OPEN WOUNDS

Huining Bian, Ping Xie, Elena Bogdanovic, Emily Elizabeth Friedrich, Seok Jong Hong, Robert Galiano, Thomas Mustoe
Northwestern University Feinberg School of Medicine, Chicago, IL, USA

(RAPID FIRE POSTER)

M1.06 Could -79 °C SPRAY-TYPE CRYOTHERAPY BE AN EFFECTIVE MONOTHERAPY FOR THE TREATMENT OF KELOID?

Tae Hwan Park¹, Yun Joo Park²
¹CHA University, Seongnam-Si, Korea, Republic of, ²Hallym University, Anyang-Si, Korea, Republic of

(RAPID FIRE POSTER)

M1.07 RAMAN SPECTROSCOPY AND HPLC: IN VIVO AND EX-VIVO VALIDATION OF A COMBI-APPROACH FOR TESTING TRANSDERMAL DELIVERY OF COMPOUNDS IN WOUNDS AND SCARS

Rubinder Basson¹, Martin Isabelle², Weiping Li¹, Mohamed Baguneid³, David Reece², Ardeshir Bayat¹
¹University of Manchester, Manchester, United Kingdom, ²Renishaw, Gloucestershire, United Kingdom, ³Manchester University NHS Foundation Trust, Manchester, United Kingdom

P.FS01. DIFFERENTIAL REGULATION OF EXOSOME PRODUCTION BY MECHANICAL TENSION INFLUENCES FIBROGENIC PHENOTYPES

Alexander Blum¹, Xinyi Wang¹, Emily Steen¹, Hui Li¹, Monica Fahrenholtz¹, Natalie Templeman¹, Yao Ning¹, Paul Bollyky², Sundeep Keswani¹, Swathi Balaji¹

¹Baylor College of Medicine, Houston, TX, USA, ²Stanford University, Stanford, CA, USA

P.FS02. QUANTITATIVE INDEX FOR SKIN FIBROSIS: COMBINED OPTICAL COHERENCE TOMOGRAPHY WITH ULTRASOUND VALIDATED BY HISTOLOGY AND IMMUNOHISTOCHEMISTRY

Sara Ud-Din¹, Philip Foden², Mohsin Mazhari², Samer Al-Habba², Mohamed Baguneid², Ardeshir Bayat¹

¹University of Manchester, Manchester, United Kingdom, ²Manchester University NHS Foundation Trust, Manchester, United Kingdom

P.FS03. TOPICAL ADMINISTRATION OF LIPOSOME ENCAPSULATED STATINS REDUCED HYPERTROPHIC SCARRING. A NEW THERAPEUTIC OPTION

Seok Hong¹, Ping Xie¹, Shengxian Jia¹, XingGuo Cheng², Seok Hong¹, Robert D. Galiano¹, Thomas A. Mustoe¹

¹Northwestern University, Chicago, IL, USA, ²Southwest Research Institute, San Antonio, TX, USA

P.FS04. ALTERED SHEAR FORCES PRECIPITATE FIBROTIC REMODELING IN DISCRETE SUBAORTIC STENOSIS

Monica Fahrenholtz¹, Yao Ning¹, Marci Kang², Hui Li¹, Emily Steen¹, Lalita Wadhwa¹, Swathi Balaji¹, K. Jane Grande-Allen², Sundeep Keswani¹

¹Texas Children's Hospital, Houston, TX, USA, ²Rice University, Houston, TX, USA

P.FS05. PIRFENIDONE INHIBITS CONTRACTILE MACHINERY IN PROFIBROTIC HUMAN DERMAL MYOFIBROBLASTS

Adrienne R. Wells, Caroline L. Hall, Kai P. Leung

US Army Institute of Surgical Research, Fort Sam Houston, TX, USA

P.FS06. CHARACTERIZATION OF A NEW VARIABLE POROSITY WOUND DRESSING WITH ANTI-SCAR PROPERTIES

Collynn F. Woeller¹, Aubrey Woodroof², Patrick S. Cottler³, Stephen J. Pollock¹, Jane L. Gui³, Angela Pineros-Fernandez³, Constantine G. Harris¹, Richard P. Phipps¹

¹University of Rochester, Rochester, NY, USA, ²Permeaderm Inc., Carlsbad, CA, USA, ³University of Virginia, Charlottesville, VA, USA

P.FS07. PIRFENIDONE TREATMENT OF DEEP PARTIAL-THICKNESS BURNS IN C57BL/6 MICE

Jorge L. Medina, Ph.D., Eliza A. Sebastian, Andrea B. Fourcaudot, Rossella Dorati, Ph.D., Kai P. Leung, Ph.D.

United States Army Institute of Surgical Research, Fort Sam Houston, TX, USA

P.FS08. TOPICAL DELIVERY OF A FOCAL ADHESION KINASE INHIBITOR RESULTS IN ACCELERATED WOUND HEALING WITH REDUCED SCARRING IN A PORCINE WOUND MODEL

Sun Hyung Kwon, Kun Ma, Dominik Duscher, Jagannath Padmanabhan, Yixiao Dong, Mohammed Inayathullah, Jayakumar Rajadas, Geoffrey C. Gurtner

Stanford University, Stanford, CA, USA

P.FS09. DETERMINATION OF TRFS AND TIRNAS LEVELS IN HUMAN KELOIDS

Yixuan Zhao, Guo-You Zhang, Qing-Feng Li

Shanghai Jiaotong University, School of Medicine, Shanghai, China

P.FS10. HUMAN-LIKE HYPERTROPHIC SCARS IN LOOSE SKINNED ANIMALS VIA DYNAMIC CIRCUMFERENTIAL MECHANICAL TENSION

Cullen McCarthy, Paul McGaha, Noah Rozich, James Griffith, Jason Lees, James Tomasek, William Berry

University of Oklahoma Health Sciences Center, Oklahoma City, OK, USA

P.FS11. COMPUTATIONAL ANALYSIS IDENTIFIES PUTATIVE PROGNOSTIC BIOMARKERS OF PATHOLOGICAL SCARRING IN TRAUMATIC WOUNDS

Sridevi Nagaraja¹, Lin Chen², Luisa A. DiPietro², Jaques Reifman¹, Alexander Y. Mitrophanov¹

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GROWTH FACTORS

P.GRO01. PROTEASE RESISTANT GROWTH FACTOR FORMULATIONS FOR HEALING OF CHRONIC WOUNDS

Tabitha Boeringer¹, Lisa Gould², Piyush Koria¹

¹University of South Florida, Tampa, FL, USA, ²South Shore Hospital, Weymouth, MA, USA

P.GRO02. A NEW MECHANISM OF LATENT TGF-B1 PRESENTATION IN LUNG

Henna Karvonen¹, Monika Lodyga¹, Ehab Ayab², Kjetil Ask², Boris Hinz¹

¹University of Toronto, Toronto, ON, Canada, ²Firestone Institute for Respiratory Health, McMaster Immunology Research Center, McMaster University, Hamilton, ON, Canada

INFECTIONS & BIOFILMS

P.IB01. HUMAN CRYOPRESERVED PLACENTAL TISSUES INHIBIT WOUND ASSOCIATED BACTERIA BIOFILM FORMATION

Yong Mao¹, Anya Singh-Varma¹, Tyler Hoffman², Sandeep Dhall², Alla Danilkovitch², Joachim Kohn¹

¹New Jersey Center for Biomaterials, Rutgers University, Piscataway, NJ, USA, ²Osiris Therapeutics Inc., Columbia, MD, USA

P.IB02. STEM TOMOGRAPHY OF HYPER BIOFILM PRODUCING PERSISTENT PSEUDOMONAS AERUGINOSA

Subendu Sarkar¹, Binbin Deng², Subhadip Ghatak¹, Kanhaiya Singh¹, Piya Das Ghatak¹, Shomita Steiner¹, Sashwati Roy¹, Savita Khanna¹, Daniel Wozniak³, David W. McComb², Chandan K. Sen¹

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P.IB03. GENOMIC RESPONSES OF PSEUDOMONAS AERUGINOSA DURING EARLY AND BIOFILM INFECTION OF WOUNDS

S L Rajasekhar Karna¹, P D'Arpa², T Chen³, JQ Nguyen¹, KP Leung¹

¹US Army Institute of Surgical Research, JBSA Fort Sam Houston, TX, USA, ²The Geneva Foundation, Tacoma, TX, USA, ³The Forsyth Institute, Cambridge, MA, USA

P.IB04. PSEUDOMONAS AERUGINOSA BIOFILM INFECTION OF PARTIAL-THICKNESS BURN WOUNDS IN SPRAGUE-DAWLEY RATS

Kenneth S. Brandenburg, Alan J. Weaver, Jr., Liwu Qian, Tao You, Ping Chen, Rajasekh Karna, Andrea B. Fourcaudot, Eliza A. Sebastian, Johnathan J. Abercrombie, Uzziel Pineda, Kai P. Leung

US Army Institute of Surgical Research, JBSA FT Sam Houston, TX, USA

P.IB05. CHARACTERIZATION OF THE HOST RESPONSE TO PARTIAL-THICKNESS BURN WOUNDS FOLLOWING PSEUDOMONAS AERUGINOSA INFECTION IN A RAT BURN MODEL

Alan Weaver, Jr., Kenneth Brandenburg, Liwu Qian, Tao You, Ping Chen, Rajasekhar Karna, Andrea

Fourcaudot, Eliza Sebastian, Johnathan Abercrombie, Uzziel Pineda, Kai Leung DCTRTRD, USA-ISR, JBSA Fort Sam Houston, TX, USA

P.IB06. ORGANO-SELENIUM COATED POLYESTER BANDAGE INHIBITS BIOFILMS

Ted W. Reid, Ph.D.¹, Phat Tran, Ph.D.¹, Kenny Gallagher, B.A.²

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P.IB07. CHLORAPREP USE ALTERS SKIN MICROBIOME COMPOSITION

Sifon Ndon¹, Jane Xu¹, Tyler Rice¹, Biraja Dash¹, Michael Alperovich¹, Elizabeth Grice², Noah Palm¹, Henry Hsia¹

¹Yale University, New Haven, CT, USA, ²University of Pennsylvania, Philadelphia, PA, USA

P.IB08. MULTIDISCIPLINARY WOUND INFECTION GUIDELINE OPPORTUNITIES

Christopher Davey, MD, CWSP¹, Sammy Zakhary, MD, CWSP², Laura Bolton, PhD³, Kathy Gallagher, DNP, ARNPF⁴, Rebecca Bari, DPMc⁵, Jordan Bean, DPMc⁵, Tyler Reber, DPMc⁵, Kara Couch, MS, CRNP, CW⁶, Karen Laforet, MCISc(WH)⁷, Corrine McIsaac, PhD(c), RN⁸, Karen Napier, RN, BScN, CE⁹, Diana Vilar-Cmpte, MD, MSc¹⁰, Emily Zakhary¹¹, Michael Hermans, MD¹², Jennifer Hurlow, MSN, GNP¹³

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P.IB09. EFFECTIVE NON-CYTOTOXIC ANTIBIOFILM DISSOLVABLE DRESSING POWERED BY ULTRALOW LEVEL OF GALLIUM AND SILVER

Gaurav Pranami¹, Eric C. Crawford¹, Ankit Agarwal¹, Nicholas L. Abbott², Patricia R. Kierski², Charles J. Czuprynski², Jonathan F. McNulty², Michael J. Schurr³

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INFLAMMATION & IMMUNITY

P.II01. DETERMINING THE MECHANISM OF ACTION OF KERATIN & KAP BIOMATERIALS

Mitchell C. Sanders¹, Mia Sanders¹, Lindsay Poland¹, Tom Barrows², Thomas Serena³

¹Alira Health Boston LLC, Framingham, MA, USA, ²Cell Constructs I, LLC, Atlanta, GA, USA, ³Serena Group, Hingham, MA, USA

P.II02. DIABETES ALTERS MACROPHAGE POLARIZATION RESULTING IN PERSISTENT INFLAMMATORY RESPONSE

Lindel C. Dewberry, Carlos Zgheib, Junyi Hu, Maggie M. Hodges, Sarah A. Hilton, Junwang Xu, Kenneth W. Liechty

University of Colorado, Denver, CO, USA

NOVEL THERAPIES

P. NOV01. IMPROVED WOUND HEALING IN SWINE MODEL WITH CERIUM OXIDE NANOPARTICLE CONJUGATED WITH MICRORNA 146A

Sarah A. Hilton¹, Carlos Zgheib¹, Maggie M. Hodges¹, Lindel C. Dewberry¹, Sashwati Roy², Chandan Ken², Kenneth W. Liechty¹

¹University of Colorado, Aurora, CO, USA, ²Department of Surgery, Davis Heart and Lung Research Institute, Center for Regenerative Medicine and Cell Based Therapies and Comprehensive Wound Center, The Ohio State University Wexner Medical Center, Columbus, OH, USA

P. NOV02. A NOVEL NON-CONTACT ELECTRIC FIELD THERAPY ENHANCES ANGIOGENESIS AND WOUND HEALING IN PORCINE MODEL

Nava P. Rijal¹, Daniel Perry¹, Emma Stumpf¹, Andrei Kogan², Daria A. Narmoneva¹

¹University of Cincinnati, Department of Biomedical Engineering, Cincinnati, OH, USA, ²University of Cincinnati, Department of Physics, Cincinnati, OH, USA

P. NOV03. A NOVEL, STERILIZED MICROVASCULAR TISSUE PRODUCT IMPROVES HEALING IN A MURINE PRESSURE ULCER MODEL

Jeffrey M. Gimble¹, Trivia Frazier¹, Xiyang Wu¹, Claire Llamas², Ted Brown², Doan Nguyen³, Douglas Arm⁴, Dale Peterson⁴, Bruce Bunnell²

¹LaCell LLC, New Orleans, LA, USA, ²Tulane University, New Orleans, LA, USA, ³Ochsner Medical Center, New Orleans, LA, USA, ⁴Microvascular Tissues, San Diego, CA, USA

P. NOV04. FI2 SIRNA IN A CONCENTRATED POLOXAMER PLATFORM FOR ACUTE AND BURN WOUND HEALING

Brian ORourke¹, Adam Kramer², David Sharp²

¹MicroCures, Inc, Bronx, NY, USA, ²Albert Einstein College of Medicine, Bronx, NY, USA

P. NOV05. NEW WOUND CLASSIFICATION METHOD: DIRECT CODING SYSTEM FROM KOREA

Donghyeok Shin, Dongkun Jeon

Konkuk University Medical Center, Seoul, Korea, Republic of

OXYGEN/HYPOXIA

P.OX01. PIGMENT BASED DIFFERENTIAL REGULATION OF REDOX HOMEOSTASIS IN HYPERTROPHIC SCAR

Abdulnaser Alkhalil¹, Bonnie C. Carney¹, Taryn E. Travis², Seid Muhie³, Stacyann Miller³, Rasha Hammamieh⁴, Marti Jett⁴, Jeffrey W. Shupp¹

¹Medstar Health Research Institute, Washington, DC, USA, ²MedStar Washington Hospital Center, Washington, DC, USA, ³The Geneva Foundation, Fort Detrick, MD, USA, ⁴Integrative Systems Biology, US Army Center for Environmental Health Research, Fort Detrick, MD, USA

P.OX02. THE EFFECT OF FRACTIONATED ABLATIVE CARBON DIOXIDE LASER WITH LIDOCAINE SPRAY ON THE SURVIVAL OF SKIN FLAP IN RATS

Jun-Ho Lee, Kyujin Chung

Yeungnam University Hospital, Daegu, Korea, Republic of

REGENERATION

(RAPID FIRE POSTER)

M1.08 CONTRIBUTION OF INDIVIDUAL SATELLITE CELLS TO MUSCLE REGENERATION ASSESSED USING A CONFETTI MOUSE MODEL

Hans Heemskerk¹, N Suhas Jagannathan¹, Binh Phu Nguyen¹, Keshmarathy D/O Sacadevan², Paul Matsudaira², Peter TC So³, Lisa Tucker-Kellogg¹

¹Duke-NUS Medical School, Singapore, Singapore, ²National University of Singapore, Singapore, Singapore, ³Massachusetts Institute of Technology, Cambridge, MA, USA

P.REG01. DIRECT NEUROTIZATION OF DECELLULARIZED MUSCLE MATRIX LEADS TO ENHANCED MUSCLE REGENERATION AND NEURAL TISSUE INGROWTH

Mimi Wu Young¹, Hari Iyer², Seok Hong¹, Robert Galiano¹

¹Northwestern Feinberg School of Medicine, Chicago, IL, USA, ²McGill School of Medicine, Montreal, QC, Canada

P.REG02. MUSCLE INJURY AND REGENERATION WITH N-ACETYLCYSTEINE

Benyam P. Yoseph, Yu Zhou, Kathryn Moschouris, James Poteracki, Tracy Criswell, Shay Soker
Wake Forest Institute for Regenerative Medicine, Winston-Salem, NC, USA

P.REG03. GROWTH FACTOR CONTAINING HYALURONIC ACID GEL FOR HAIR FOLLICLE TRANSPLANTATION

Kristo Nuutila, Indranil Sinha, Dharaniya Sakthivel, David Varon, Doug Helm

Brigham and Women's Hospital, Boston, MA, USA

P.REG04. DECELLULARIZED FETAL TISSUE MATRIX ENHANCES IN SITU SKELETAL MUSCLE REGENERATION

Mimi Wu Young¹, Hari Iyer², Seok Hong¹, Robert Galiano¹

¹Northwestern Feinberg School of Medicine, Chicago, IL, USA, ²McGill School of Medicine, Montreal, QC, Canada

STEM CELLS

(RAPID FIRE POSTER)

M1.02 MECHANICAL EDUCATION IN VITRO ENHANCES REGENERATIVE CAPACITIES OF HUMAN MESENCHYMAL STEM CELLS IN VIVO

Marielle Walraven, Akosua Vilaysane, John E. Davies, Boris Hinz
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P.ST01. THE EFFECT OF HUMAN BONE MARROW MESENCHYMAL STEM CELL-CONDITIONED MEDIUM ON HEALING OF AN INFECTED WOUND MODEL IN DIABETIC RATS

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P.ST02. THE EFFECTS OF COMBINED PHOTOBIO-MODULATION AND HUMAN BONE MARROW MESENCHYMAL STEM CELL-CONDITIONED MEDIUM ON WOUND HEALING IN DIABETIC RATS

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