Sunday-March 5th

12:30-7:00 PM  Meeting Registration  Marquis
Note: Hotel check-in available after 4 PM  Ballroom
Foyer

1:30- 3:30 PM  General Session 1 - Craniofacial  Lecture Hall

Organizer:
Charles Sfeir, DDS, PhD
Associate Dean of Research - School of Dental Medicine
Associate Professor, Clinical and Translational Science Institute
Associate Professor, School of Dental Medicine and the School of Engineering
Founding Director of the Center for Craniofacial Regeneration
University of Pittsburgh

Introduction / Overview of the Challenges in the Craniomaxillofacial Region
Charles Sfeir DDS, PhD

Clinical Challenges of the Temporomandibular Joint and Regenerative Strategies
Alejandro Almarza, PhD
Associate Professor in Oral Biology
University of Pittsburgh School of Dental Medicine

Clinical Challenges of Bone Augmentation and Peri-Implantitis and Current Regenerative Strategies
Kelly L. Williams, MS, DMD
Assistant Professor Director
Advanced Dental Education Residency Program in Periodontics
University of Pittsburgh

and
Andrew Brown
Graduate Student Researcher
School of Dental Medicine
Center for Craniofacial Regeneration
University of Pittsburgh

Beyond Growth Factors: Inorganic Ions as Drivers of Cell Differentiation
Dobrawa Napierala, PhD
Associate Professor
School of Dental Medicine - Center for Craniofacial Regeneration
University of Pittsburgh

and
Charles, Sfeir, DDS, PhD

Challenges and Strategies for Pulp Treatment
Herbert Ray Jr., DMD
Assistant Professor of Endodontics
Director, Graduate Endodontic Residency Program
University of Pittsburgh School of Dental Medicine

_Scaffolds Used in Craniomaxillofacial Regeneration and Challenges_
David Kohn, PhD
Professor
Departments of Biologic and Materials Sciences and Biomedical Engineering
University of Michigan

3:45- 5:45 PM  
**General Session 2 - Cardiovascular**  
Lecture Hall
Organizer:
Robert L Kormos MD, FRCS(C), FACS, FAHA
Brack G. Hattler Professor of Cardiothoracic Transplantation
Professor Cardiothoracic Surgery and Bioengineering
Department of Cardiothoracic Surgery
Heart and Vascular Institute
University of Pittsburgh Medical Center

*Reducing the Injury from Myocardial Infarction: Engineered Biohybrid Cardiac Patch*
Antonio D’Amore, PhD
Research Assistant Professor
Wagner Laboratory-McGowan Institute
University of Pittsburgh

*Designing a Novel Bioengineered Vascular Graft that Resists Platelet Adhesion*
Luka Pocivavsek, MD, PhD
General Surgery Resident
University of Pittsburgh Medical Center

*Challenges and Milestones in Building the Next Pediatric Left Ventricular Assist Device*
Mahesh Sharma, MD
Assistant Professor of Cardiothoracic Surgery
University of Pittsburgh School of Medicine

*Lessons Learned in Molecular Biology, Bioengineering and Clinical Cardiology: Changing How the HVI Approaches Clinical Problems*
Marc A. Simon, MD, MS, FACC
Associate Professor of Medicine, Bioengineering, and Clinical Translational Science
Director, Heart Failure Research / Clinical Hemodynamics Core Facility
Director, Vascular Clinical and Translational Research Center
Vascular Medicine Institute
University of Pittsburgh Medical Center

*Mechanical Circulatory Support at UPMC: How Science and Clinical Care Provide a Vision for the Future*
Christopher Sciortino, MD, PhD
Assistant Professor of Cardiothoracic Surgery
University of Pittsburgh School of Medicine
Surgical Director of the UPMC Advanced Heart Failure Center

3:45- 5:45 PM  Trainee Session - Pathways to a Career in Academia  Sequoia
Organizers:
Satdarshan (Paul) Singh Monga, MD
Endowed Research Chair in Experimental Pathology and the Vice-Chair
of the Division of Experimental Pathology, Department of Pathology,
University of Pittsburgh
and
Andrew Duncan, PhD
Assistant Professor Department of Pathology
University of Pittsburgh

Presenters:
Gelsy Torres-Oviedo, PhD
Assistant Professor of Bioengineering
Swanson School of Engineering
University of Pittsburgh

Takashi Daniel Yoshida Kozai, PhD
Assistant Professor of Bioengineering
Swanson School of Engineering
University of Pittsburgh

Kari N. Nejak-Bowen, PhD
Assistant Professor of Pathology
University of Pittsburgh School of Medicine

Andrew W. Duncan, PhD
Assistant Professor of Pathology
University of Pittsburgh School of Medicine

4:00- 6:15 PM  Poster Setup  Marquis Ballroom
Organizer:
Andrew W. Duncan, PhD
Assistant Professor of Pathology
University of Pittsburgh School of Medicine
Poster Prizes sponsored by sciVelo
Buffet in Poster Session Area
Marquis Ballroom

Clinical Outcomes Session
Marquis Ballroom
Moderator:
Charles Sfeir, DDS, PhD
Associate Dean of Research - School of Dental Medicine,
Associate Professor in the Clinical and Translational Science Institute
Associate Professor in the School of Dental Medicine and the School of Engineering
Founding Director of the Center for Craniofacial Regeneration

Speaker:
Bernard J. Costello, MD, DMD, FACS
Professor and Chief of the Division of Craniofacial and Cleft Surgery
Fellowship Program Director
Department of Oral and Maxillofacial Surgery
Associate Dean of Faculty Affairs, and Co-Director of the Dentofacial Interdisciplinary Team, School of Dental Medicine
University of Pittsburgh

Monday-March 6th

Breakfast
Marquis Ballroom

Director’s Welcome and Overview
Lecture Hall
William R. Wagner, PhD
Director of the McGowan Institute for Regenerative Medicine
Professor of Surgery, Bioengineering and Chemical Engineering
University of Pittsburgh

Keynote Lecture
Dietrich A. Stephan, PhD
Chairman and Professor, Department of Human Genetics
School of Public Health
Associate Director for Translation and Population Health
Institute for Personalized Medicine
University of Pittsburgh

Break
General Session 3 - Manufacturing and NSF-ERC for Revolutionizing Metallic Biomaterials

Organizer:
David Vorp, PhD
Associate Dean for Research
Swanson School of Engineering
University of Pittsburgh
John A. Swanson Professor of Bioengineering
Professor, Departments of Cardiothoracic Surgery, Surgery, and the Clinical & Translational Sciences Institute
University of Pittsburgh

Manufacturing
Design Optimization Tool Development for Additive Manufacturing
Albert To, PhD
Associate Professor
CNG Faculty Fellow
Director, ANSYS Additive Manufacturing Research Laboratory
Department of Mechanical Engineering & Materials Science
University of Pittsburgh Swanson School of Engineering

3D Printing of Soft and Biological Materials
Adam W Feinberg, PhD
Associate Professor
Department of Materials Science & Engineering
Department of Biomedical Engineering
Carnegie Mellon University

Manufacturing/ERC
Advanced Manufacturing and Applications of Biodegradable Metallic Alloys – Challenges and Opportunities
Prashant Kumta, PhD
Edward R. Weidlein Chair Professor of Bioengineering
Professor of Bioengineering, Chemical and Petroleum Engineering and Mechanical Engineering and Materials Science
Director, Center for Complex Engineered Multifunctional Materials
Swanson School of Engineering
Department of Oral Biology, School of Dental Medicine
McGowan Institute of Regenerative Medicine
University of Pittsburgh

ERC
Photo-Chemical Etching as a New Tool for Fabricating Vascular Stents. Case Study: Magnesium Biodegradable Stent
Vesselin N. Shanov, PhD
Professor, Director of the Nanoworld Laboratories
Department of Biomedical, Chemical and Environmental Engineering
University of Cincinnati
Mg Biocompatibility and Testing of Absorbable Metals
Aaron Barchowsky, PhD
Professor
Department of Environmental and Occupational Health
University of Pittsburgh

10:15 AM-12:15 PM Strategic Planning Session A - Craniomaxillofacial Regeneration Grand Ballroom D
Organizer: Charles Sfeir, DDS, PhD
NIH/NIDCR has established a multi-institutional resource center to support validation, manufacturing, and preclinical testing of tissue engineering and regenerative medicine (TE/RM) therapies for dental, oral and craniofacial tissues. The Michigan/Pittsburgh/Wyss consortium has been designated a DOC Resource Center and is prepared to begin conceptualizing ideas for projects that demonstrate the development of translational therapies in support of DOC areas that have the potential to lead to FDA submission. This workshop is intended to generate and discuss new ideas, approaches, concepts or techniques which catalyze clinical translation leading to the submission of Investigational New Drug (IND)/Investigational Device Exemption (IDE) applications to the U.S. Food and Drug Administration to eventually impact clinical practice.

All investigators and clinicians are welcome to attend and discuss their ideas.

Please note strategic planning session may be recorded for administrative purposes.

10:15 AM-12:15 PM Strategic Planning Session B - Cardiovascular Grand Ballroom A
Organizer: Robert Kormos, MD, FRCS(C), FACS, FAHA

Please note strategic planning session may be recorded for administrative purposes.

12:15-1:30 PM Lunch Marquis Ballroom

1:30-3:30 PM General Session 4 - Wound Healing Lecture Hall
Organizer: J. Peter Rubin, MD, FACS
Chair-Department of Plastic Surgery, UPMC Endowed Professor of Plastic Surgery, and Professor of Bioengineering University of Pittsburgh

Transport Patterns of Anti-TNF-α in Burn Wounds: Therapeutic Implications of Hyaluronic Acid Conjugation
Newell Washburn, PhD
Associate Professor of Chemistry and Biomedical Engineering Carnegie Mellon University
Urinary Bladder Matrix for the Management of Complex Wounds
Thomas Gilbert, PhD
Chief Science Officer
ACell

Controlled Topical Drug Delivery for Wound Healing
Ellen Gawalt, PhD
Chair of the Department of Chemistry and Biochemistry
Hillman Distinguished Professor
Professor of Chemistry and Biochemistry
Duquesne University
and
Wilson Meng, PhD
Associate Professor, Pharmaceutical Sciences
Duquesne University

Matrix Control of Cellular-Transplantation to Improve Scarring Outcomes Affliction
Cecelia Yates, PhD
Assistant Professor
Department of Health Promotion and Development
University of Pittsburgh School of Nursing

1:30- 3:30 PM Strategic Planning Session C - Manufacturing
Organizer:
David Vorp, PhD

This session will focus on the manufacturing infrastructure necessary to implement advances in biomedical research, with an emphasis on regenerative medicine and tissue engineering. Manufacturing in this case is defined as the techniques and processes to create materials and manipulate them into forms useful for biomedical application, as well as the devices required to produce those materials and apply them. In this context, materials can be organic (cells, tissues, extracellular matrix, etc.) or inorganic (synthetics, polymers, metals, etc.), and can be considered for either in vivo or external application. Of particular interest is the ability to scale these manufacturing processes / techniques to levels suitable for widespread application.

Please note strategic planning session may be recorded for administrative purposes.

1:30- 3:30 PM Strategic Planning Session D – DOD Needs
Organizer:
Ronald Poropatich, MD
Executive Director-Center for Military Medicine Research
Professor of Medicine - Division of Pulmonary, Allergy, and Critical Care Medicine - University of Pittsburgh
ECMO Research Grant from DoD and Lessons Learned
Mauricio Rojas, MD
Associate Professor and Scientific Director
Simmons Center for Interstitial Lung Diseases
University of Pittsburgh

3:30-3:45 PM Break

3:45-5:45 PM General Session 5 - Burns
Organizer: Jörg Gerlach, MD, PhD
Professor Department of Surgery and Bioengineering,
Swanson School of Engineering,
University of Pittsburgh

A Practical Guide to Attracting Angel Investment
(Attendance for all Trainees and CATER Students is recommended)
Jay Bhogal
Vector Asset Management
Vancouver, Canada

Active Wound Dressings
Neil Mehta
Founder, President & CEO
GlobalOne Sciences
Dayton, OH

Skin Cell-Spray Autografting; A Stem Cell Therapy’s Journey from Lab to Commercial Venture
Thomas Bold
RenovaCare Inc.
New York, NY

Regulatory Aspects To Be Considered for Young Investigators, When Planning Clinical Translation: Do’s and Don’t’s”
Patsy J. Trisler, JD, RAC
Regulatory Consulting, Medical Devices
(Attendance for all Trainees and CATER Students is recommended)

Human Bionic Lab Platform for in vitro Studies/Skin
Jörg Gerlach, MD, PhD
3:45-5:45 PM  
**Strategic Planning Session E – Wound Healing**  
Grand Ballroom A
Organizer:
J. Peter Rubin, MD, FACS

This session will be facilitated in partnership with ACell. ACell is a leading regenerative medicine company that develops and manufactures products designed to facilitate the body’s ability to repair and remodel tissue. This session will focus on acute complex wounds (e.g., wounds with exposed tendons, hardware, or avascular structures, wounds with necrotizing fasciitis, wounds associated with hidradenitis), pressure ulcers, diabetic foot ulcers, deep partial-thickness burns, closure of surgical site incisions.

*This session is open to McGowan Affiliated faculty only*

*Please note strategic planning session may be recorded for administrative purposes.*

3:45-5:45 PM  
**Strategic Planning Session F - NSF-ERC for Revolutionizing Metallic Biomaterials**  
Grand Ballroom D
Organizer:
Richard Hoff  
McGowan Institute for Regenerative Medicine  
University of Pittsburgh

*Please note strategic planning session may be recorded for administrative purposes.*

6:15- 7:45 PM  
**Buffet Dinner**  
Marquis Ballroom

7:45- 9:15 PM  
**Dessert in Poster Session Area**  
**Poster Presentations**  
Poster Prizes sponsored by sciVelo  
Marquis Ballroom

**Tuesday March 7th**

7:00-8:00 AM  
**Breakfast**  
Marquis Ballroom

8:00-10:00 AM  
**General Session 6 – Cell Therapy**  
Lecture Hall
Organizer:
J. Peter Rubin, MD, FACS  
Chair Department of Plastic Surgery,  
UPMC Endowed Professor of Plastic Surgery, and  
Professor of Bioengineering  
University of Pittsburgh
Adipose Therapies- The Healing Power of Fat
J. Peter Rubin, MD, FACS

The Cell Therapy Landscape at Pitt and UPMC and Accelerating Clinical Delivery
Lauren Kokai, PhD
Research Assistant Professor
Department of Plastic Surgery
University of Pittsburgh

Processing for Clinical Cell Therapies –What Everyone Needs to Know
Albert Donnenberg, PhD
Professor, Infectious Disease and Microbiology
Graduate School of Public Health and
Professor of Medicine
University of Pittsburgh School of Medicine

Differentiated iPSC for Disease Modeling, Bioengineering and Therapeutic Strategies
David Mann, PhD
Global Business Director
Drug Discovery and Bioengineering
Cellular Dynamics International, Inc.

Cell Therapy Tools Development: A Workflow-Based Approach
Mark Powers, PhD
Director, Research and Development< Cell Biology
Thermos Fisher Scientific

8:00-10:00 AM Strategic Planning Session G – Burns (Session 1) (Closed Session: See Jörg Gelach to arrange participation)
Organizer: Jörg Gerlach, MD, PhD

Grand Ballroom D

Please note strategic planning session may be recorded for administrative purposes.

10:00-10:15 AM Break

10:15 AM-12:15 PM General Session 7 - Vision and Hearing
Organizer:
Jeffrey Gross, PhD
Professor of Ophthalmology and the E. Ronald Salvitti Chair in Ophthalmology - Department of Ophthalmology
Director of the Louis J. Fox Center for Vision Restoration and of the Ocular Development, Disease, and Regeneration Laboratory
University of Pittsburgh School of Medicine
Challenges and Opportunities in Ocular Drug Delivery
Morgan Fedorchak, PhD
Departments of Ophthalmology, Chemical Engineering, and Clinical & Translational Sciences
University of Pittsburgh

Mitochondrial Transfer between Mesenchymal Stem Cells and Corneal Epithelial Cells
Ladan Espandar, MD, MS
Cornea, Cataract and External Disease Services
Refractive Surgery Service
University of Pittsburgh School of Medicine

The Role of Biomechanics in the Racial/Ethnic Disparity of Primary Open Angle Glaucoma
Jonathan Vande Geest, PhD
Department of Bioengineering,
University of Pittsburgh Swanson School of Engineering

Pharmacological Intervention of Rhodopsin Homeostasis and Implication to Retinal Degeneration
Yuanyuan Chen, PhD
Department of Ophthalmology, Case Western Department of Ophthalmology (in 2017)
University of Pittsburgh

Chasing Phantom Sounds - Understanding and Treating Tinnitus
Thanos Tzounopoulos, PhD
Auditory Physiology
University of Pittsburgh

10:15 AM-12:15 PM Strategic Planning Session H - Burns (Session 2) (Closed Session: See Jörg Gelach to arrange participation)
Organizer:
Jörg Gerlach, MD, PhD
Professor Department of Surgery and Bioengineering, Swanson School of Engineering,
University of Pittsburgh

Please note strategic planning session may be recorded for administrative purposes.
10:15 AM-12:15 PM  **Strategic Planning Session I - Pediatric**  
Organizer:  
George Gittes, MD  
Benjamin R. Fisher Chair of Pediatric Surgery and  
Surgeon-in-Chief, Children’s Hospital of Pittsburgh,  
Director of Surgical Research, Children’s Hospital of Pittsburgh  
Professor of Surgery and Pediatrics,  
University of Pittsburgh School of Medicine  

**Grand Ballroom A**  

**Theme: “Bioscaffolds for Tissue Regeneration and Injury Recovery”**  

Materials used for scaffold construction must be chosen appropriately to minimize adverse reaction and maximize cell adhesion and differentiation. This strategic planning workshop will highlight three forms of scaffold materials: extracellular matrix; metallic biomaterials; and polymers. Investigators from McGowan will provide an overview of each technology and then engage in an open discussion with the clinicians, scientists and engineers in the audience on how these platform technologies could be applicable to various clinical needs for pediatric patients.

All retreat registrants are welcome to attend.  
**Speakers:**  

- **Extracellular Matrix Technology**  
  Stephen Badylak, DVM, PhD, MD  
  Deputy Director, McGowan Institute for Regenerative Medicine  
  University of Pittsburgh  

- **Novel Degradable Ultra High Ductility (UHD) Alloys for Pediatric Stent Applications**  
  Prashant Kumta, PhD  
  Edward R. Weidlein Chair Professor  
  University of Pittsburgh Swanson School of Engineering  

- **Synthetic Polymers for Tissue Regeneration**  
  Chelsea Stowell, PhD  
  Department of Bioengineering  
  University of Pittsburgh Swanson School of Engineering  

*Please note strategic planning session may be recorded for administrative purposes.*

10:15 AM-12:15 PM  **Trainee Session - Pathways to a Career in Industry**  
Organizer:  
Kacey Marra, PhD  
Associate Professor,  
Departments of Plastic Surgery and Bioengineering  
Director, Plastic Surgery Research Laboratory  
University of Pittsburgh  

**Sequoia**  
(2nd Floor)
Presenters:

Lauren Kokai, PhD  
Formerly Allergan, Inc.  
Currently Plastic Surgery,  
University of Pittsburgh School of Medicine

Alicia DeFail Baumberger, PhD  
Abbott  
Pleasanton, CA

Chris J. Medberry, PhD  
DePuy Synthes Companies of Johnson and Johnson  
West Chester, PA

12:15-1:30 PM  
**Lunch**  
Marquis Ballroom  
Poster session awards presented by  
Andrew Duncan, PhD  
Awards sponsored by sciVelo

1:30-3:30 PM  
**Session**  
Sequoia  
(2nd Floor)  
Understanding the Grant Lifecycle: Tips for Effective  
Proposal Submission and Project Management for New Investigators  
Organizer:  
Brian Smith, McGowan Institute Finance Office

1:30-3:30 PM  
**Strategic Planning Session J - Vision and Hearing**  
Grand Ballroom D  
Organizer:  
Jeffrey Gross, PhD  
Professor of Ophthalmology and the E. Ronald Salvitti Chair in Ophthalmology - Department of Ophthalmology  
Director of the Louis J. Fox Center for Vision Restoration and of the Ocular Development, Disease, and Regeneration Laboratory  
University of Pittsburgh School of Medicine

*Please note strategic planning session may be recorded for administrative purposes.*
1:30-3:30 PM Strategic Planning Session K- Cell Therapy
Grand Ballroom A
Organizer:
J. Peter Rubin, MD, FACS
Chair Department of Plastic Surgery,
UPMC Endowed Professor of Plastic Surgery, and
Professor of Bioengineering
University of Pittsburgh

Enabling Cell Therapy from Concept through Commercialization
Bryan Poltilove, PhD
General Manager, Cell Therapy
Thermo Fisher Scientific

The objective of this session will be to discuss and debate the enablement of cell therapy as a treatment modality, and to share current and emerging technologies/capabilities in this rapidly expanding field. Thermo Fisher Scientific will share a brief overview of how it has effectively partnered with customers in the area of Cell Therapy, including a capabilities overview, case studies, and a high-level roadmap of development areas.

This session is open to McGowan Affiliated faculty only

Please note strategic planning session may be recorded for administrative purposes.

3:30 PM Departure