2013 McGowan Retreat
Nemacolin Woodlands Resort

Program Chair-Kacey Marra, PhD

Thursday March 7, 2013

Reception and Poster Session

6:00 PM Meeting Registration Open Marquis Foyer

7:00 PM Reception Marquis Ballroom
Poster Session and Hors d'oeuvres
Chair and Organizer: Andrew Duncan, PhD
McGowan Institute for Regenerative Medicine
Assistant Professor of Pathology
University of Pittsburgh

8:30 PM Marquis Ballroom
Chair and Organizer: J. Peter Rubin, MD, FACS,
Chief and Associate Professor, Division of Plastic and
Reconstructive Surgery
University of Pittsburgh
Co-Director, Adipose Stem Cell Center
Co-Director, Aesthetic Plastic Surgery Center
University of Pittsburgh Medical Center

Clinical Translation of Work in the Area of Skin Cell Based Therapy Developments
Jörg C. Gerlach, MD, PhD, Professor of Surgery

Fat Grafting for Facial Reconstruction
J. Peter Rubin, MD, FACS

9:30 PM Wrap Up
Friday March 8, 2013

7:00 a.m.  Breakfast  Marquis Ballroom

8:00 a.m.  Plenary Session  Lecture Hall

Welcome and Introductions
William R. Wagner, PhD – Director McGowan Institute
Professor of Surgery, Bioengineering and Chemical Engineering
University of Pittsburgh

McGowan Institute Distinguished Lecture
Mesenchymal Stem Cells for Treatment of Graft-versus-Host Disease
Katarina Le Blanc, MD, PhD
Professor of Clinical Stem Cell Research
Department of Laboratory Medicine
Karolinska Institute, Sweden

9:30 a.m.  Break

10:00 a.m.  Concurrent Sessions

A.  Therapeutic Liver Regeneration  Lecture Hall
Chair and Organizer: Andrew Duncan, PhD
McGowan Institute for Regenerative Medicine
Assistant Professor of Pathology
University of Pittsburgh

Wnt signaling in Liver Regeneration: Novel Advances and Implications
Satdarshan (Paul) Singh Monga, MD
Associate Professor, Pathology and Medicine
University of Pittsburgh School
Assistant Professor, Gastrointestinal Oncology
University of Pittsburgh Cancer Institute

A Novel Zebrafish Model of Liver Regeneration
Donghun Shin, PhD
Assistant Professor of Developmental Biology
University of Pittsburgh

Whole Organ Assembly: Moving Toward Liver Transplantation on Demand
Alejandro Soto-Gutierrez, MD, PhD
Assistant Professor of Pathology
University of Pittsburgh
Growing Surrogate Liver in Lymph Nodes
Eric Lagasse, PharmD, PhD
Associate Professor of Pathology
University of Pittsburgh

Humanized Spheroid Reservoir Bioartificial Liver
Scott L. Nyberg, MD, PhD
Professor of Surgery
Artificial Liver Program Director
Mayo Clinic

B. Brain Injury Repair

Grand Ballroom

Chair and Organizer: Michel Modo, PhD
Associate Professor, Department of Radiology
University of Pittsburgh

Pluripotent stem cells for CNS and ocular regeneration
Igor Nasonkin, PhD
Department of Ophthalmology and Fox Center for Vision Restoration
University of Pittsburgh

Inductive Biological Scaffolds for CNS Applications
Stephen Badylak, DVM, PhD, MD
Professor, Department of Surgery
Deputy Director and Director-Preclinical Studies, McGowan Institute for Regenerative Medicine-University of Pittsburgh

Tissue Engineering in the Stroke-Damaged Brain
Michel Modo, PhD
Associate Professor, Department of Radiology
University of Pittsburgh

Pharmacotherapies for Chronic TBI
Edward Dixon, PhD
Professor of Neurological Surgery, Anesthesiology, Neurobiology & Physical Medicine and Rehabilitation
The Neurotrauma Chair in Neurosurgery
Vice Chairman, Research Director, Brain Trauma Research Center
University of Pittsburgh

12:00 p.m. Lunch

Marquis Ballroom
1:30 p.m.  

**Concurrent Sessions**

A. **Ophthalmology-Fox Center for Vision Restoration**  
   **Lecture Hall**

   Co-Chairs and Organizers:
   Igor Nasonkin, PhD
   Dr. E. Ronald Salvitti Assistant Professor
   University of Pittsburgh
   Assistant Director, the Louis J. Fox Center for Vision Restoration

   Robert Hendricks, PhD
   Joseph F. Novak Professor and Vice-Chair for Research
   Director, Ophthalmology & Visual Sciences Research Center
   Departments of Ophthalmology, Immunology, Microbiology and Molecular Genetics
   University of Pittsburgh School of Medicine

   _A novel gene that identifies limbal stem cells for corneal regeneration_
   Bruce Ksander, PhD (30 minutes)
   Associate Scientist, Schepens Eye Research Institute, and
   Associate Professor, Harvard Medical School

   _How the Blind Brain Reacts to Visual Input_
   Amy C. Nau, OD, FAAO (30 minutes)
   Assistant Professor of Ophthalmology
   Director of Contact Lens and Low Vision Service
   Director, UPMC Eye Center Optical Shops
   University of Pittsburgh School of Medicine

   _Reverse Engineering of the Outflow Tract_
   Nils A. Loewen, MD, PhD (30 minutes)
   Assistant Professor of Ophthalmology
   Director, Glaucoma and Anterior Segment Surgery Service
   University of Pittsburgh School of Medicine

   _Bioengineering the Corneal Endothelium_
   Rachelle Palchesko, PhD (15 minutes)
   OTERO Fellow-Laboratory of Adam Feinberg, PhD
   Carnegie Mellon University
Development of Noninvasive, Controlled Release Therapeutics for Glaucoma
Morgan Fedorchak, PhD (15 minutes)
OTERO Fellow, Laboratory of Steven Little, PhD
Assistant Research Professor, Swanson School of Engineering
University of Pittsburgh

B. Modeling of Critical Illness

Grand Ballroom

Co-Chairs and Organizers: Michael Pinsky, MD
Professor and Vice Chair for Academic Affairs
Director, Cardiopulmonary Research Laboratory
Director, NRSA Research Training Program
University of Pittsburgh

Gilles Clermont, MD
Associate Professor of Critical Care Medicine
Associate Professor of Mathematics
Associate Professor of Industrial Engineering
Associate Professor of Clinical and Translational Science
University of Pittsburgh

Defining Cardiorespiratory State Using a Fused Parameter from Routine Non-Invasive Monitoring to Improve Event Detection
Michael R. Pinsky, MD Dr hc
Professor and Vice Chair for Academic Affairs
Director, Cardiopulmonary Research Laboratory
Director, NRSA Research Training Program
University of Pittsburgh

From States to Physiotypes
Gilles Clermont, MD, MSc
Associate Professor of Critical Care Medicine
Associate Professor of Mathematics
Associate Professor of Industrial Engineering
Associate Professor of Clinical and Translational Science
University of Pittsburgh

Machine Learning Approach to Model Physiologic Data Streams
Artur Dubrawski, PhD
Sr Systems Scientist/Adj Professor MISM
Robotics Institute
Carnegie Mellon University
Mortality Reduction by Heart Rate Characteristic Monitoring in Very Low Birth Weight Neonates: A randomized trial
J. Randall Moorman, MD
Professor of Medicine, Biomedical Engineering and Molecular Physiology and Biological Physics
University of Virginia

C. Craniofacial

Sequoia Room (2nd Floor)
Organizer and Chair: Charles Sfeir, DDS, PhD
Associate Professor, Department of Oral Medicine and Pathology
University of Pittsburgh

Biomineralization Principles as a Platform for Tissue Regeneration
David H. Kohn, PhD
Professor, Departments of Biologic and Materials Sciences and Biomedical Engineering
University of Michigan School of Dentistry

Growth Factor Therapies for Craniofacial Repair: Considerations for Therapeutic Design
Gregory Cooper, MD, PhD
Professor of Biomedical Informatics
Vice Chair of Department of Biomedical Informatics
University of Pittsburgh

Clinical Tissue Engineering of the Tooth Pulp using Revascularization Approaches
Herbert Ray, DDS
Assistant Professor Restorative Dentistry/Comprehensive Care
University of Pittsburgh

What the Researcher Should Know about Good Laboratory Practice in Nonclinical Trials
Patsy Simon, RN, BS, CCRC
Director, Clinical Trial Operations
UPMC Center for Innovation in Restorative Medicine (CIRM)
Department of Plastic Surgery, University of Pittsburgh

3:30 p.m. Break

4:00 p.m. Poster Session Marquis Ballroom
Chair and Organizer: Andrew Duncan, PhD
Assistant Professor of Pathology
McGowan Institute for Regenerative Medicine
Dinner
Program: Health Care Reform is Here: Daunting Challenges and Great Opportunities
Steven D. Shapiro, MD
Executive Vice President, UPMC
Chief Medical and Scientific Officer
President, Physician Services Division-UPMC

Saturday March 9, 2013
7:00 a.m. Breakfast Marquis Ballroom

8:00 a.m. Concurrent Sessions

A. Regenerative Medicine-Based Clinical Trials Lecture Hall
Chair and Organizer: Newell Washburn, PhD, Carnegie Mellon
Associate Professor of Chemistry, Biomedical Engineering and
Materials Science & Engineering (courtesy)
Carnegie Mellon University

Strategies for Moving Allogenic Blood Plasma Based Biomaterials to the Clinic
Phil Campbell, PhD
Research Professor, Institute for Complex Engineered Systems
Carnegie Mellon University

A Regenerative Medicine Approach to Functional Skeletal Muscle Reconstruction
Stephen Badylak, DVM, MD, PhD
Professor, Department of Surgery
Deputy Director and Director-Preclinical Studies, McGowan Institute for Regenerative Medicine-University of Pittsburgh

Center for Innovation in Restorative Medicine
J. Peter Rubin, MD, FACS
Chief and Associate Professor, Division of Plastic and Reconstructive Surgery
University of Pittsburgh
Co-Director, Adipose Stem Cell Center
Co-Director, Aesthetic Plastic Surgery Center
University of Pittsburgh Medical Center

From Goo to Great
Glenn Prestwich, PhD
Presidential Professor of Medicinal Chemistry and
Research Professor of Biochemistry
University of Utah
B. Free Radical Biology Concerns in Regenerative Medicine
   Grand Ballroom

Chair and Organizer: Julie Phillippi, PhD
Assistant Professor Department of Cardiothoracic Surgery
University of Pittsburgh

*Introduction/ROS Mechanisms in BAV-Associated Aortopathy*
Julie Phillippi, PhD

*Practiced at the Art of Deception: Detection and Quantification of Free Radicals and Reactive Species*
Eric Kelley, PhD
Assistant Professor, Department of Anesthesiology
Director - ROS Core, Vascular Medicine Institute
University of Pittsburgh

*Oxidative Stress and Diabetic Wound Healing*
Jiemei Wang, PhD
Research Associate, University of Pittsburgh Medical Center
Research Assistant, Veterans Affairs Pittsburgh Healthcare System

*Use of Contemporary Optical Imaging to Reveal ROS-Mediated Pathways Regulating Vascular Contractile Function*
Claudette St. Croix, PhD
Assistant Professor
Department of Occupational and Environmental Health
University of Pittsburgh

10:00 a.m.  **Break**

10:30 a.m.  **Concurrent Sessions**

A. **Veterinary Medicine and Regenerative Medicine**  Lecture Hall
   Chair and Organizer: Jon Cheetham, VetMB, PhD, DACVS
   Research Scientist
   Department of Clinical Sciences
   Cornell University, College of Veterinary Medicine

   *Blinded Randomized Controlled Trial of Olfactory Ensheathing Cells for Clinical Canine Spinal Cord Injury*
   Nick Jeffery, BVSc, PhD, Diplomate ECVS, ECVN, SAS, FRCVS
   Professor, Neurology & Neurosurgery
   Veterinary Clinical Sciences
   Iowa State University
Biologics for Regenerative Medicine
Lisa Fortier, DVM, PhD
Associate Professor of Large Animal Surgery
Cornell University

Exploratory Study of the Application of a Regenerative Medicine Approach to Reconstruction of the Equine Upper Airway
Bryan Brown, PhD
McGowan Institute for Regenerative Medicine
Assistant Professor, Department of Bioengineering
University of Pittsburgh

Mesenchymal Stem Cell Clinical Trials for Feline Chronic Kidney Disease
Jessica Quimby, DVM
Department of Clinical Sciences
Colorado State University

B. SKIN WOUND HEALING--Latest Tissue Engineering/Regenerative Medicine Approaches

Co-Chairs and Organizers: Patricia Hebda, PhD
Professor of Otolaryngology and Pathology
Adjunct Professor of Speech and Communication Disorders
University of Pittsburgh
Director, Otolaryngology Wound Healing Research Program
Children’s Hospital of Pittsburgh

Jörg Gerlach, MD, PhD
Professor of Surgery and Bioengineering
University of Pittsburgh

Introduction to the Session
Patricia Hebda, PhD (5 min)
Professor of Otolaryngology and Pathology
Adjunct Professor of Speech and Communication Disorders
University of Pittsburgh
Director, Otolaryngology Wound Healing Research Program
Children’s Hospital of Pittsburgh
Considerations for Automated Fabrication of Tissue-Engineered Skin Substitutes
Steven Boyce, PhD (30 min)
University of Cincinnati
Professor, Department of Surgery, College of Medicine
Adjunct Professor, Department of Biomedical Engineering, College of Engineering
Senior Investigator, Research Department Shriners Burns Hospital

Regenerative Skin Progenitors
Jörg Gerlach, MD, PhD (15 min)
Professor of Surgery and Bioengineering
University of Pittsburgh

More Than One Way to RE-Skin the Cat: Matrix Leads the Way Directing Cell Survival
Alan Wells, MD, DSc (15 min)
Thomas J. Gill III Professor of Pathology
University of Pittsburgh

Topical Molecular Therapy to Enhance Tissue Repair and Mitigate Scar
Sandeep Kathju, MD, PhD (15 min)
Visiting Associate Professor
Department of Surgery, Division of Plastic Surgery
University of Pittsburgh

Approaches to Restore Wound Healing in Chronic Wounds
Marjana Tomic-Canic, RN, PhD (30 minutes)
Professor of Dermatology
University of Miami Miller School of Medicine

12:30 p.m.  Lunch  Marquis Ballroom
1:30 p.m.  Concurrent Sessions

A.  Regenerative Rehabilitation  Nemacolin 1-6
Chair and Organizer: Fabrisia Ambrosio, PhD
Assistant Professor
Department of Physical Medicine & Rehabilitation
University of Pittsburgh
Mechanobiology’s Role in the Development of Clinical Rehabilitation Protocols to Promote Tissue Regeneration
Fabrisia Ambrosio, PhD
Assistant Professor
Department of Physical Medicine & Rehabilitation
University of Pittsburgh

Tissue Architecture Controls the Contractile Strength of Engineered Skeletal Muscle
Adam Feinberg, PhD
Assistant Professor
Regenerative Biomaterials and Therapeutics
Department of Biomedical Engineering
Department of Materials Science and Engineering
Carnegie Mellon University

Chronic Muscle Stimulation in Myotonic Dystrophy Type 1: Possible Effect on Pathogenetic Mechanisms
Carmelo Chisari, PhD
Unit of Neurorehabilitation
Department of Neuroscience
University of Pisa, Italy

Cell Therapy and Rehabilitation for Spinal Cord Repair
Martin Oudega, PhD
Assistant Professor, Physical Medicine & Rehabilitation
University of Pittsburgh

B. Cardiovascular Issues and Opportunities Lecture Hall
Organizer: Robert L. Kormos, MD
Professor of Surgery
Department of Cardiothoracic Surgery
Director, Artificial Heart Program
Co-Director, Heart Transplantation
University of Pittsburgh

Chair: Christian Bermudez, MD
Assistant Professor of Surgery
Department of Cardiothoracic Surgery
University of Pittsburgh
Chief, Division of Cardiothoracic Transplantation
Surgical Director ECMO Program
Mending a Broken Heart: A Stem Cell Story
Johnny Huard, PhD
Professor and Henry J. Mankin Endowed Chair-Orthopaedic Surgery
Professor, Departments of Molecular Genetics, Biochemistry, Bioengineering, and Pathology
Director, Stem Cell Research Center
University of Pittsburgh

Clinical Perspective on Cell Therapy for the Myocardium
Catalin Toma, MD
Assistant Professor of Medicine
Cardiac Catheterization Laboratory
University of Pittsburgh Medical Center

Machine Perfusion with a New Oxygen Carrier Solution: The Future of Organ Preservation
Paulo Fontes, MD
Assistant Professor of Surgery at the University of Pittsburgh School of Medicine, and

Christian Bermudez, MD
Assistant Professor of Surgery
Department of Cardiothoracic Surgery
University of Pittsburgh
Chief, Division of Cardiothoracic Transplantation
Surgical Director ECMO Program

Progress in Delivery of Biomaterials to the Heart
David Schwartzman, MD
Professor, University of Pittsburgh School of Medicine
UPMC Heart and Vascular Institute

3:30 p.m.  Break

4:00 p.m.  Translational Research: Innovation, Entrepreneurship and Commercialization a.k.a. Networking/Translational Research
Grand Ballroom
Chair: Pratap Khanwilkar, PhD, MBA
Director, Coulter Translational Research Partners II Program at Pitt Executive-in-Residence, Office of Technology Management
Professor, Department of Bioengineering
University of Pittsburgh
NSF Innovation Corps Experience (Product-Market fit) - 15 min
Kacey Marra, PhD
Associate Professor, Department of Surgery
University of Pittsburgh
Co-Director, Adipose Stem Cell Center
University of Pittsburgh Medical Center

Coulter CTRA and TPII Programs- an investigator's view- 15 min
Charles Sfeir, DDS, PhD
Associate Professor
Department of Oral Medicine and Pathology
University of Pittsburgh

Keynote on Entrepreneurial and Commercialization Journey- 30 min
Peter DeComo
Chairman and Chief Executive Officer
ALung Technologies

Panel Discussion (with wine and cheese)- 40 min
Drs. Kacey Marra, Charles Sfeir, Michael Pinsky, Alex Ducrue, William Federspiel, Peter DeComo

Moderator: Pratap Khanwilkar, PhD, MBA

A. Role of OTM, licensing options, How can OTM help you
   Alex Ducrue, PhD
   Technology Licensing Manager
   Office of Technology Management
   University of Pittsburgh

B. Perspectives of Pitt faculty who have been there and done that
   Michael Pinsky, MD
   Professor and Vice Chair for Academic Affairs
   Director, Cardiopulmonary Research Laboratory
   Director, NRSA Research Training Program
   University of Pittsburgh

William Federspiel, PhD
William Kepler Whiteford Professor
Departments of Chemical Engineering, Surgery, and Bioengineering
University of Pittsburgh
6:00 p.m.  **Dinner**  
Marquis Ballroom  
Elevator Pitch Contest  
Andrew Remes, PhD  
Panel:  
  - Pratap Khanwilkar, PhD, MBA-University of Pittsburgh  
  - Arpita Maiti, PhD- Vertex  

**Poster Awards**  
Andrew Duncan, PhD  

**Door Prizes** *(winner must be present):*  
1. Overnight Stay for 2 at Nemacolin Resort  
   - With Breakfast for 2, and  
   - Two Nemacolin Activities (Spa, Golf, etc.)  
2. Golf for 2 on Mystic Rock Championship Course  
3. Golf for 2 on Mystic Rock Championship Course  

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**Sunday March 10, 2013**

7:00 a.m.  **Breakfast**  
Grand Ballroom  

8:00 a.m.  **Student Trainee Session**, also open to all faculty (Sanjeev Shroff, PhD and Paul Monga, MD)  
Lecture Hall

*Alternate Career Choices – Something Other than Academia and Industry*

- **NIH Intramural Career Opportunities**  
  Sruti Shiva, PhD  
  Assistant Professor  
  Department of Pharmacology and Chemical Biology  
  University of Pittsburgh

- **Careers in the Law – More than Patent Prosecution**  
  David S. Smith, JD of Counsel, Pepper Hamilton, LLP

- **Career Opportunities at the Centers for Disease Control**  
  Elizabeth R. Unger, PhD, MD  
  Chief, Chronic Viral Disease Branch,  
  Centers for Disease Control and Prevention  
  President, American Society for Investigative Pathology

- **Career Opportunities in Professional Societies, Journals, and Public Policy Sector**  
  Mark E. Sobel, MD, PhD  
  Executive Officer, American Society for Investigative Pathology,  
  International Society for Biological and Environmental Repositories,  
  Intersociety Council for Pathology Information

11:00 a.m.  **Departure**