

**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   | <b>Marquis Foyer</b>    |
| 7:00 PM | <b>Reception</b><br>Poster Session and Hors d'oeuvres<br>Chair and Organizer: Andrew Duncan, PhD<br>McGowan Institute for Regenerative Medicine<br>Assistant Professor of Pathology<br>University of Pittsburgh   | <b>Marquis Ballroom</b> |
| 8:30 PM | Chair and Organizer: J. Peter Rubin, MD, FACS,<br>Chief and Associate Professor, Division of Plastic and<br>Reconstructive Surgery<br>University of Pittsburgh<br>Co-Director, Adipose Stem Cell Center<br>Co-Director, Aesthetic Plastic Surgery Center<br>University of Pittsburgh Medical Center<br><br><i>Clinical Translation of Work in the Area of Skin Cell Based<br/>Therapy Developments</i><br>Jörg C. Gerlach, MD, PhD, Professor of Surgery<br><br><i>Fat Grafting for Facial Reconstruction</i><br>J. Peter Rubin, MD, FACS | <b>Marquis Ballroom</b> |
| 9:30 PM | <b>Wrap Up</b>  |                         |

**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 Institutet, 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 (2<sup>nd</sup> 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

6:00 p.m.      **Dinner**      **Marquis Ballroom**  
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 Grand Ballroom**

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 Ducruet, William

Federspiel, Peter DeComo

Moderator: Pratap Khanwilkar, PhD, MBA

A. *Role of OTM, licensing options, How can OTM help you*

Alex Ducruet, 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 Nemaquin Resort
  - With Breakfast for 2, and
  - Two Nemaquin Activities (Spa, Golf, etc.)
2. Golf for 2 on Mystic Rock Championship Course
3. Golf for 2 on Mystic Rock Championship Course

**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**