

First Annual Symposium on Regenerative Rehabilitation

November 3 - 4, 2011

DoubleTree by Hilton® Hotel & Suites
Pittsburgh, Pa.

Sponsored by:

University of Pittsburgh School of Medicine
Center for Continuing Education in the Health Sciences
UPMC Rehabilitation Institute
The McGowan Institute for Regenerative Medicine
University of Pittsburgh School of Health and Rehabilitation Sciences
University of Pittsburgh Department of Physical Medicine & Rehabilitation

Course Directors

- **Fabrisia Ambrosio, PhD, MPT**
Assistant Professor
Department of Physical Medicine and Rehabilitation
Director, Cellular Rehabilitation Laboratory
University of Pittsburgh
- **Alan J. Russell, PhD**
Distinguished University Professor of Surgery
Director, McGowan Institute for Regenerative Medicine
University of Pittsburgh & UPMC
- **Michael Boninger, MD**
Professor and Chair
Department of Physical Medicine and Rehabilitation
University of Pittsburgh

Intent

Medical advances in the field of Regenerative Medicine are accelerating at an unprecedented rate. Re-growing a lost limb, restoring function to a diseased organ, or harnessing the body's natural ability to heal itself are becoming part of our reality instead of a distant promise. Technologies, such as cellular therapies, bioscaffolds, and artificial devices, are now in use or are being tested in clinical trials throughout the country.

- How do we as clinicians and rehabilitation professionals follow up on a patient who had undergone a cellular therapy or a tissue engineering procedure?
- How do we as investigators in the field of Regenerative Medicine make the most of these revolutionary results?

Few opportunities are available to bring together scientists and clinicians working in these two currently quite disparate fields: rehabilitation science and regenerative medicine. However rehabilitation science and regenerative therapies have to work closely in order to achieve a successful outcome for the patient. This situation created the need for open cross disciplinary work and collaborative communication.

This symposium provides the opportunity for researchers and clinicians from around the world to gather and learn about the latest developments, share ideas and concepts and create sustainable collaborations.

The First Annual Scientific Symposium on Regenerative Rehabilitation will bring together world-renowned experts in the fields of regenerative medicine and rehabilitation.

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Objectives

During this course, participants will:

- Interact with cutting-edge researchers.
- Learn of the status of translating scientific discoveries into clinical practice.
- Network with colleagues and potential collaborators.
- Raise questions, debate the implications, plan follow-up studies, and discuss results.
- Share the status of their own research and clinical observations.
- Meet with presenters to learn about their thinking and future research directions.

Who Should Attend

This course will provide updates on emerging technologies and will facilitate networking amongst physical and occupational therapists, speech-language pathologists and audiologists, physiatrists and scientists who have an interest in regenerative rehabilitation.

Continuing Education Credit

The University of Pittsburgh School of Medicine is accredited by the ACCME to provide continuing medical education for physicians. The University of Pittsburgh designates this live activity for a maximum of 11.5 AMA PRA Category 1 Credit(s)[™]. Physicians should claim only the credit commensurate with the extent of their participation in the activity.

Other health care professionals are awarded 1.1 continuing education units (CEU's) which are equal to 11.5 contact hours.

For more information or to register, visit UPMC.com/RegenerativeSymposia

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AGENDA

Day 1: Thursday, November 3, 2011

7:00am	Registration and light breakfast	12:15pm	Bone Regenerative Effects of FES-Rowing <i>Leslie R. Morse, DO</i>
8:00am	Welcome and Introduction <i>Alan J. Russell, PhD</i> <i>Michael L. Boninger, MD</i> <i>Fabrisia Ambrosio, PhD, MPT</i>	12:40pm	Lunch and visit of the Exhibit Area
8:15am	Introduction to Plenary Session <i>Steve L. Wolf, PhD, PT, FAPTA, FAHA</i>	1:30pm - 3:55pm	Session B: Impact of Rehabilitation Strategies on Cell Therapies
8:30am	Plenary Session: Hand Transplantation - From Laboratory Bench to Occupational Therapy <i>W. P. Andrew Lee, MD</i>	1:30pm	Regenerative Pharmacology for Genetic Myopathies <i>Martin K. Childers, DO, PhD</i>
9:30am - 12:40pm	Session A: Mechanotransduction as a Tool in Tissue Healing	1:55pm	Tissue Engineering Based on Muscle-derived Stem Cells: Potential Applications for Tissue Regeneration <i>Johnny Huard, PhD</i>
9:30am	Mechanobiology of the Intervertebral Disc: A Force For Good? <i>Gwendolyn Sowa, MD, PhD</i>	2:20pm	Cellular Rehabilitation for Improved Muscle Stem Cell Function <i>Fabrisia Ambrosio, PhD, MPT</i>
9:55am	Potential Role of Tissue Mobilization in Acute Vocal Fold Wound Healing <i>Kittie Verdolini Abbott, PhD</i>	2:45pm	Stem Cells and Cardiac Regeneration <i>Carmen Terzic, MD, PhD</i>
10:20am	The Molecular and Cellular Mechanisms for Rehabilitation and Regeneration of Injured Tendons <i>James Wang, PhD</i>	3:10pm	Refreshment Break
10:45am	Refreshment Break	3:30pm	Percutaneous Use of MSC's in Knee and Hip Osteoarthritis <i>Christopher J. Centeno, MD</i>
11:00am	Progress in Neural Stem/Progenitor Cell & Rehabilitation Combined Approaches <i>Heather Ross, PhD</i>	3:55pm	Keynote Address: Stem Cells in Tissue Repair, Regeneration, and Restoration <i>Thomas A. Rando, MD, PhD</i>
11:25am	Acute Intermittent Hypoxia as a Neuroregenerative Tool to Enhance SCI Rehabilitation <i>Randy D. Trumbower, PT, PhD</i>	4:40pm	Wrap Up Day 1 <i>Alan J. Russell, PhD</i>
11:50am	Capitalizing on Tissue Regenerative Capacity to Improve Health after Spinal Cord Injury <i>Richard K. Shields, PT, PHD, FAPTA</i>	5:00pm	Reception. Posters Session. Industry Exhibits.
		6:30pm	Adjournment Day 1

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Day 2: Friday, November 4, 2011

7:00am	Continental Breakfast	11:00am	Regenerative Medicine and Rehabilitation: Implications for the Physical Therapy Education Process <i>Anthony Delitto, PhD, PT, FAPTA</i>
8:00am	Introduction Day 2 of the conference <i>Fabrisia Ambrosio, PhD, MPT</i> <i>Michael L. Boninger, MD</i>	11:15am	Regenerative Medicine and Rehabilitation: Implications for the Medical Education Process <i>Michael L. Boninger, MD</i>
8:15am - 9:45am	Session C: Impact of Rehabilitation Strategies on Device Enabled Therapies	11:30am	Live Long and Prosper: Regenerative Medicine is Reality....not Science Fiction! <i>Vonda Wright, MD</i>
8:15am	Restoring Sight through Non-Visual Pathways <i>Amy C. Nau, OD, FAAO</i>	12:00pm	Wrap Up and Final Comments <i>Michael L. Boninger, MD</i> <i>Fabrisia Ambrosio, PhD, MPT</i>
8:40am	Implantable Neural Prosthesis to Restore Sensorimotor Functions in Disabled People <i>Silvestro Micera, PhD</i>	12:15pm	Conference Adjournment
9:05am	Cortical and Spinal Reorganization after Chronic Spinal Cord Injury <i>Monica Perez, PhD, PT</i>		
9:30am	Refreshment Break		
9:45am	Introduction to Plenary Session <i>Steve L. Wolf, PhD, PT, FAPTA, FAHA</i>		
10:00am	Plenary Session: Rehabilitation as a Determinant Factor in Constructive Remodeling of Biologic Scaffolds <i>Stephen F. Badylak, DVM, PhD, MD</i>		Schedule is subject to change.

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Professor and Chair
Department of Physical Medicine and Rehabilitation
University of Pittsburgh

Guest Faculty

Christopher J. Centeno, MD

Medical Director
Centeno Schultz Clinic
Denver, Colo.

Martin K. Childers, DO, PhD

Professor of Neurology and Regenerative Medicine
Wake Forest University Health Sciences
Winston-Salem, N.C.

W. P. Andrew Lee, MD

Chairman
Department of Plastic and Reconstructive Surgery
Johns Hopkins University School of Medicine
Baltimore, Md.

Silvestro Micera, PhD

Assistant Professor of BioRobotics
Scuola Superiore Sant'Anna
Pisa, Italy

Leslie Morse, DO

Assistant Professor
Department of Physical Medicine & Rehabilitation
Harvard Medical School
Boston, Mass.

Thomas A. Rando, MD, PhD

Professor of Neurology and Neurological Sciences
Stanford University School of Medicine
Stanford, Calif.

Heather Ross, PhD

Research Assistant Professor
Department of Physical Therapy
University of Florida
Gainesville, Fla.

Richard K. Shields, PT, PHD, FAPTA

Professor and Chair
Physical Therapy and Rehabilitation Science
University of Iowa
Iowa City, Iowa

Carmen Terzic, MD, PhD

Associate Professor of Medicine
and Physical Medicine and Rehabilitation
Mayo Clinic
Rochester, Minn.

Randy D. Trumbower, PT, PhD

Assistant Professor
Department of Rehabilitation Medicine
Emory University
School of Medicine
Decatur, Ga.

Steve L. Wolf, PhD, PT, FAPTA, FAHA

Professor
Departments of Rehab Medicine, Medicine, Cell Biology
Emory University School of Medicine
Atlanta, Ga.

Local Faculty

Stephen Badylak, DVM, PhD, MD

Professor
Department of Surgery
University of Pittsburgh School of Medicine
Pittsburgh, Pa.

Anthony Delitto, PhD, PT, FAPTA

Professor and Associate Dean of Research
School of Health and Rehabilitation Sciences
University of Pittsburgh
Pittsburgh, Pa.

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Johnny Huard, PhD

Professor
Department of Orthopaedic Surgery, Molecular Genetics,
Biochemistry, Bioengineering and Pathology
University of Pittsburgh
Pittsburgh, Pa.

Amy C. Nau, OD, FAAO

Clinical Assistant Professor
University of Pittsburgh School of Medicine
Pittsburgh, Pa.

Monica Perez, PhD, PT

Assistant Professor
Department of Physical Medicine and Rehabilitation
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Pittsburgh, Pa.

Gwendolyn Sowa, MD, PhD

Assistant Professor
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Kittie Verdolini Abbott, PhD

Professor
Communication Science and Disorders
University of Pittsburgh
Pittsburgh, Pa.

James Wang, PhD

Associate Professor of Orthopaedic Surgery
Bioengineering, Mechanical Engineering & Materials Science
University of Pittsburgh School of Medicine
Pittsburgh, Pa.

Vonda Wright, MD

Assistant Professor of Orthopedic Surgery
University of Pittsburgh School of Medicine
Pittsburgh, Pa.

In accordance with Accreditation Council for Continuing Medical Education requirements on disclosure, information about relationships of presenters with commercial interests (if any) will be included in materials distributed at the time of the conference.

Call for Posters

We welcome posters from all participants. Standard poster space is 4' by 8'. If your poster is "oversized" please notify us; we will do our best to accommodate all requests. The posters will be available for viewing during the entire duration of the conference. Scientists will also have the opportunity to present their poster to symposium participants during the Reception at the end of Day 1.

To submit your poster (title and abstract), please e-mail your submission to munschl@upmc.edu.

Be sure to include:

- title,
- authors
- abstract (NTE 1,500 characters)

Format:

- 12 point
- Times New Roman
- not more than 1 page

Please send your abstracts before October 14. You will be notified if your poster was accepted by October 21.

Industry Exhibits

This inaugural conference will be an excellent venue where industry representatives, academics and clinicians will gather to discuss the latest trends and developing scientific breakthroughs in regenerative rehabilitation. This unique environment is one where every exhibitor is regarded as both a valuable contributor to the meeting and a colleague.

The exhibits will be available for viewing during the entire duration of the conference. Industry exhibitors will also have the opportunity to present their exhibits to symposium participants during the Reception at the end of Day 1.

Exhibit tabletops are available at \$750/table.

Please contact Larisa Munsch at munschl@upmc.edu if you are interested in reserving exhibition space.

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Registration Information

You may register online or by using the paper format.

Online Registration

Registering online is the quickest and easiest way to reserve your space at CCEHS conferences.

- Visit our online registration site at <https://ccehs.upmc.com/formalCourses.jsp#3093>
- Click the Registration button and enter all the requested information (including an email address) and follow the prompts to submit your registration after entering your payment information
- Print the automatic electronic registration confirmation email sent to the email address you provided us when you registered. If you do not receive the registration confirmation, please contact us at 001-412-624-5247.

You must bring the printed confirmation e-mail with you at the conference.

Paper Registrations by Fax or Mail

If you are unable to register online, please contact us and we will send you a paper registration form that you can e-mail, fax or mail to us.

Please see contact information below.

We will fax or mail you a confirmation letter if you submitted a paper registration form one week after receipt of your document.

Please note: Registration is complete only when you receive the confirmation letter. If you do not receive the confirmation letter within 5-7 days of registration, please contact us at 001-412-624-5247.

You must bring this confirmation letter with you at the conference.

Registration Fees

- \$245 – Physicians and Faculty
- \$125 – Occupational and Physical Therapists, and Speech-Language Pathologists and Audiologists
- \$125 – Students, Postdoctoral Fellows, Residents, Nurses and Research Staff

Registration fee includes

(for conference registrants only)

- Continuing education credit
- Registration and course materials
- Continental breakfast, lunch, refreshments and reception

For additional information, please contact:

Larisa Munsch
McGowan Institute for Regenerative Medicine
450 Technology Drive, Suite 300
Pittsburgh, PA 15219
Phone: 001-412-624-5247. Fax: 001-412-624-5260
E-mail: munschl@upmc.edu

Group Registrations

Group registration discounts are available to University of Pittsburgh and UPMC departments registering 3 or more attendees for Physicians and Faculty status only. Due to the already reduced individual rate, group discounts are not available for Occupational and Physical Therapists, and Speech-Language Pathologists and Audiologists, Nurses and Research Staff.

Contact Larisa Munsch munschl@upmc.edu to make arrangements for a group registration for your department.

The deadline to request a group registration is Friday, October 14, 2011 at 5:00 p.m. EDT. Group registration discount must be requested and confirmed before the first registration; discounts will not be applied to any existing registrations.

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Cancellation

All cancellations must be in writing and sent to us via U.S. mail, e-mail or fax. Tuition for cancellations postmarked or date stamped before October 3 will be completely refunded. After October 3 a \$35 administrative fee will be assessed. No refunds will be made after October 27. Cancellation requests can be made to:

Larisa Munsch
McGowan Institute for Regenerative Medicine
450 Technology Drive
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Phone: 001-412-624-5247. Fax: 001-412-624-5260
E-mail: munschl@upmc.edu

The UPMC Center for Continuing Education in the Health Sciences reserves the right to cancel this program if sufficient registrations are not received. In the case of cancellation, the department will fully refund registration fees.

Location

The conference will be held at DoubleTree by Hilton® Hotel & Suites Pittsburgh Downtown One Bigelow Square, Pittsburgh, PA 15219

Overnight Accommodations

The conference has contracted a limited number of hotel rooms at the DoubleTree Hotel for guest speakers and conference attendees. You may book a room by calling the hotel at 1-800-222-TREE (8733) and asking for the *Regenerative Rehabilitation block* in order to receive our reduced rates. The special rate is \$159/night plus applicable tax. These accommodations are not included in the registration fee. If you experience any problems booking your room, please call 412-624-5247. Room availability cannot be guaranteed beyond the contracted block end date of October 10th.

Special Needs

Participation by all individuals is encouraged. Advance notification of any special needs will help us provide a better service. Please notify us of your needs at least two weeks in advance of the program by calling 001-412-624-5247.

Visit the Center for Continuing Education in the Health Sciences Website

Our Internet address is: <https://ccehs.upmc.com>

The UPMC Center for Continuing Education in the Health Sciences invites you to visit our web location. Receive information on CME programs, earn CME credits on the Internet, and access information about our formal courses and much more. Discover who we are and how you can contact us. Please visit our web location often to get updated information on upcoming programs.

The University of Pittsburgh, as an educational institution and as an employer, values equality of opportunity, human dignity, and racial/ethnic and cultural diversity. Accordingly, the University prohibits and will not engage in discrimination or harassment on the basis of race, color, religion, national origin, ancestry, sex, age, marital status, familial status, sexual orientation, disability, or status as a disabled veteran or a veteran of the Vietnam era. Further, the University will continue to take affirmative steps to support and advance these values consistent with the University's mission.

This policy applies to admissions, employment, access to and treatment in University programs and activities. This is a commitment made by the University and is in accordance with federal, state, and/or local laws and regulations. For information on University equal opportunity and affirmative action programs and complaint/grievance procedures, please contact: William A. Savage, Assistant to the Chancellor and Director of Affirmative Action (and Title IX and 504 Coordinator), Office of Affirmative Action, 901 William Pitt Union, University of Pittsburgh, Pittsburgh, PA 15260, (412) 648-7860.