2014 Medical Student Research Fair

Department of Physical Medicine & Rehabilitation
Michael Boninger, MD, Professor and Chair

http://www.rehabmedicine.pitt.edu
Research Faculty and Research Interests

Fabrisia Ambrosio, PhD, MPT
Assistant Professor
  Duchenne’s Muscular Dystrophy
  Stem Cell Research

Patricia Arenth, PhD
Assistant Professor
  Traumatic Brain Injury
  Neuroimaging
  Cognitive Recovery

Michael L. Boninger, MD
Professor and Chair
  Adaptive Sports
  Assistive Technology
  Spinal Cord Injury

Jennifer Collinger, PhD
Assistant Professor
  Brain Computer Interface (BCI)
  Neurorehabilitation
  Assistive Technology

Brad Dicianno, MD
Associate Professor
  Adaptive Sports
  Assistive Technology
  Spina Bifida
  Spinal Cord Injury

Lee Fisher, PhD
Assistant Professor
  Neuroprosthetics
  Bioengineering

Robert Gaunt, PhD
Assistant Professor
  Neuroprosthetics
  Functional Electrical Stimulation
  Sensory Motor Control

Amy Houtrow, MD, MPH, PhD
Associate Professor
  Sociological impact of disabilities
  Children with disabilities
  Pediatric Rehabilitation Medicine

Anthony E. Kline, PhD
Associate Professor
  Traumatic Brain Injury
  Antipsychotics and TBI
  Cognitive Recovery

Martin Oudega, PhD
Assistant Professor
  Spinal Cord Injury
  Schwann Cells
  Spinal Cord Regeneration

Monica Perez, PhD
Assistant Professor
  Transcranial Stimulation
  Spinal Cord Injury
  Motor Control

Gwendolyn Sowa, MD, PhD
Associate Professor
  Vice Dean of Medical Student Research
  Invertebral Disc Degeneration
  Mechanics of Pain
  Interventional Pain Management

Amy Wagner, MD
Associate Professor and
Vice Chair of Research
  Traumatic Brain Injury
  Neuroimaging
  Gender and Recovery after TBI

Wei Wang, MD, PhD
Assistant Professor
  Brain Computer Interface (BCI)
  Virtual Reality
  Magnetoencephalography

For more information on the research faculty of the Department of Physical Medicine & Rehabilitation go to the faculty pages on www.rehabmedicine.pitt.edu
RESEARCH WITH THE DEPARTMENT OF PHYSICAL MEDICINE AND REHABILITATION

The department is very proud to be ranked 3rd in NIH funding to physical medicine and rehabilitation programs. The rank is further proof of the value placed on research by the department administration and faculty. Our investigations follow the guidelines set out by the NIH Roadmap: medical research should be designed to deepen our understanding of biology, stimulate interdisciplinary research teams, and reshape clinical research to accelerate medical discovery and improve people’s health.

The department is at the forefront of national rehabilitation trends in both basic and clinical research.

- Biomarkers used in both TBI and pain control research
- Neuroprosthetics
- Brain-computer interface
- Assistive Technology
- Musculoskeletal regeneration
- Cognitive studies
- Stem cell research
- Spinal cord regeneration research.

A number of basic laboratory investigations have led to clinical investigations including:

- Electrical stimulation used to enhance regenerative capabilities in aged muscle
- Neuroprosthetics and sensorimotor functions
- Brain-computer interface studies to restore hand function
- Ultrasound used to determine rotator cuff changes associated with wheelchair propulsion

Students at all levels and from a wide range of departments and specialties have received valuable instruction from our faculty in the various laboratories and shared space in UPMC and the University of Pittsburgh. A number of students have presented at national conferences, and received awards and scholarships as a result of their work with our faculty.

PMR - SoM Research Experts

PMR Director of Medical Student Education, Brad Dicianno, MD, an alumnus of the University of Pittsburgh, its School of Medicine, and this department’s residency program, is committed to matching interested medical students with the right PMR research investigations. As an SoM alumni he is well informed of the requirements of the medical school research requirement. dicianno@pitt.edu

School of Medicine Assistant Dean of Medical Student Research, Gwen Sowa, MD, PhD, is an alumnus of the University of Wisconsin and the Rehabilitation Institute of Chicago. Dr. Sowa is internationally recognized for her research in degenerative disc disease, back pain, and the mechanics of movement therapy. sowaga@upmc.edu
PM&R Interest Group allows students interested in the field of physiatry to learn more about the field, network with faculty and residents, and attend workshops and social events. The faculty director of this group is Dr. Brad Dicianno.
http://zone.medschool.pitt.edu/sites/StudentGroups/PMRIG/default.aspx

Medical Student Research
Med Student Scholarly Projects. The intent of this effort is to expose students to the mechanics of scientific investigation; teach them how to develop a hypothesis and how to collect, analyze, and interpret data to support it.

Dean’s Summer Research Program. Each year University of Pittsburgh medical school alumni sponsor a summer research program for our 1st and 2nd year students.

Rehabilitation Research Experience for Medical Students (RREMS). Sponsored by The Association of Academic Physiatrists (AAP) and the Foundation for PM&R, this eight-week summer externship offers first year medical students experience in scholarly research within the specialty of Physical Medicine & Rehabilitation. The RREMS was developed for medical students with strong research interests. The program provides a structured research experience while exposing the medical student to some of the most successful and respected faculty mentors in the field of PM&R.

In addition to working with experts in the field the elected student receives:
- $4000 stipend
- Paid travel to attend and present at the AAP Annual Assembly

Medical Student Training

The Area of Concentration (AOC):
Disabilities Medicine prepares interested medical students for health care careers serving children and adults with disabilities. Disabilities Medicine encompasses the body of knowledge about disabilities at multiple levels of analysis: the biological basis of disability, recommended clinical practices, functional impacts of disability and its treatment, environmental, social and community determinants of outcomes, and public health. The AOC promotes the development of skills in person- and family-centered practice, collaborative decision-making, functional assessments, cultural competence, and chronic care delivery.
Participants learn about community resources and policies that interact with health care to improve clinical and functional outcomes for people with disabilities. Students who participate in the AOC in Disabilities Medicine support the inclusion of individuals with disabilities in all aspects of community life. Dr. Betty Liu, MD, is the Director of the AOC.
http://zone.medschool.pitt.edu/sites/programs/AOC/disabilities/default.aspx

Integrative Medicine refers to the incorporation of evidence-based complementary therapies into conventional treatments for patients. Integrative medicine is meant to work in conjunction with traditional medicine, providing a more holistic approach to healing — mind, body, and spirit. This AOC provides an opportunity for future physicians, no matter their career choice to explore and train in integrative medicine as well as conduct scholarly review and investigation of integrative medicine contributing to evidence based medicine. It will also provide the opportunity to develop tools that can provide a foundation of knowledge and skills that can be used in caring for one’s-self as well as allowing the physician-in-training to counsel patients appropriately regarding complementary modalities and self-care practices. The directors of this AOC are Dr. Brad Dicianno and Dr. Ronald Glick.
http://zone.medschool.pitt.edu/sites/programs/AOC/im aoc/default.aspx