



## HERL Hosts Wheelchair and Seating Workshop for VA Clinicians

The HERL VA Center of Excellence on Wheelchairs and Associated Rehabilitation Engineering strives to translate research into clinical practice, build research capacity by training clinicians, and improve wheelchair provision through education and clinical support. In line with these important center goals, HERL hosted a Wheelchair and Seating Workshop for Pittsburgh VA Clinicians on March 22 and April 2, 2007 at the VA Pittsburgh Healthcare System Highland Drive Building 8 Auditorium.

Dr. Alison Peterson, a physiatrist in the Pittsburgh VA Physical Medicine & Rehabilitation Service, invited HERL to conduct the training program for VA clinicians, including those working in the VA's Rehab Seating Clinic and Powered Mobility Clinic, which meets 4 times a month in Pittsburgh. "I thought it would really benefit all the clinicians in our department," said Dr. Peterson. She wanted to make sure they had the best knowledge of what assistive technologies (AT) to order for patients.

Dr. Alicia Koontz, HERL Investigator and VA Research Scientist, took on the task of coordinating the workshop and training program. "I think as a center of excellence, that it's important for us to be a leader in terms of disseminating and translating research into clinical practice...we have a lot of clinicians at the VA who have no idea what's going on in research," said Dr. Koontz about HERL's involvement.

The workshop was targeted towards occupational and physical therapists, physiatrists, and others working with assistive technology. The training program attracted other experts as well, such as VA prosthetists, recreational therapists, driving teachers, and physi-

cians, as well

as a group of 10-12 Physical Medicine and Rehabilitation Residents medical residents from the University of Pittsburgh Medical Center (UPMC). About 40-60 people attended over the span of the 2 day event. The VA Employee Education System offered a maximum of 9 AMA PRA Category 1 Credits for doctors and provided info for other rehab professionals to apply the credits through other agencies.

Dr. Koontz kicked off the first day of the workshop, presenting on manual wheelchair propulsion biomechanics. HERL investigator Dr. Brad Dicianno lectured on powered mobility. Rosemarie Cooper, Director of the UPMC Center for Assistive Technology (CAT), gave an overview of the

CAT assistive technology prescription and seating clinic. Dr. Koontz felt it was important to include non-VA experts to talk about how assistive technology is prescribed in the private sector. Rosemarie also presented on wheelchair seating fundamentals.

On day 2, Rich Schein, a CAT Rehab Technologist, spoke about cushions and pressure



Top: CAT Director Rosemarie Cooper, MPT, presenting on wheelchair seating fundamentals  
Bottom: HERL graduate student Emily Zipfel's presentation on wheelchair standards

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mapping. Also presenting were HERL faculty—Annmarie Kelleher MS, OTR/L on Seating Function and Backs, Dr. Don Spaeth on wheelchair maintenance, and Dr. Diane Collins on disparities among wheelchairs. HERL graduate student Emily Zipfel presented on wheelchair standards.

Also on day 2 was a walk about lunch/expo with reps from wheelchair vendors Sunrise Medical, Permobil, Invacare, and Pride Mobility, to demonstrate and give the clinicians hands on experience with their latest products, and answer questions.

After lunch, the attendees split up into groups for breakout sessions on manual and power wheelchair evaluation. The groups evaluated sample cases of people needing AT based on patients that would typically be seen in the VA. The group leaders went through the wheelchair prescription process with the clinicians—then went to the vendor hall to select the best products they would recommend in those scenarios.

Training in wheelchair skills, such as being able to pop a wheelie in a manual wheelchair, and how to teach these skills to patients was also part of the breakout sessions. “Being able to pop a wheelie is

actually a very practical skill—if you’re going to be an active wheelchair user and going outdoors –its almost a necessity.” Dr. Koontz explained. Its easier to go over bumps, curbs, through rough terrain, and down hills with 2 wheels rather than 4—the front casters can easily get stuck in crevasses. Dr. Koontz also introduced and demonstrated the SmartWheel, a HERL invention that is commercially available from Three Rivers Out-Front. The SmartWheel can be used as a clinical tool to teach proper propulsion techniques and give propulsion feedback to the user. Improper propulsion techniques can lead to secondary problems like repetitive strain injury, which

many of the attendees had never heard about before.

Dr. Koontz said, “I had quite a few people come to me and say it was *so* good...they felt like they learned so much and found something they could take back to the clinic and start using right away....it really enlightened them to newer technologies out there that could better benefit their patients.” HERL is considering doing similar training at other VAs, VISN4 or Erie and Butler VAs. “It might be something we do every couple years even if just locally,” said Dr. Koontz.

-Christine Heiner



*Representatives from wheelchair vendors demonstrated their latest products during the lunch expo on day 2.*

## Current Events/Announcements

**On June 16, 2007, Able West, Inc. is holding their 8<sup>th</sup> Annual Richard West 5-Mile Wheelchair Race.** The course will extend from Harvey Cedars to Barnegat Light, Long Beach Island, NJ. There are 11 race categories, including juniors, hand cycle, and power wheelchair, and over \$5,000 in cash prizes, including a prize for overall fastest time. For more information, call Richard W. West at (609) 296-1043 or Email - [west72@comcast.net](mailto:west72@comcast.net) [www.ablewest.org](http://www.ablewest.org)

Students working on computing and information technology to help persons with disabilities are invited to enter the **second annual SIGACCESS Student Research Competition** on Oct. 14-17 in Tempe, AZ. This is an exciting opportunity for students to participate in an

ACM conference and get visibility for their research. Students wishing to participate should submit abstracts of their work, and up to 25 entrants will be selected for the competition. Qualifying research must deal with issues related to computing and information technology to help persons with disabilities. Entrants must be undergraduate or graduate students, and members of ACM. Entrants must be sole authors of their abstracts and posters. Submission instructions will be available through a link on the main conference page. The submissions deadline is July 13, 2007. <http://www.acm.org/sigaccess/assets07>

**Contact : Harriet Fell at [fell@ccs.neu.edu](mailto:fell@ccs.neu.edu)**

## State of the Science Workshop on Regenerative Medicine

The Human Engineering Research Laboratories (HERL) and Physical Medicine and Rehabilitation at Walter Reed Army Medical Center (WRAMC) held their seventh State of the Science workshop, this time teaming up with the Pittsburgh Tissue Engineering Initiative (PTEI) to focus on Limb Regeneration, on February 2, 2007 at WRAMC, Washington DC. It was a collaborative effort between PVA, the University of Pittsburgh School of Medicine Department of Physical Medicine and Rehabilitation and School of Health and Rehab Sciences, Department of Rehabilitation Science and Technology, and the Defense Advanced Research Projects Agency (DARPA).

Hundreds of soldiers, who were wounded in Afghanistan and Iraq, are returning home with limb amputations. Prostheses are getting better with time, but an actual limb will always be preferred. In response to this need, DARPA is funding two multi-center research programs, involving eminent scientists across the nation. Their research will enable us to better understand the intricate processes involved in wound healing and tissue restoration, especially in limbs. Under normal circumstances, adult mammals including humans, show limited regenerative abilities in selected cell populations like blood cells, intestinal lining, and liver cells. However, salamanders (a vertebrate) can regrow a severed limb, tail, spinal cord, jaws, eyes, and some parts of their heart. A recently discovered mouse strain called Murphy Roths Large (MRL) mouse, can also regenerate parts of their heart and ears following an injury. What distinguishes the wound healing between these two species and humans is that they produce a blastema, a mass of undifferentiated cells that eventually recreates the damaged body part. As a first step, the researchers will

make an effort to simulate blastema in humans and aim at developing a functional human digit by the end of four years. The team members bring together diverse, yet, complementary research interests and expertise about stem cells, tissue development and healing, extra-cellular matrix, growth factors, and regulation of gene expression.

This State of Science workshop introduced research rationale undertaken by these teams in their regeneration-related research. Some preliminary research findings were presented. The workshop

was attended by approximately 60 participants including physicians, therapists, social workers, counselors, rehabilitation engineers, and researchers who work in medical rehabilitation or related areas.

The visitors toured the WRAMC facilities with LTC Paul Pasquina, M.D., who also kicked off the workshop with a welcome speech. Stephen Badylak,

DVM, PhD, MD from McGowan Institute for Regenerative Medicine, University of Pittsburgh, gave an overview of the workshop agenda and introduced some speakers. Dr. Badylak is coordinating one team of scientists. Ken Muneoka, PhD, Professor and Chair, Dept. of Cell and Molecular Biology, Tulane University is coordinating the other team of scientists. Dr. Muneoka introduced collaborating researchers from his team and presented a talk titled "Limb Regeneration from a Developmental Perspective." Ellen Heber-Katz, PhD from The Wistar Institute, Philadelphia, PA presented her lecture "Use of MRL Mouse for Regenerative Medicine



*Researchers from the Pittsburgh Tissue Engineering Initiative and the McGowan Institute for Regenerative Medicine joined HERL and WRAMC to host the State of the Science Workshop on Regenerative Medicine*

*continued on page 4*



*State of the Science Workshop on Regenerative Medicine, continued from previous page*

Applications.” Dr. Heber-Katz’s was the first to discover the unique tissue regeneration properties in the MRL mouse strain. This was followed by a talk from Dr. Badylak “The Extracellular Matrix (ECM) as a Biologic Scaffold for Wound Repair and Tissue Reconstruction,” in which he gave insights about his research on using ECM’s for organ repair and regeneration. Susan Braunhut, PhD, Professor of Biological Sciences, Director of Graduate Studies in Biology, University of Massachusetts, Lowell, is investigating the way factors from cell extra cellular matrix guide development of stem cells into a complex three-dimensional limb structure. Her lecture titled “The Extracellular Matrix as a Source of Bioinductive Factors II” was insightful. Dr. Tanja Dominko, MD followed with “Changing Fibroblast Fate During Wound Healing”. Fibroblasts are special “memory cells” in connective tissues that secrete and maintain the cell extra cellular matrix. Dr. Dominko will explore genes, proteins, or factors, which when manipulated, will help restore tissue in a wound of the required phenotype. Dr. Dominko is a Research Assistant Professor at Department of Biology & Biotechnology, in Worcester Polytechnic Institute. The last lecture in the morning session, titled “Use of MicroRNA and Stem Cells Secretome to Program Cell Signaling for Limb Regeneration,” was given by Professor Eugenia Wang, PhD from the Department of Biochemistry and Molecular Biology, University of Louisville. Dr. Wang is a geneticist and her research integrates high-throughput enabling technologies like microarrays and proteomic profiling in the limb regeneration effort.

Lunch was graciously provided by Paralyzed Veterans of America (PVA). The afternoon session

started off with a lecture “Retinoids and Stem Cells in Limb Regeneration,” from Dr. Lorraine Gudas, PhD, Professor and Chairman, Department of Pharmacology, Weill Medical College of Cornell University, New York. Retinoids are natural or synthetic derivatives of Vitamin A (retinol) and they play an important role during the process of normal

cell differentiation. Later, Kenneth Marx, PhD, who is the Director of the Center for Intelligent Biomaterials at University of Massachusetts, Lowell, talked about “DATA Mining: Application to Limb Regeneration Research.” Dr. Marx develops bioinformatics tools to analyze and model complex biological systems. The last presentation of the day was from Scott Lephart, Ph.D, Chair, Department of Sports Medicine and Nutrition, University of Pittsburgh. He talked about “Exercise and Targeted Activity to Promote Wound Healing and Tissue Regeneration.”

A questions and answer session followed. Drs. Badylak and Muneoka were keen in answering questions from the multidisciplinary audience. The workshop concluded with closing remarks from Dr. Pasquina.

We also held a State of the Science workshop on Clinical Practice for People with Upper

Limb Amputation and Prosthetics at WRAMC on March 30, 2007. We will have an article on this workshop in the next issue of the HERL newsletter. Also, look for announcements and registrations for future workshops on our website, [www.herlpitt.org](http://www.herlpitt.org). For more information on the Pittsburgh Tissue Engineering Initiative, visit [www.ptei.org](http://www.ptei.org).

-Harshal Mahajan



**Top: Dr. Ken Muneoka, PhD, of Tulane University, presented Limb Regeneration from a Developmental Perspective research**

**Bottom: Dr. Stephen Badylak provided an overview of regenerative rehabilitation research**

## Want to participate in a HERL Research Study?

If you are interested in participating in any of these studies, please contact the HERL Clinical Coordinators: Annmarie Kelleher, Emily Teodorski, or Michelle Tolerico at 412-365-4850. Please note that these studies are conducted in Pittsburgh, PA



### Manual Wheelchair Propulsion Training

The purpose of this research is to create a manual wheelchair propulsion training program that emphasizes propulsion techniques that improve the manual wheelchair users stroke pattern and efficiency. You may be eligible to participate in this

study if you are at least 18 years of age, use a manual wheelchair as your primary means of mobility, do not have current upper limb pain that limits the way you push your wheelchair, your disability is not progressive or degenerative and are you are not an athlete having competed in racing within one year. If you are an individual living with a spinal cord injury (SCI) you must be no less than one year post inpatient rehabilitation and have a functional injury level of Cervical 7 or lower. If you are an individual with an amputation you are no less than one year post in-patient rehabilitation as well.

### Longitudinal Collaborative Investigation of Arm Pain in Paraplegia

This research study will help to determine if there is a relationship between arm pain and injury and the type of wheelchair you use and if injury may result from how you push a wheelchair. This may help to improve wheelchair fit and prescription and help prevent future injuries.



### Research Studies at other Pittsburgh Labs

SEEKING INDIVIDUALS WITH **TRAUMATIC BRAIN INJURY** TO PARTICIPATE IN A RESEARCH STUDY

For information call Bambi Brewer at 412.383.6594

**INVESTIGATING WAYS OF INCREASING MOTOR RECOVERY USING VIRTUAL REALITY AND ROBOTIC INTERVENTION**

**QUALIFICATIONS:**

- Between 18 and 65 years of age
- Injury occurrence at least 1 year ago
- Difficulty in grasping or controlling hand(s)

**PARTICIPATION INVOLVES:**

- Recording information from participant's medical record
- A brief physical examination
- Testing will be conducted in Oakland (all parking fees will be paid by this study)

All data collected for the purpose of this research study will be held in the strictest confidentiality in accordance with the Health Insurance Portability and Accountability Act (HIPAA) regulations.

Collaborating members of the University of Pittsburgh  
The Department of Physical Medicine and Rehabilitation  
AND  
The School of Health and Rehabilitation Sciences

### Brain Injury + Vision + Robotics

We are seeking individuals with **stroke and traumatic brain injury** to participate in a research study investigating how people use visual information as they move a robotic arm. Subjects will interact with a robot while looking at a computer screen. Individuals must be **more than one year post-injury** and have trouble moving an arm or hand. Subjects will be reimbursed \$50 for participating in this study. Interested individuals should contact B. Brewer at [bbrewer@shrs.pitt.edu](mailto:bbrewer@shrs.pitt.edu) or (412) 383-6594.

All testing will be completed at the VA Pittsburgh Healthcare System and the University of Pittsburgh Medical Center.

You will be compensated:

- \$100 for completing the initial testing
- An additional \$100 for completing the testing at 2 years.

Additional compensation for travel to Pittsburgh may be provided.

You may be eligible to participate if...

- You are between the ages of 18 and 65
- You have a spinal cord injury below T1
- You primarily use a manual wheelchair
- You do not have pain that limits your ability to propel a manual wheelchair

During participation in this study you will be asked to...

- Complete questionnaires
  - Complete analysis of the force you use when pushing your wheelchair
  - Have an MRI, x-ray, nerve conduction study and physical examination
  - Complete brief telephone follow-up interviews
    - Repeat initial testing after two years
- Principal Investigator: Michael Boninger, MD

## CURRENT RESEARCH ABSTRACTS

### Ultrasound Imaging of Acute Biceps Tendon Changes After Wheelchair Sports

Stefan van Drongelen, PhD; Michael L. Boninger, MD;

Bradley G. Impink, MSc; Tagreed Khalaf, MD

Full article published in *Archives of Physical Medicine and Rehabilitation*, pp. 318-385, Vol. 88, No. 3, March 2007.

**Purpose of the Work.** Overuse injuries of the upper extremities are common in wheelchair users. This study uses ultrasound to detect early signs of injuries after high intensity wheelchair sports, like basketball and rugby.

**Subjects/Procedures.** The biceps tendons of 42 subjects were imaged with Ultrasound before and after wheelchair basketball and quad rugby at the Veterans Games of 2004 and 2005.



**Results.** The biceps tendon was enlarged after the sports events and there appeared to be more fluid in the tendon. These findings are both indicators that damage might be present in the tendon. It was also found that the change in tendon diameter was related to the time of play.

**Relevance to wheelchair users.** Early detection of shoulder injuries is important in the prevention and understanding of chronic shoulder problems.

- Stefan van Drongelen, PhD

### Demographic Characteristics of Veterans Receiving Wheelchairs and Scooters from the Veterans Health Administration

Sandra L Hubbard, PhD, OTR/L, ATP, Shirley G Fitzgerald, PhD, Dean M Reker, PhD, RN,

Michael L Boninger, MD, Rory A Cooper, PhD, Lewis E Kazis, ScD

Full article published in *Journal of Rehabilitation Research and Development*, pp. 831-844, Vol. 43, No. 7, November/December 2006.

**Clinical Relevance:** Provision of the appropriate wheelchair to meet the needs of the user is essential for active community participation. For the clinician, understanding what chairs are being prescribed may provide insight of where improvements could be made, ultimately leading to positive changes in wheelchair provision.

**Purpose of the Work:** Little is known about the reasoning process clinicians use when prescribing a wheelchair, or the outcomes of this process, i.e. how many devices are prescribed, to whom, how often, and at what cost. This study characterized veterans receiving wheelchairs from the Veteran's Health Administration.

**Subjects and Procedures:** Three years of data from the National Prosthetic Patient Database



and the National Patient Care Database were merged, yielding over 77,000 observations per fiscal year. Analysis examined the relationship between wheelchair provision and demographic characteristics such as age, gender and race/ethnicity.

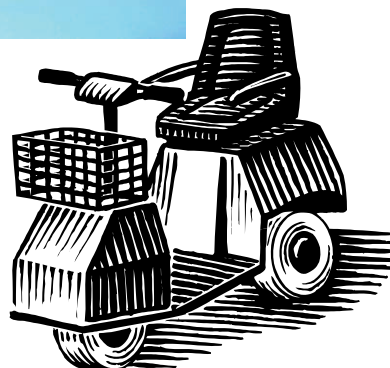
**Results:** Analysis showed that there were relationships provision of wheelchairs and age, gender, and race/ethnicity. For example, Hispanics, African Americans, Asian-Americans and American Indians were more

likely than Whites to receive standard, non-adjustable wheelchairs.

#### Relevance to Wheelchair

**Users:** For the veteran's who use wheelchairs, it is imperative that they are provided with the appropriate wheelchair to meet their needs.

-Sandy Hubbard, PhD





## CURRENT RESEARCH ABSTRACTS

### Force Control Strategies while Driving Electric Powered Wheelchairs with Isometric and Movement-Sensing Joysticks

Brad E. Dicianno, MD, Donald M. Spaeth, PhD, Rory A. Cooper, PhD, *Fellow, IEEE*, Shirley G. Fitzgerald, PhD, Michael L. Boninger, MD, and Karl W. Brown

Full article published in *IEEE Transactions on Neural Systems and Rehabilitation Engineering*, pp. 144-150, Vol. 15, No. 1, March 2007.

#### Purpose of the Work.

Innovations to control interfaces for electric powered wheelchairs (EPWs) could benefit 220,000 current users and over 125,000 individuals who desire mobility but cannot use conventional, commercially available joysticks. We developed a digital isometric, or "force-reflecting," joystick (IJ) that in a prior study performed just as well as a conventional joystick in terms of driving performance. However, we observed subjects using excessive force on the IJ possibly because its rigid post provides no positional feedback. We examined the data recorded in the previous study to characterize how subjects exert force since fatigue and weakness are concerns.



**Subjects/Procedures.** Eleven EPW users with upper limb impairments drove an EPW using an IJ with two different software applications and a conventional joystick in a driving task.

**Results.** Subjects relied upon positional feedback from the conventional joystick and used appropriate force. In contrast, subjects using the IJ with either software application applied significantly higher force

than necessary. Using higher average force was correlated with quicker trial times but not associated with accuracy.

**Relevance to wheelchair users.** Lack of positional feedback may result in use of excess isometric force. Modifying joystick software or tuning, or providing additional training or feedback might address this problem.

-Brad Dicianno, MD

## NEW HERL GRANTS

**"Acute Rotator Cuff Tendon Changes Associated with Wheelchair Propulsion."** Principle Investigator: Michael Boninger, MD. National Institutes of Health.

**"From Research Into the Clinic: The Manual Wheelchair Propulsion Database."** Principle Investigator: Rachel Cowan, M.S. Paralyzed Veterans of America Research and Education Foundation.

**"Training Rehabilitation Clinicians for Research Careers."** Principle Investigator: Michael Boninger, MD. National Institutes of Health.

**"Development of a Wheelchair Propulsion Monitoring Device."** Principle Investigator: Dan Ding, Ph.D. Paralyzed Veterans of America Research and Education Foundation.



HERL investigator Dr. Dan Ding (center) was formally presented with a \$150,000 check from the Paralyzed Veterans of America (PVA) for her grant "Development of a Wheelchair Propulsion Monitoring Device" at Keystone PVA's open house on April 13, 2007.

# HERL PUBLICATIONS

Cooper RA, Boninger ML, Spaeth DM, Ding D, Guo S, Koontz AM, Fitzgerald SG, Cooper R, Kelleher AR, Collins DM, Engineering Better Wheelchairs to Enhance Community Participation, **IEEE Transactions on Neural Systems and Rehabilitation Engineering**, pp. 438-455, Vol. 14, No. 4, December 2006.

Collins DM, Karmarkar A, Relich R, Pasquina P, Cooper RA, Review of Research on Prosthetic Devices for Lower Extremity Amputation, **Critical Reviews in Biomedical Engineering**, pp. 379-438, Vol. 34, No. 5, 2006.

Hubbard SL, Fitzgerald SG, Reker DM, Boninger ML, Cooper RA, Kazis LE, Demographic Characteristics of Veterans Who Received Wheelchairs and Scooters from the Veterans Health Administration, **Journal of Rehabilitation Research and Development**, pp. 831-844, Vol. 43, No. 7, November/December 2006.

Schopp L, Clark MJ, Hagglund KJ, Sherman AK, Stout BJ, Gray D, Boninger ML, Life Activities Among Individuals with Spinal Cord Injury Living in the Community: Perceived Choice and Perceived Barriers, **Rehabilitation Psychology**, pp. 82-88, Vol. 52, No. 1, February 2007.

Gordon AT, Lutz GE, Cooper RA, Boninger ML, Introduction to Nanotechnology: Potential Applica-

tions in Physical Medicine and Rehabilitation, **American Journal of Physical Medicine and Rehabilitation**, pp. 225-241, Vol. 86, No. 3, March 2007.

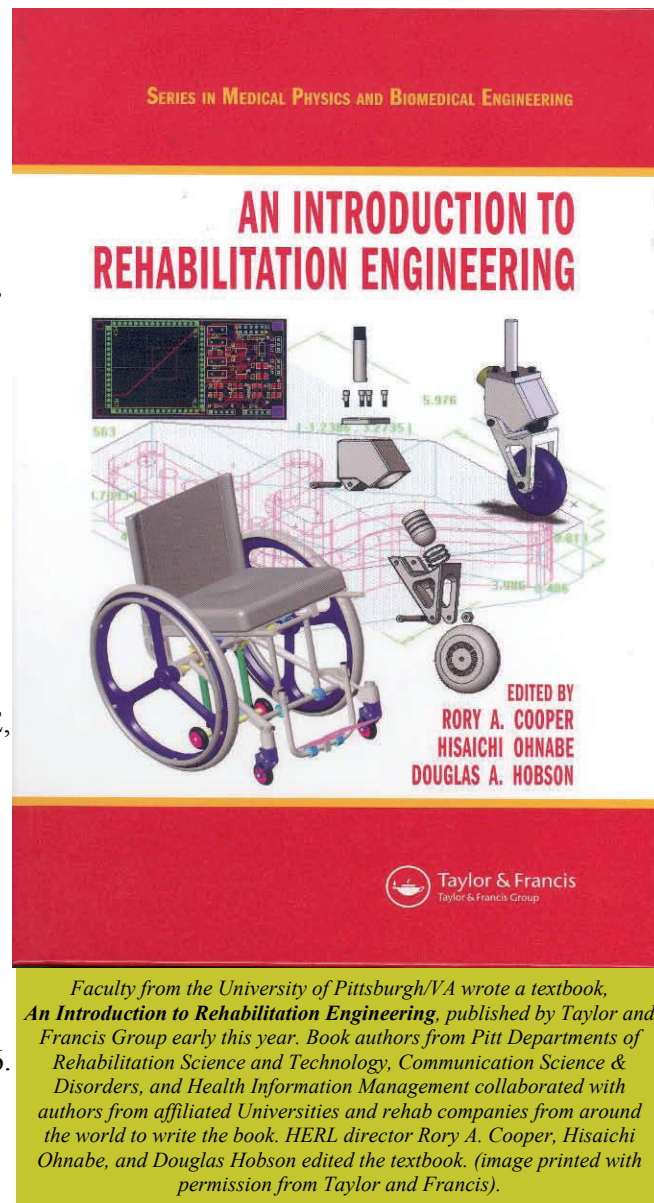
Van Drongelen S, Boninger ML, Impink BG, Khalaf T, Acute Biceps Tendon Changes After Wheelchair Sports, **Archives of Physical Medicine and Rehabilitation**, pp. 318-385, Vol. 88, No. 3, March 2007.

Fitzgerald SG, Kelleher AR, Mobility Challenges in Individuals with a Spinal Cord Injury with Increased Body Weight, **Topics in Spinal Cord Injury Rehabilitation**, pp. 54-63, Vol. 12, No. 4, Spring 2007.

Dicianno B, Spaeth DM, Cooper RA, Fitzgerald SG, Boninger ML, Brown K, Force Control Strategies While Driving Electric Powered Wheelchairs with Isometric and Movement Sensing Joysticks, **IEEE Transactions on Neural Systems and Rehabilitation Engineering**, pp. 144-150, Vol. 15, No. 1, March 2007.

Spornier ML, McClure LA, From Research to Clinical Practice, **Paraplegia News**, pp. 30-31, Vol. 61., No. 2, February 2007.

Heiner CM, Cooper RA, State of the Science, **Paraplegia News**, pp. 52-59, Vol. 61, No. 3, March 2007.





## ACCOMPLISHMENTS AND AWARDS

HERL Director **Dr. Rory Cooper**, was selected to receive the 2007 da Vinci Lifetime Achievement Award from the National Multiple Sclerosis Society Michigan Chapter. The Award

will be presented at a black tie dinner on Friday, September 28, 2007 at the Ritz Carlton Hotel in Dearborn, Michigan. The da Vinci Awards® recognize individuals, organizations and corporations in the engineering, construction and technical fields whose design innovations have exceeded legally mandated requirements, such as the Americans with Disabilities Act, to further empower people with disabilities.



Dr. Rory Cooper



HERL students **Michelle Sporner and Erin Mishey** were selected to receive the Rehab Engineering and Assistive Technology Society of North America (RESNA) student scientific paper competition award. They won for their papers, "Psychosocial Impact for Individuals with Disabilities: Do Services Dogs Help?" (Sporner) and "The GAMECycle Exercise System: Feature Improvement" (Mishey). Graduate student **Jen Mercer** also received an honorable mention for her paper, "Quantitative Ultrasound of the Biceps Tendon in Wheelchair Users and Non-Wheelchair Users"



Michelle Sporner (top) and Erin Mishey

HERL student **Joe Olson** received the Rory Cooper-Dion Johnson Best Paper Award for his paper "Iterative Design and Development of an Adjustable Folding Wheelchair for Completion of ANSI-RESNA Standards," which he will present at the 2007 RESNA Conference.

## News from the Department of Rehabilitation Science and Technology

**Katherine Seelman, Ph.D.**, Associate Dean of Disability Programs and Professor in the Department of Rehabilitation Science & Technology in the School of Health and Rehabilitation Sciences, received the 2007 University of Pittsburgh Chancellor's Distinguished Public Service Award. She was recognized for her record of national, state, and local services on behalf of people with disabilities. Dr. Seelman has served a many number of influential boards and communities, such as the U.S. International Council on Disabilities, the National Board of Certification in Occupational Therapy, and the Rehabilitation Engineering and Assistive Technology Society of North America, and is an editorial board member of the World Health Organization World Report on Disability.



Dr. Katherine Seelman

**Sue Furhman** received an honorable mention in the RESNA student scientific paper competition for her paper "Effect of wheelchair headrest use during rear impact on pediatric head and neck injury risk outcomes."

## News from the Department of Physical Medicine and Rehabilitation

The **Institute of Rehabilitation Research's (IRR) Research Day 2007** will be held on **June 6, 2007 1-6pm** at the Thomas E Starzl Biomedical Science Tower, S100, University of Pittsburgh Medical Center. The goal of IRR Day is to showcase research completed by students, residents, and fellows working in the field of rehabilitation, and includes presentations by national and international leaders in rehab sciences and medicine. The event is free and provides a maximum of 3.5 AMA PRA category 1 continuing education credits for physicians and .35 continuing education units for other rehab professionals.

Please register for IRR Day by May 25. You can register online at [www.rehabmedicine.pitt.edu](http://www.rehabmedicine.pitt.edu), by e-mail at [synnottm@upmc.edu](mailto:synnottm@upmc.edu) (include IRRDay2007 in subject line), or by mail. For more info on IRR day, contact Mary Synnott at (412) 648-6137.

## Agency Spotlight: Marine for Life

Marine For Life is a free transition assistance program that helps Marines and their families get settled back in the community when they leave active duty. The program taps into the network of Marine veterans and Marine-friendly businesses, organizations and individuals who are willing to lend a hand to a Marine who has served honorably. The Marine For Life program demonstrates that "Once a Marine, Always a Marine" is not just a slogan, but truly part of the Marine Corps ethos. Services provided include networking and assistance with employment, education, housing, childcare, veterans' benefits, and other support services needed to make a smooth transition back to the community. Over 7500 employers and over 2000 career mentors are registered with Marine for Life.



Any active duty or reserve Marine under current contract can log in the main marine for life website, <https://www.m4l.usmc.mil>, and use their available online resources. The site also provides 135 Hometown Links to over 80 metropolitan areas. A Hometown Link is a reserve Marine assigned in his/her hometown to assist Marines

returning to that area. These links connect a network of former Marines and Marine-friendly business, organizations and individuals. The priority for personal assistance from a Hometown Link goes to Marines in their transition period, which extends from 180 days before to 90 days after their end of active service date. Marine for Life also recently merged with the Wounded Warrior Program, now extending a helping hand to injured service members. -Christine Heiner

## HERL IN THE MEDIA

**Journal of Rehabilitation Research & Development, p. xi-xv, November/December 2006:** National Disabled Veterans Winter Sports Clinic  
[www.rehab.research.va.gov/jour/06/43/7/pdf/pasquina.pdf](http://www.rehab.research.va.gov/jour/06/43/7/pdf/pasquina.pdf)

**SCI Life, p. 1, November/December 2006:** 2006 Spinal Cord Injury Hall of Fame Inductees Honored at Kennedy Center Gala  
[www.spinalcord.org/news.php?dep=9&page=39&list=971](http://www.spinalcord.org/news.php?dep=9&page=39&list=971)

**ACRM Rehabilitation Outlook, p. 9, Winter 2006:** 2006 ACRM-ANSR Joint Conference

**Paraplegia News, p. 12, December 2006:** India Mobility

**Design-Inspired Innovation, p. 187-208, 2006:** Broadening Human Possibilities Through Design

**Pitt Magazine, p. 32, Winter 2006:** Lasting Impressions: Rory Cooper

**University of Pittsburgh Office of Technology Management Annual Report, 2006:** Championing Mobility

**PVA Annual Report, 2006:** The Human Engineering Research Laboratories

**Pitt Alumni Connections, p. 6-7, Winter 2007:** New Center Applies Technology, Brain Power in Search of a Better Life

**HERL director Dr. Rory Cooper visited the podcast series "Regenerative Medicine Today" at the McGowan Institute for Regenerative Medicine to share research highlights. Listen to the podcast at [www.regenerativemedicinetoday.com/](http://www.regenerativemedicinetoday.com/)**

**NSCIA SCI E-News, January 10, 2007:** Human Engineering Research Lab Meeting  
[www.spinalcord.org/news.php?dep=12&page=78&list=1031](http://www.spinalcord.org/news.php?dep=12&page=78&list=1031)

**VA Research Currents, p. 1-5, February 2007:** Evidence Based Prosthetics is Focus of New Workshop  
[www.research.va.gov/resources/pubs/docs/va\\_research\\_currents\\_feb\\_07.pdf](http://www.research.va.gov/resources/pubs/docs/va_research_currents_feb_07.pdf)

**The Statesman, March 9, 2007:** Power Wheelchair For Disabled

**Paraplegia News, p. 60, April 2007:** Projects with Promise: Development of a Wheelchair Propulsion Monitoring Device

**The Telegraph, April 2, 2007:** Wheeling Ahead  
[http://telegraphindia.com/1070402/asp/knowhow/story\\_7593046.asp](http://telegraphindia.com/1070402/asp/knowhow/story_7593046.asp)



## Web Watch

Greg Traynor, a graduate of the Rehabilitation Counseling masters program at the University of Pittsburgh and a wheelchair user, has a new website, [www.pittrehabcounselor.com](http://www.pittrehabcounselor.com). His site contains many links to adaptive sports, employment, transportation, service dogs, emergency preparedness, and computer access for people with disabilities (especially in the Pittsburgh area). Greg is a member of the Greater Pittsburgh Counseling Association, Student Representative SHRS Board at the University of Pittsburgh, Vice Chairman Consumer Advisory Council OVR: Washington, Greene and Fayette counties. Additionally, Greg runs a yahoo group called PA service dogs, where many people who use service dogs gather online. Visit <http://groups.yahoo.com/group/paservicedogs/>

Chris Glavin runs a website devoted to providing resourceful information for a number of topics in education and disabilities. He created [www.k12academics.com/cerebralpalsy.htm](http://www.k12academics.com/cerebralpalsy.htm), an information page on Cerebral Palsy (he includes information on history, cause, incidence and

prevalence, types, signs & symptoms, imaging findings, prognosis, treatment, spastic, support services, special education schools, camps, books, videos, magazines & a community discussion group with members from all over the U.S). Chris is always looking for individuals interested in providing articles, resources or have any services for individuals with Cerebral Palsy.

Assistive Technology News has launched <http://www.atechnews.com> to assist the nation's 56-million people with disabilities stay abreast of assistive technology products that enhance their independence and improve their quality of life. This web site includes new product announcements, advocate profiles, product evaluations, interviews with leaders in the public and private sectors working on disability issues, and policies that impact people with disabilities. There will be columns on Aging and Technology and Medicine Behind the Scenes, articles about users of assistive technology products, columns on AT products and profiles of AT leaders. ATN reports it is launching this service to respond to the tens of thousands of e-mails, faxes and calls it has received over the last decade.

## HERL in the Community



HERL investigators returned to the National Disabled American Veterans Winter Sports Clinic this April 1-6 in Snowmass Village, CO. Drs. Brad

Dicianno from HERL and Eric Aguila from Walter Reed Army Medical Center recruited 65 new subjects and conducted a new research study, "Acute Mountain Sickness (AMS) in Veterans with Disabilities." Veterans, especially those returning from Iraq and Afghanistan who are undergoing rehabilitation for their injuries are often exposed to high altitude environments that could potentially induce complications from AMS. The purpose of this pilot study was to examine the incidence of AMS among veterans at high altitude.

The Acquired Brain Injury News of PA E-list promotes self and family advocacy by sharing information on brain injury and other disability topics from a variety of viewpoints. Please seek further information, brochures & resources from: Acquired Brain Injury Network of PA [www.abin-pa.org](http://www.abin-pa.org)

The University of Pittsburgh School of Health and Rehabilitation Sciences is archiving presentations on the web site, [www.shrs.pitt.edu/mediasite](http://www.shrs.pitt.edu/mediasite). Visitors can watch video and listen to audio of scientific lectures of the latest research from the schools Departments, in fields such as Rehabilitation Science and Technology, Occupational Therapy, Communication Science and Disorders, and Rehabilitation Counseling. Visitors can also follow along with the actual PowerPoint presentations from the lectures.





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## ARE YOU INTERESTED IN WHEELCHAIR RESEARCH?

The Human Engineering Research Laboratories is recruiting individuals interested in participating in research studies for the **WHEELCHAIR USERS REGISTRY**. If you would like to be notified of Wheelchair related Research Studies for which you may be eligible to participate, contact The Human Engineering Research Laboratories and join the Wheelchair Users Registry. This is an informational resource and notification of a study does not obligate you to participate. You do not need to be located in nor are you required to travel to Pittsburgh in order to participate in research studies. If you are at least 18 years of age, and use a wheelchair or scooter, please contact

**Emily, Annmarie, or Michelle** for more information.

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