HERL Newsletter

News from the Human Engineering Research Laboratories Vol 20, No 1 · May 2021

Directorship Reorganization for 2021

HERL would like to congratulate Alicia Koontz, Rosemarie Cooper, Garrett Grindle, and Gina McKernan on their new roles on the HERL Directorship Team.

Alicia M. Koontz, PhD, ATP, RET joins the Executive Leadership Team as Senior Associate Director for Research, having been promoted from Associate Director of Research.
Rosemarie Cooper, MPT, ATP joins the Directorship Team as Associate Director for Stakeholder Engagement.
Garrett Grindle, PhD is now Associate Director for Engineering, having been promoted from Assistant Director for Engineering.
Gina McKernan, PhD joins the Directorship Team as Assistant Director for Data Science.

They join HERL Executive Leaders **Rory A. Cooper, PhD**, HERL Director; **Brad Dicianno, MD**, HERL Medical Director; and **Michael L. Boninger, MD**, Senior Associate Medical Director, and the other members of the HERL Directorship Team, namely: **Stacy Eckstein, BS, MT (ASCP)**, Assistant Director for Clinical and Regulatory Affairs; **Daniel Kysela, MAT**, Assistant Director for Finance and Research Administration; **Randy Williams, MBA**, Assistant Director for Education and Outreach; and **Andrea Bagay, BS, CRA**, Administrative Officer and Assistant Director for VA Finance & Research Administration.




Cooper Appointed Vice-Chancellor

HERL Director Dr. Rory Cooper has been promoted into a new position at the University of Pittsburgh as of January 1, when he will become Assistant Vice Chancellor for Research for STEM and Health Sciences Collaboration. In this position, he will provide intellectual leadership to help connect the STEM and health science areas and draw on Pitt's strengths in these fields. He will also participate in the University Research Council and work to develop institutional-level funding to support research.

The mission of the Chancellor's Office of Research for STEM-Health Sciences Collaborations is to provide a framework by which researchers from School of Computing and Information, Dietrich School of Arts and Sciences, School of Dental Medicine Education, Swanson School of Engineering, School of Health and Rehabilitation Sciences, School of Medicine, School of Nursing, School of Pharmacy, and School of Public Health can share resources in order to collaborate effectively for the good of all.

Tuakli-Wosornu Joins HERL Faculty

We'd like to extend a warm welcome to Dr. Yetsa Tuakli-Wosornu, MD, MPH as HERL's newest faculty Investigator. Dr. Yetsa Tuakli-Wosornu is a Physical Medicine and Rehabilitation physician specializing in sports and spine care, a disability rights advocate, and an elite athlete who represented Ghana in the women's long jump until 2016. As a physician-scientist, she works with numerous global sport and rehabilitation organizations and is the founding director of the Sports Equity Lab, a research group delivering athlete-centered content that tackles inequities in sport such as discrimination, social exclusion, disability stigma, harassment, abuse, and neglect, using translational bio-psychosocial science.

Left top: Koontz, Cooper
Left bottom: Grindle, McKernan
Right: Tuakli-Wosornu

20 Years of the HERL Newsletter - 2001-2021!

The first issue of the HERL Newsletter debuted 20 years ago this year. In honor of reaching this milestone, we'll revisit some of the articles from the first issue and compare *then* to *now*. A lot has changed in 20 years - but HERL is still at the forefront of asstive technology research! You can find the first issue of the HERL Newsletter, along with every other issue, online at our website. Go to **https://www.herl.pitt.edu/herl-newsletter** and see page 4 of this issue!


HERL Quarterly Newsletter

LETTER FROM THE EDITOR

CURRENT RESEARCH ABSTRACTS

Muscle Imbalance in Individuals With Multiple Sclerosis

Current Research Abstracts

Múnera S, Pearlman J, Toro M, Worobey L, Boninger M, Cooper RA, Development and efficacy of an online wheelchair maintenance training program for wheelchair personnel, Assistive Technology, pp. 49-55, Vol. 33, No. 1, 2021. https://doi.org/10.1080/10400435.2019.1619632

Objectives: To develop an online version of the wheelchair maintenance training program (WMTP) and compare learning outcomes from the in-person and online programs using the wheelchair maintenance training questionnaire (WMT-Q), administered before and after the intervention.

Design: Iterative development of an online version of the WMTP and implementation.

Setting: Online. Participants: 26 graduate and undergraduate students.

Intervention: Web-based training. These results are compared with those from another study of the in-person WMTP with 10 participants.

Main outcome measures: Feedback survey and WMT-Q.

Results: The training program was well-received and valued by all 26 participants. A significant increase in all scores after the online training program was found, based on pre-/post-intervention scores. In manual wheelchair open-ended questions, knowledge increased from 16% to 21%, $p < .05$; in power wheelchair open-ended questions, from 9% to 31%, $p < .05$; in multiple-choice questions related to knowledge, from 27% to 59%, $p < .05$; confidence increased from 8% to 80%, $p < .05$; and capacity from 12% to 88%, $p < .05$. There was no statistical difference in WMT-Q scores between individuals who participated in the in-person and online programs.

Conclusion: This study indicates that there was a similar-increased knowledge for participants, indicating that web-based training may be a viable approach for delivering maintenance training.

SUMMARY: Performance after online training programs for wheelchair maintence are similar to in-person training programs.

Ott KK, Schein RM, Saptono A, Dicianno BE, Schmeler MR, Veteran and Provider Satisfaction with a Home-Based Telerehabilitation Assessment for Wheelchair Seating and Mobility, International Jornal of Telerehabilitation, pp. 3-12, Vol. 12, No. 2, 2020. https://doi.org/10.5195/ijt.2020.6341

The objective of this project was to measure Veteran and provider satisfaction with a home-based telerehabilitation assessment for wheelchair seating and mobility. Forty-three Veterans were seen remotely at their place of residence by a provider, using a VA Video Connect synchronous videoconferencing system. Veteran and provider satisfaction were collected using the Telerehabilitation Questionnaire (TRQ). Mean individual TRQ scores for both Veterans and providers were significantly higher than the scale midpoint of 3.5. Veterans had higher scores than providers for five individual items on the TRQ. Higher scores by Veterans on the technology and quality and clarity of the video and audio likely correspond to the differences in environmental settings in which the visit occurred for the Veteran compared with the provider. High satisfaction scores with the telerehabilitation assessments are likely attributed to the positive working relationship between the provider and the rehabilitation technician, who provided in-person technical support to the Veteran in the home during the wheeled mobility evaluation. Overall, the results indicate a high level of Veteran and provider satisfaction using telerehabilitation for wheelchair seating and mobility evaluations.

SUMMARY: Telerehabilitation assessments for wheelchair seating and mobility received high satisfaction ratings among Veterans.

Kulich HR, Bass SR, Griscavage JS, Vijayvargiya A, Slowik JS, Koontz AM, An ergonomic comparison of three different patient transport chairs in a simulated hospital environment, Applied Ergonomics, 103172, Vol. 88, October 2020. https://doi.org/10.1016/j.apergo.2020.103172

The purpose of this study was to compare caregiver muscle activation and joint angles between two ergonomic transport chairs designed to mitigate discomfort and safety risks associated with patient transport, the Stryker® Prime TC and the Staxi® Medical Chair, and a depot wheelchair. Twenty-three caregivers completed level walking and ramped tasks with each device and an 84 kg manikin. Surface electromyography for the upper extremities and back muscles and motion data were collected. The Staxi showed a statistical trend for higher wrist extensor and flexor carpi ulnaris activity compared to the Stryker chair ($p \leq 0.078$) and greater wrist flexion than the Stryker and depot chairs ($p \leq 0.004$). The depot chair showed greater peak trunk flexion than the Stryker chair ($p = 0.004$). Overall results suggest that ergonomic chair design may improve joint positioning of the trunk and elbows when operating patient transport chairs over level and ramped surfaces.

SUMMARY: Ergonomic chair design may improve safety and caregiver discomfort.

Current Research Abstracts

Koontz AM, Garfunkel CE, Bass SR, Crytzer TM, Nindl BC, Feasibility, acceptability, and preliminary efficacy of a handcycling high-intensity interval training program for individuals with spinal cord injury, Spinal Cord, pp. 34-43, Vol. 59, 2021. https://doi.org/10.1038/s41393-020-00548-7

Study design: Pilot nonrandomized clinical trial.
Objectives: To examine the feasibility, acceptability, and preliminary efficacy of performing handcycling high-intensity interval training (HIIT) for 6 weeks in wheelchair users with spinal cord injury.
Setting: Participant's home.
Methods: Participants completed pre- and postgraded exercise stress tests, exercise surveys and 6 weeks of handcycling HIIT. The HIIT program consisted of two weekly, 25 min supervised at-home sessions (2–3 min warm-up, then ten intervals of cycling with a ratio of 1 min work at 90% peak power output (PPO) to 1 min recovery at 0–20% PPO, then 2–3 min cool down). Real-time power output and heart rate were recorded via sensors and a bike computer. The sensor data were analyzed to evaluate training efficacy.
Results: Seven of the ten enrolled participants (70%) completed the study. All but one completed the required 12 sessions. The participants met at least 1 of the HIIT target intensity criteria in 76 out of 89 total sessions (85.4%) performed. Participants expressed a high level of enjoyment on the Physical Activity Enjoyment Scale, mean (SD) = 114.8 (11.3), and satisfaction with the overall experience. Five of the seven participants (71%) who completed the study felt an increase in endurance, function, and health. Objective physiological changes showed mixed results.
Conclusions: Six weeks of handcycling HIIT appears to be safe, feasible and acceptable. A longer HIIT work interval may be needed to elicit significant physiological responses. Future investigation of the feasibility and efficacy of differing HIIT parameters is needed.

SUMMARY: Handcycling high-intensity interval training appears to be safe, feasible, and acceptable. More research is needed.

Marino DJ, Williams R, Koontz AM, Cooper RA, The American Student Placements in Rehabilitation Engineering Program (ASPIRE), Disability and Rehabilitation, pp. 2821-2827, Vol. 42, No. 19, 2020. https://doi.org/10.1080/09638288.2019.1571639

Background: American Student Placements and Internships in Rehabilitation Engineering is founded on the principal of sparking the interest in a new generation of rehabilitation engineering scientists to transform the lives of older adults and people with disabilities. Each year a minimum of 10 students were enrolled.
Methods: The internship runs for 10 weeks and activities center on developing excitement about technology and engineering and understanding the principles and processes of conducting rehabilitation engineering research. This was accomplished by student participation in 1) rehabilitation engineering research projects; 2) educational research training, and 3) professional activities with clinical and engineering faculty, staff, and graduate students. Of the 162 participants, 53% were women and 47% men. 23% of participants were from minority or underrepresented groups, and 18% identified as having a disability.
Results: From post-internship follow-up efforts, 65% of program participants went on to pursue or have graduated with advanced degrees, 27% of whom are engineers from underrepresented groups. Of those students that are working post-baccalaureate, 70% are engineers working in a biomedical/technology field. In the past 3 years, 92% of students stated that the program met or exceeded their expectations, while 100% of the 2018 group felt that their expectations were met.
Conclusion: The American Student Placements and Internships in Rehabilitation Engineering program has demonstrated efficacy in preparing undergraduate students for future academic work and employment.

SUMMARY: The ASPIRE program succeeds in preparing undergraduates to future employment.

Worobey LA, Rigot SK, Boninger ML, Huzinec R, Sung JH, DiGiovine K, Rice LA, Concurrent Validity and Reliability of the Transfer Assessment Instrument Questionnaire (TAI-Q) as a Self-Assessment Measure, Archives of Rehabilitation Research and Clinical Translation, 100088, Vol. 2, No. 4, December 2020. https://doi.org/10.1016/j.arrct.2020.100088

Objectives: To evaluate the psychometric properties of the Transfer Assessment Instrument Questionnaire (TAI-Q), a self-assessment measure to evaluate transfer quality compared with clinician-reported measures.
Design: Participants self-assessed transfers from their wheelchair to a mat table using the TAI-Q. For session 1, participants self-assessed their transfer both before and after reviewing a video of themselves completing the transfer (session 1). Self-assessment was completed for another transfer after a 10-minute delay (session 2, intrarater reliability) and after a 1- to 2-day delay (session 3, test-retest reliability). Self-assessment was compared with a criterion standard of an experienced clinician scoring the same transfers with the Transfer Assessment Instrument (TAI) version 4.0 (concurrent validity).
Setting: 2017 National Veterans Wheelchair Games.
Participants: Convenience sample of full-time wheelchair users (N=44).
Main Outcome Measures: TAI-Q and TAI.
Results: After video review of their transfer, acceptable levels of reliability were demonstrated for total TAI-Q score for intrarater (intraclass correlation [ICC], 0.627) and test-retest reliability (ICC, 0.705). Moderate to acceptable concurrent validity was demonstrated with the TAI (ICC, 0.554-0.740). Participants tended to underestimate the quality of their transfer (reported more deficient items) compared with the TAI. However, this deficit decreased and reliability improved from pre-video review to post-video review and from session 1 to session 2. The minimum detectable change indicated that a change of 1.63 to 2.21 in the TAI-Q total score is needed to detect a significant difference in transfer skills.
Conclusions: When paired with video review, the TAI-Q demonstrates moderate to acceptable levels of reliability and validity for the total score. Self-assessment was completed quickly (<5min) and could help to potentially screen for deficiencies in transfer quality and opportunities for intervention.

SUMMARY: The TAI-Q shows moderate to acceptable levels of reliability and validity when self-assessed.

20 Years - Then and Now!

THEN: An Improved Joystick Makes Power Wheelchairs Easier to Drive

Research suggests that 40 out of every 100 persons who want to drive an electric wheelchair cannot do so. One reason for this is that many persons have problems controlling the movement of their hands. Unwanted wobbling of the joystick handle while driving can send the wheelchair crashing into walls and furniture and possibility injure the occupant. For many years, HERL has been developing a new type of joystick. On this joystick, the handle doesn't move at all; it is rigid just like the stick in a Popsicle or candy apple. Instead of moving the shaft, you press firmly against the handle. The harder you push, the faster the chair will go. - *Donald M. Spaeth, MA, ATP*

NOW: Improved joysticks are everywhere! HERL's improved joystick is now standard equipment on many power wheelchairs. If you use a power wheelchair, chances are that your chair is equipped with the joystick created by HERL ten years ago.

THEN: Determining The Effectiveness Of The GAMECycle As An Exercise Device

The GAMECycle system is an arm-crank that is interfaced with a personal computer. The interface then connects to the gameport of a personal computer and controls gameplay. The game used for this study was Need For Speed II™. Thirteen participants gave written informed consent before taking part in the study. The average age was 42 years and their injury levels ranged from C5-6 to T12-L1. All were Veterans. Two trials were performed. One trial consisted of using the GAMECycle while playing Need For Speed™. The second trial consisted of spinning the arm-crank without gameplay. After the trials the participants completed a questionnaire covering the ease of operation and if the system would help to motivate them to exercise. - *Sean A. Reeves, BS*

NOW: The GAMECycle was effective. GAMECycle technology was eventually licensed and was an essential part of the assistive sports technology movement that recognized that recreation and exercise not only helps people with disabilities stay fit, but helps connect them with their communities. Unfortunately, GAMECycle is no longer being produced.

Meet an Alum: Diane M. Collins, PhD

Dr. Collins is currently Associate Professor and Researcher at The University of Texas Medical Branch. She earned a BS in Occupational Therapy from Wayne State University in 1981, an MA in Management from Webster University in 1990, and a PhD in Rehabilitation Science and Technology from Pitt in 2004. She was on the faculty of HERL from 2004 to 2012. Dr. Collins is an innovative occupational therapist, researcher and clinician currently teaching Occupational Therapy Master students the topics of Management, Psychosocial Practice, Legal and Ethics, and Research Methods. Her research interests focus improving the quality of life for adolescents and young adults with autism spectrum disorders and spina bifida through provision of assistive technology, environmental modification, and occupational therapy interventions.

New Patents

- U.S. Patent D911,338 - a design patent for a computer mouse that can be easily operated by people who use prosthetic hands. This is very similar to our previous patent D894,899, but that was for the design of the buttons on the mouse. This patent is for the shell of the mouse.
- U.S. Patent 10,912,688 for the Mobility Enhancement Robotic Wheelchair, aka MEBot. MEBot consists of six height-adjustable wheels with a modular drive-wheel configuration. MEBot includes features such as seat-leveling to increase the user's stability when driving over uneven terrains, and a curb negotiation application to improve accessibility for optimal maneuvering in indoor and outdoor environments.

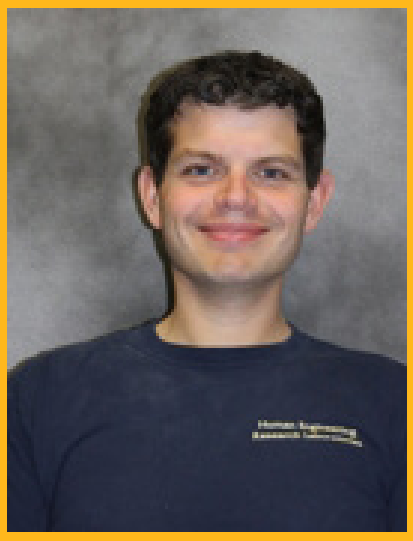
THEN: Braking Kinetics in Wheelchair Propulsion: Evaluation of a New Ergonomic Pushrim

Wheelchair handrims have been limited to round designs for over 50 years. However, manual wheelchair users have found that the standard pushrim is difficult or uncomfortable to grasp and often rely on the tires for increased traction. They also have difficulties with controlling and braking their wheelchair. For these reasons, a new pushrim was developed which provides a larger area for grasping and braking, a special coating on the top surface for increased gripping ability, and a contoured shape for an improved fit to the hand. A study was conducted to evaluate braking ability when using the new pushrims.

NOW: The pushrims were a massive leap forward in wheelchair ergonomics.

The pushrims, marketed as the Surge and the Natural-Fit, have now sold hundreds of thousand of pairs and kept untold numbers of wheelchair users safer, not just with improved braking, but by putting less stress on the shoulders, wrists, and hands of the pushrim users.

THEN:



Corey Blauch was profiled as the Featruered HERL Student. He joined HERL in 2000 and was working on his Masters degree.

NOW:

Corey Blauch received his M.S. degree in 2003. From 2010-2011, he rejoined HERL as a Research Engineer. In 2011, he became a Design Engineer at Permobil in Nashville, Tennessee, where he works today.

THEN: Dr. Alicia Koontz was featured in her new role as Rehabilitation Health Scientist after joining HERL in October 2000.

NOW: Dr. Koontz remains at HERL as part of the directorship team as Senior Associate Director of Research.

To Our Stakeholders

Thank you to our community partnerships and stakeholders for your ongoing participation and contribution to the research efforts of the Human Engineering Research Laboratories (HERL). The work we do every day would not be possible without your unwavering involvement and support.

In March of 2020, when the whole world hit the pause button due to the ongoing Coronavirus Pandemic, HERL and the Craig H. Nielsen Foundation recognized that there was a greater need for additional community support, especially for those individuals considered to be in vulnerable populations, such as individuals with Spinal Cord Injury.

HERL applied for and was awarded funding through a grant from the Nielsen Foundation, which specified that the awarded funds were to be used to provide additional support to individuals in our local communities who have been hit hard by the ongoing global pandemic. Upon receipt of the grant, HERL immediately began selecting individuals from our research participant registry to receive the subsistence funds in the form of a $500 gift card for use at Giant Eagle, another community-based organization who has been longtime community partner of HERL's. Members of the Stakeholder Engagement Team at HERL hand delivered gift cards to 40 recipients.

We would like to sincerely thank each of our community partners for their ongoing support and would also like to thank all of our friends and participants for continuing to contribute to HERL's research initiatives. We truly value and appreciate you for everything that you do.

Virtual State of the Science Symposium
December 16, 2020
Telemedicine and Rehabilitation in the CoViD-19 Era

The State of the Science Symposium entitled "Telemedicine and Rehabilitation in the CoViD-19 Era" met online on December 16, 2020 via Microsoft Teams. The symposium was presented by the Center for Rehabilitation Science Research, the Department of Physical Medicine and Rehabilitation at The Uniformed Services University for the Health Sciences; the Department of Rehabilitation, Walter Reed National Military Medical Center; the Human Engineering Research Laboratories (a VA RR&D Center); and the University of Pittsburgh School of Health and Rehabilitation Sciences, Department of Rehabilitation Science and Technology. Course Directors were Rory A. Cooper, PhD and COL (Ret) Paul F. Pasquina, MD.

Presentations at the Symposium:

A Brief History of Telerehabilitation - Ronald K. Poropatich, MD, MS, University of Pittsburgh

UPMC Center for Assistive Technology Standards for and Implementation of Telerehabilitation - Joseph Straatmann, OT, University of Pittsburgh

Telerehabiliation for Limb Loss - Steven Scott, MD and Patty Young, PT, US Department of Veterans Affairs

CoViD-19 Deployment Response: Lessons Learned - MAJ Michelle Nordstrom, Uniformed Services University of the Health Sciences

University of Pittsburgh Medical Center PM&R Telerehabilitation - Betty Liu, MD, University of Pittsburgh

CoViD-19 Effects on In/Outpatient Care - MAJ Michelle Luken, Uniformed Services University of the Health Sciences

Videos, presentations, and photos from archived symposia are available on the HERL website at **https://herl.pitt.edu/education-outreach/symposia**.

To be added to the mailing list, email michael.lain@pitt.edu.

Meet Your Army Updates

Meet Your Army is a monthly series of interviews by HERL Director Dr. Rory Cooper with notable people serving in the United States Army, Veterans of the U.S. Army, or otherwise attached to the Army. The interviews can be attended syncronously online via Microsoft Teams, or watched or listened to asyncronously from the HERL website at https://herl.pitt.edu/meet-your-army. Each interview is presented in downloadable video and audio formats.

- December 2020: **SMA(Ret) Daniel A. Dailey**

SMA(Ret) Daniel A. Dailey served as the 15th Sergeant Major of the Army from January 30, 2015 to August 9, 2019. He is decorated with the Bronze Star Medal with Valor for his leadership during the Siege of Sadr City.

- January 2021: C**OL Andrew J. "Coby" Short**

COL Short is Commander, Pittsburgh District, U.S. Army Corps of Engineer. One of 43 Corps of Engineers districts, Pittsburgh District covers an area of approximately 26,000 square miles comprising the upper Ohio River Basin and extending into five states: Pennsylvania, West Virginia, Ohio, Maryland and New York.

- February 2021: **COL(Ret) Douglas Matty**

Dr. Douglas Matty is the Director, Army Artificial Intelligence Capabilities. His organization is responsible for the development, coordination and synchronization of Artificial Intelligence capability development for the Army. This includes all aspects of AI-enhanced capabilities, particularly materiel and workforce development.

- March 2021: **SSG(Ret) David Bellavia**

SSG Bellavia received the Medal of Honor for his actions on November 10, 2004, as a member of Company A, Task Force 2-2, 1st Infantry Division.

- April 2021: **MG(Ret) John L. Gronski**

MG Gronski is founder and CEO of Leader Grove LLC, an adjunct fellow with the Center for European Policy Analysis, and director of the leadership academy for student-athletes at Lebanon Valley College. He is also a leadership consultant and trainer, author, professional speaker, and executive coach. His presentations feature inspirational stories and wisdom gained from his own operational leadership experience and the experience of others. Order his new book *Iron-Sharpened Leadership* at https://store.leadergrove.com/collections/frontpage/products/iron-sharpened-leadership.

HERL News & Notes

• HERL's Dr. Mary Goldberg has debuted a new podcast called ImpacTech about successful Assistive Technology Tech Transfer. Her first guest is Steve Sutter, President of CreateAbility Concepts, Inc about his mission of building technology to make independence possible. *https://impactech.simplecast.com/episodes/creating-tech-to-enable-independence*

• More than 200 people watched HERL's Dr. Dan Ding and Lindsey Morris's presentation at the 2020 Assistive Technology Industry Association Conference about the development of the ASSIST Functional Performance Index. *https://assistdrrp.pitt.edu/304-2/*

• Two recent studies from the University of Pittsburgh conducted at HERL and published in the International Journal of Telerehabilitation show that telehealth can be effective in providing complex rehabilitation technology—devices like wheelchairs that are custom-fitted for individuals—to Veterans. Read more at Pittwire here: *https://www.pittwire.pitt.edu/news/telehealth-effective-preferred-mobility-equipment-adjustments-veterans*

• HERL Research Assistant Libby Powers is featured in an excellent article from PublicSource about public transit in Pittsburgh during COVID. *https://www.publicsource.org/covid-public-transit-port-authority-pittsburgh-allegheny-county-fare-2021*

• Dick Thornburgh, a great friend to HERL and all with disabilities in Pennsylvania and the entire country, passed away on December 31, 2020. Thornburgh served as Governor of Pennsylvania and U.S. Attorney General and played a key role in negotiating compromises with Congress that led to the ultimate passage of the Americans with Disabilities Act. He was 88.

• HERL made a great showing for Pitt's Day of Giving 2021, finishing fifth in our category – almost beating out the Pitt Alumni Association! - with 151 donors for a bonus of $1500. Thanks to all who donated!

• The latest Impact Spotlight on the Lemelson Foundation's website focuses on HERL Director Dr. Rory Cooper. How Adversity Led to a Lifetime of Engineering and Invention: *https://www.lemelson.org/how-adversity-led-to-a-lifetime-of-engineering-and-invention/*

STUDY RECRUITMENT

If you're interested if participating in HERL research studies, please be sure to check **https://www.herl.pitt.edu/participate** regularly! We're currently recruiting for the following studies:

- **Wheelfit**
- **KeepMvn App (Wheelchair Maintenance App)**
- **Brain Computer Interface (BCI)**
- **Activity Monitoring in Individuals with Spinal Cord Injury**
- **Development and Evaluation of Powered Personal Transfer System (PPTS)**
- **Evaluation of a Group 3 PPTS Focus Group**

Please also sign up for our Registry if you'd like to be notified about research studies in the future. **https://sbs.ucsur.pitt.edu/herl/**

• 2020 marked the 30th anniversary of the Americans with Disabilities Act, commonly referred to as the ADA, and the 75th anniversary of the National Disability Employment Awareness Month (NDEAM). NDEAM helps to bring focus on the value the people with disabilities bring to the University of Pittsburgh community and the role that the University plays in preparing people with disabilities for employment. Dr. Rory Cooper was featured in a video commemorating NDEAM produced by the University of Pittsburgh: *https://vimeo.com/473056337*

• The University of Rhode Island's 2020 Honors Colloquium, coinciding with the 30th anniversary of the Americans with Disability Act, focuses on the views and expectations of those affected by disability, steering away from the impossible to the possible. Dr. Rory Cooper spoke on November 17. View his presentation and all Colloquium presentations at *https://web.uri.edu/hc/2020-challenging-expectations-disability-in-the-21st-century/*

• At the end of October, the University of Pittsburgh's Office of Diversity and Inclusion hosted two discussion panels to build awareness of opportunities for and the accomplishments of people with disabilities in the workplace, as well as how Pitt is addressing the challenges and successes that individuals with disabilities face every day. HERL's Rory Cooper and Libby Powers took part. *https://www.pittwire.pitt.edu/news/disability-advocates-still-fight-progress*

• HERL Director Dr. Rory Cooper contributed to a new digital publication, "Inclusive Digital Interactives: Best Practices + Research," which aims to spur innovation, encourage information sharing and motivate cultural organizations to consider accessible and inclusive digital interactive design as an essential component of their work. *https://www.si.edu/newsdesk/releases/new-publication-shares-ways-museums-be-accessible-and-inclusive*

• Congratulations to Dr. Lin Wei, who graduated and will start a new position at the University of Texas.

• The winner of the three-year Toyota Mobility Challenge is Phoenix Instinct from the UK. The company will receive $1 million to further develop its intelligent ultra-light carbon fiber wheelchair, bring it to market, and hopefully transform millions of lives in the disability community for the greater good. HERLled the assessment and helped to design the judging criteria and select the judges for the Mobility Challenge. *https://futurride.com/2020/12/24/phoenix-instinct-wheelchair-wins-toyota-mobility-unlimited-challenge*

• Congratulations to our friend Ryan Davis and the Technology Transfer Team at the U.S Department of Veterans Affairs! Ryan has been instrumental in helping to protect some of HERL's intellectual property in order for Veterans and all U.S. citizens to benefit from it. Davis was selected as Rookie of the Year—an award for someone in a position for no more than three years. From his Washington, D.C., work site, he manages all VA tech transfer activity across a wide swath of the U.S., overseeing patent applications and looking for people within various industries to partner with VA researchers or further develop their ideas. *https://www.pittwire.pitt.edu/accolades/ryan-davis-law-16-honored-veterans-tech-transfer-work*

Human Engineering Research Laboratories

VA Center for Wheelchairs and Assistive Robotics Engineering

University of Pittsburgh
School of Health & Rehabilitation Sciences
School of Medicine

University of Pittsburgh
NIDILRR Model Center on Spinal Cord Injury

National Science Foundation
Advanced Technology Education Center

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Director

Brad Dicianno, MD
Medical Director

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Assistant Director for Finance & Research Administration

Gina McKernan, PhD
Assistant Director for Data Science

Randy Williams, BA, MBA
Assistant Director for Education & Outreach

Andrea Bagay, BS, CRA
Admimistrative Officer and Assistant Director for VA Finance & Research Administration

Jerry "Bull" Baylor
1946-2020

Jerry "Bull" Baylor, Paralympian, National Veterans Wheelchair Games "Spirit of the Games Award" recipient, and regular contributor to HERL research, passed away Thursday, August 27, 2020, at the VA Hospital in Pittsburgh. We at HERL will miss him very much.

WOULD YOU LIKE TO GET INVOLVED?

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