Front cover:
Dr. Hongwu Wang uses a JACO arm—soon to be part of the next generation of Personal Mobility and Manipulation Appliance (PerMMA)—to develop standards for rating robotic arms.
VAPHS Research Portfolio

Active Research Projects

286
Total Projects

117
Active Investigators

80% Human Subjects

14% Animal Subjects

6% Basic Science

VAPHS Research at a Glance

$32,415,201
Total Research Expenditures for FY 2015

$11,656,920
Veterans Affairs

$18,265,500
National Institutes of Health

$1,857,318
Veterans Research Foundation of Pittsburgh

$806,745
Other

63 VA Funded Research Projects for FY 2015

14 Biomedical Laboratory Research and Development

4 Clinical Science Research and Development

18 Health Services Research and Development

20 Rehabilitation Research and Development

7 Cooperative Studies Program
### 2015 HIGHLIGHTS

<table>
<thead>
<tr>
<th>Category</th>
<th>Quantity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Active research projects</td>
<td>66</td>
</tr>
<tr>
<td>Active investigators</td>
<td>10</td>
</tr>
<tr>
<td>VA funded research projects</td>
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<tr>
<td>University of Pittsburgh and VA funded research projects</td>
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<tr>
<td>VA funding</td>
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<td>NIH funding</td>
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<td>Veterans Research Foundation funding</td>
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</tr>
<tr>
<td>Patents pending</td>
<td>8</td>
</tr>
</tbody>
</table>

HERL's patented projects were featured at the National Museum of American History’s Innovation Festival in Washington, D.C. on September 26 and 27, 2015. The event was a collaboration between the Smithsonian Institution and the United States Patent and Trademark Office, and showcased patented technologies and intellectual property systems. HERL was one of 13 organizations selected to participate.

Herl attended the ADA: 25 Years of Disability Civil Rights at the Smithsonian, the Kennedy Center for the Performing Arts and the National Endowment for the Arts.

### 2015 Awards:

- Rory A Cooper, PhD – Catalyst Award, Carnegie Science Center: For being an extraordinary successful agent for positive change in Science, Technology, Engineering, and Mathematics.
- Brad Dicianno, MD – University of Pittsburgh Honors Convocation Faculty Honoree.
- Michael Boninger, MD – 2015 Outstanding Commitment to Excellence in Research to Improve Veterans’ Lives, the VA Pittsburgh Healthcare System Office of Research and Development | John Stanley Coulter Award, October 2014.

### HERL in the News:

- Local ABC station WTAE did a news report featuring HERL and its work with Veterans.
- Time Magazine’s video producers visited Pittsburgh in July for a video on the city of Pittsburgh’s ongoing renaissance, including the HERL laboratories. The producers were so impressed, they made a separate video focused on HERL’s work.
- HERL was featured on Pittsburgh’s CBS affiliate, KDKA.
- HERL and its director, Dr. Rory Cooper, were the cover story for the summer 2015 issue of Pitt Magazine.
- HERL Director Dr. Rory Cooper was featured in an article in September issue of the American Society for Engineering Education magazine, PRISM.

### HERL Online:

- VA VISN 4 produced a video focused on new capabilities in 3D printing. HERL uses this technology to benefit Veterans and can literally print anything that can be created on a computer, in either plastic, metal or rubber.
- University of Pittsburgh’s Student Disability Advocacy group — many of whom are also HERL researchers — created a video entry for the I Want to Work PA
campaign. I Want to Work PA ensures young adults with disabilities get the employment opportunities they rightfully deserve to live full, independent lives.

- National Veterans Wheelchair Games Dallas created a video on adaptive technology advances and how they are used to help Veterans and people with disabilities.

Key publications:

One of the key missions of GRECC is to advance scientific knowledge regarding such needs and the methods of meeting those needs by facilitating a higher quality of geriatric care through:
- geriatric and gerontological research.
- training of health personnel in the provision of health care to older individuals.
- development and evaluation of improved models of clinical service for older Veterans.

GRECC research focuses on areas such as:
- neuronal cell death in stroke and neurodegenerative diseases.
- hearing, communication disorders, and aphasia.
- rehabilitation in stroke and aging.
- polypharmacy.
- pain assessment and treatment in the elderly.
- barriers to delivery of care to the elderly.
- stroke-related outcome measures.
- avoiding inappropriate prescribing and medication errors in long term care.
- geriatric cardiology.

**2015 HIGHLIGHTS**

- **89** Peer-reviewed publications
- **51** Extramurally funded projects
- **$2,732,261** In VERA research funding estimated for VAPHS
- **52** Editorial review boards with 15 GRECC faculty members
CHERP’s mission is to advance the quality and equity of health and health care for Veterans through rigorous health services research, multidisciplinary collaborations with investigators from other VA research centers and academic institutions, partnerships with operations and policy stakeholders, research training and mentoring, and service to VA partners, other federal agencies, and national organizations. In addition to our primary research focus on improving the quality and equity of health and health care for vulnerable populations, CHERP has a secondary research focus on improving the effectiveness, safety, and value of clinical therapeutics (i.e., medications, devices, procedures) in the VA and beyond.

CHERP supports 33 core and affiliate investigators engaged in health services research at VAPHS, including 13 physician investigators trained in various clinical specialties (i.e., cardiology, critical care medicine, gastroenterology, geriatric medicine, internal medicine, psychiatry, surgery, and women’s health) and 20 PhD investigators with advanced training in biostatistics, communication, health behavior, nursing, pharmaceutical sciences, public health, psychology, sociology, and systems engineering.

2015 Key Impacts:

- Dr. Hausmann was selected for the Secretary's 4th Annual Diversity and Inclusion Excellence Awards Program. Her nomination for this prestigious national award from recognized her leadership and innovation in the areas of workplace diversity and inclusion.
- Drs. Rogal, Fine, Good, and Myaskovsky partnered with VA Pharmacy Benefits Management to develop cost and cost-effectiveness models to inform national antiviral prescription policies for Veterans with hepatitis C virus.
- Drs. Zickmund, Borroto, Burkitt, Fine, Gao, Gellad, Good, Hausmann, Mor, Stone, Switzer, C Thorpe, and J Thorpe partnered with PBM to examine the impact of the Veterans Choice Program (VCP) on Veteran satisfaction with health care, medication therapy, and pharmacy benefits, and to understand how the VCP impacts the quality, safety, and cost of VA medication therapy.
- Dr. Myaskovsky partnered with the Veterans Engineering Resource Center (VERC) to evaluate a cloud-based application to facilitate transitions from inpatient to primary care and to develop a tool that is now used by VA Pittsburgh kidney transplant team to track post-donation health and quality of life outcomes for all living kidney donors.
- Dr. Rodriguez partnered with VERC to learn about the experiences, backgrounds, and needs of hospitalized
Veterans with common medical conditions (e.g., heart failure, pneumonia) in order to better understand the reasons for hospital readmission and to determine how primary care no-show rates vary by patient age, gender, and appointment lead time.

- Dr. Zickmund was appointed to chair the new Patient Engagement Workgroup charged to advise HSR&D leadership about how to increase Veteran engagement in setting VA research priorities.

- Preliminary findings from Dr. Zickmund’s mixed methods study to assess racial, ethnic, and gender differences in satisfaction with care within 16 domains for >1,200 Veterans receiving health care at 25 VAMCs nationwide were presented to the VA National Leadership Council and are being used to develop new survey items to measure Veteran satisfaction and trust in VA.

- Dr. J Thorpe is partnering with the Office of Quality and Performance Data Center to apply methods he developed for his CHERP pilot project, “Developing a Typology of Veterans’ Healthcare Experiences,” to support real-time data collection for the Survey of Healthcare Experience of Patients.

- CHERP investigators, led by Dr. Hausmann, partnered with the Office of Health Equity and VISN4 to reduce racial disparities in blood pressure control among VISN4 Veterans with hypertension (HTN). Over a 15-month period, the team documented the development and roll-out of the quality improvement initiative, described the intervention strategies implemented, assessed barriers to implementation, and assessed the impact of the initiative on blood pressure control among black and white Veterans with HTN across the VISN and at individual facilities. This initiative achieved modest success in improving blood pressure control among black Veterans with severe HTN and reducing the racial disparity in this measure in VISN4 over time.

- Dr. Hall developed a frailty risk calculator based on findings from a paper he published in JAMA Surgery in November 2014 describing a screening program to identify frail surgical patients that was associated with reduced mortality for surgical patients referred to palliative care consultation. The tool was deployed at VAPHS this year, where all frail surgical patients are referred to palliative care to facilitate patient-centered surgical care. The tool is also being deployed to several other VA sites and UPMC Healthcare System.

- Dr. Chinman’s research on the deployment of peer specialists in the VA published in the Journal of Behavioral Health Services & Research (January 2015) was highlighted in the Spring 2015 edition of VA Research Currents, an electronic publication by VA ORD designed to share research news with internal and external stakeholders.

- Dr. Broyles chaired the interdisciplinary committee charged to implement the new Joint Commission measures for alcohol- and tobacco-related care for hospitalized patients at VAPHS. This effort included modifying existing processes and procedures to support the implementation, securing buy-in from administrators and clinical staff, developing CPRS templates for the new measures, and training staff across disciplines and service lines.

- National leaders in VA Women’s Health Services requested preliminary findings from Dr. Borrero’s study on contraceptive use and unmet need among women Veterans for their reports to the Senate Committee on Veterans Affairs, the VA Under Secretary for Health, the Office of Management and Budget, and the American Congress of Obstetricians and Gynecologists Panel on Reproductive Health in Women Veterans.

- Dr. Gordon was among nine VA leaders nationally invited to update the VA/Department of Defense Substance Use Disorders Clinical Practice Guidelines that will provide clear and comprehensive evidence-based recommendations to improve patient outcomes and local management of patients with substance use disorder.
• Dr. Gordon produced a monthly webinar and newsletter for VA providers that disseminated evidence-based guidance for buprenorphine in the VA.

• A commentary by Dr. Gellad published in the Journal of General Internal Medicine regarding the risk of care fragmentation for Veterans who use both the Veterans Choice Program and the VA Healthcare System was briefed to VA senior leaders.

• Dr. Gordon was one of 11 national experts who developed the American Society of Addiction Medicine Guideline for the Use of Medications in the Treatment of Addiction Involving Opioid Use. This evidence-based guideline for prescribing of pharmacotherapies for opioid addiction and payer coverage standards was released in May 2015. The impact of the guideline is anticipated to be large, given that 2.1 million Americans live with opioid addiction, overdose deaths are increasing in prevalence, and the societal costs of opioid misuse are estimated to be >$55 billion per year.

• Dr. Gordon was invited to participate in a White House Symposium in September 2015 convened to advance prevention and treatment of unhealthy substance use.

• Dr. Blosnich’s paper published in LGBT Health reporting that the crude suicide rate among Veterans with transgender-related diagnoses was higher than in the general population and that transgender Veterans may be dying by suicide at younger ages than their Veteran peers without transgender-related diagnoses was briefed to VA senior leaders. Dr. Blosnich was subsequently invited to present this research during a national conference call with VA Suicide Prevention Coordinators.

• An editorial by Drs. Broyles and Gordon published in Substance Abuse received the journal’s 2014 award for “Most Downloaded Manuscript.” At the time of the award in October 2014, the editorial had more than 2,400 full-text downloads and was the most downloaded article of all time.

• Dr. Gellad, Director of CHERP’s Clinical Therapeutics Research Program, convened and directed the inaugural Pittsburgh Conference on the Science of Medication Adherence at the University of Pittsburgh. The conference brought together experts from academia, industry, and government from across disciplines, to focus on the science of adherence measurement. More than 100 meeting participants collaborated to address 2 issues central to this topic: (1) measuring adherence in patients taking multiple medications for multiple chronic conditions; and (2) measuring adherence longitudinally.

**New VA HSR&D Research Awards Funded:**

- Staying Positive: An Intervention to Reduce Osteoarthritis Pain Disparities (Hausmann)
- Comparison of e-Health vs. In-person Delivered Family Psychoeducation Treatment (Rotondi)
- Safety of Opioid Use among Veterans Receiving Care in Multiple Health Systems (Gellad)
- Differences in Satisfaction with Choice: Laying the Foundation for Evaluation of the Choice Act (Zickmund)

**Research Training:**

Renewed our Office of Academic Affiliations (OAA) post-doctoral training program in health services research that provides fellows with advanced training in health services research, implementation science, and health system quality improvement; mentored research experiences; and competency in interprofessional collaboration. In addition, Drs. Gordon and Broyles secured OAA funding to establish a national coordinating center for the 7 VA sites (including VAPHS) that host OAA training programs in addiction research and treatment. In FY15, CHERP provided training for 6 OAA fellows in health services research (2), addiction research and treatment (3), and women.
Significant accomplishments of MIRECC researchers:

- Dr. Gerald Goldstein celebrated 60 years of service.
- Dr. Adam Bramoweth was awarded a VA Health Services Research and Development, Career Development Award, Implementation of Brief Treatments for Insomnia in Primary Care.
- Matthew Chinman, PhD, was awarded QUERI funding for his project ($790,074, 10/1/15-9/29/19), Evaluation of Peer Specialists on VA PACTs.
- Dr. Kasckow and his research team received an Award of Excellence: Top Contributing Site for CSP 576, VA Augmentation and Switching Treatments for Improving Depression Outcomes (VAST-D).
- MIRECC Pilot Project, Homeless Veterans’ Opinions of Integrated Care Environments, PIs: Lauren M. Broyles, PhD, RN/Michael Mitchell, provides first-hand insight on barriers to health care for Veterans experiencing housing instability. The study was featured at two VA Pittsburgh events, in local newspapers and radio, and will be featured at the Phipps Conservatory and Botanical Gardens in the spring.
- Armando Rotondi, PhD, is the Site PI for Secure Messaging Impact on Access: A Supported Adoption Intervention, recently funded by Quality Enhancement Research Initiative (QUERI) and the VA Office of Telehealth Services/Connected Health.
- Robert Sweet, MD, is the PI for a newly-funded project, Neuropathology of Psychosis in Alzheimer’s Disease, as part of the successful 2015 competing renewal of the University of Pittsburgh’s Alzheimer’s Disease Research Center.

Educational Highlights:

- PTSD and Cardiometabolic Issues: The Mind-Body Interaction, presented at VAPHS by T. Barry Levine, MD, FACC.
- VA Senior Research Career Scientist Jeffrey Yao, PhD, was invited to be the keynote speaker at the Beijing Psychiatry Conference in May 2015.

Highlights of VA Advanced Fellowship Program in Mental Illness Research and Treatment postdoctoral fellows:

- Elizabeth Dinapoli, PhD, received funding for Preliminary Steps Toward Personalized Treatment for Multimorbid Older Veterans. She also received awards for: University of Pittsburgh Health Disparities Poster, Summer Research Institute in Geriatric Mental Health (NIMH), and Student Research Award from Psychologists in Long Term Care.

MIRECC is enhancing the mental health of Veterans in the region and the nation by studying and implementing measurement-based mental health care. The Center’s research focuses on measures including biomarkers, clinical assessments and patient self-assessments to guide the tailoring of treatments for mental health conditions. MIRECC conducts research, education and training programs, and clinical programs built on research findings in collaboration with regional VA facilities and university affiliates.
VRFP presented the first Young Investigator award as part of National VA Research Week.

- 1st place – Anand Mhatre
- 2nd place – Nathan Hogaboom

2015 Grant Recipients of the Medical Education and Patient Safety Award (MEPS):

- Jonathan Wertz, MD – “Use of a Checklist in the ICU to improve the quality of patient care”
- Alexandra Clark, MD – “Restricted vs. Unrestricted Testosterone Prescribing: An Analysis of Vascular Outcomes in the VAPHS”
- Ruth Presiner, MD – “Mastering Paracentesis for Medical Residents”

Congratulations to Jamie Estock and her research team, recipients of the Gold Award in the category of “Outstanding Contribution to Science (Medical)” from the Federal Executive Board Pittsburgh Excellence in Government Award for incorporating human factors evaluations into the medical product acquisition process. The results were published in The American Journal for Emergency Medicine.

Clinical Trials Center

Significant accomplishments of CTC Researchers:

- CTC Medical Director, Aref Rahman, MD was selected as a participant to the VA Healthcare Leadership Development Program and VA Corporate Employee Development Board.
- The Association of VA Hematology/Oncology selected Jocelyn Tan, MD as one of the six most valuable researchers.
- CTC researchers had a strong presence at this year’s meeting with Andrew Liman, MD serving as both a committee member and moderator in the lung section and James Herman, MD as a presenter in the lung section.
- Linda Fried, MD was an invited speaker at the 2014 American Society of Nephrology Annual conference.
- Brian Williams, MD was awarded a $1.9 million Department of Defense grant for his clinical trial “4 Drug Nerve Block Versus Plain Local Anesthetic for Knee and Hip Arthroplasty”
- Edith Tzeng, MD was awarded the 2015 University of Pittsburgh Clerkship Preceptor of the Year for Surgery, and the recipient of a $100,000 grant from UPP Academic Foundation for her project “Xanthine oxidoreductase and nitrite to promote diabetic wound healing”
**Michael Boninger, MD**

Dr. Michael Boninger is a physician researcher for the VA and Senior Associate Medical Director of HERL, which is a VA Rehabilitation Research and Development Center of Excellence. He is also Professor and UPMC Endowed Chair in the Department of Physical Medicine & Rehabilitation at the University of Pittsburgh, School of Medicine. He has joint appointment in the Departments of Bioengineering, and the McGowan Institute of Regenerative Medicine. He is Director of the UPMC Rehabilitation Institute and the Senior Medical Director for Post-Acute Care for the Health Services Division of UPMC.

Dr. Boninger has an extensive publication record of more than 200 papers in the areas of spinal cord injury and technology. He has investigated technologies that vary from brain computer interfaces to wheelchairs. His central focus is on enabling increased function and participation for individuals with disabilities through development and application of assistive, rehabilitative and regenerative technologies. Dr. Boninger also has extensive experience and publications related to training researchers. His students have won more than 50 national awards. Dr. Boninger holds four U.S. patents and has received numerous honors, from the VAPHS Excellence in Research Award to being inducted into the Institute of Medicine of the National Academy of Science.

**Walid F. Gellad, MD, MPH**

Dr. Walid Gellad is a CHERP Core Investigator and Primary Care Staff Physician at the VA Pittsburgh. He is also Associate Professor of Medicine at the University of Pittsburgh, where he co-directs the Center for Pharmaceutical Policy & Prescribing. Dr. Gellad completed his residency and chief residency in internal medicine and a health services research training fellowship at Brigham and Women’s Hospital and Harvard Medical School. He received his undergraduate degree from Swarthmore College, his medical degree summa cum laude from the University of Maryland, and a master’s degree in public health from Harvard. His research interests are improving the safety, quality and efficiency of prescription drug use and prescribing, with a current focus on prescription opioid use. He is the recipient of an HSR&D Merit Review Award for a three-year mixed methods study examining the causes and consequences of dual health system use of prescription opioid medications among Veterans.

The U.S. is in the midst of an epidemic of opioid overdose, due in part to the widespread use of prescription opioid medications. VA adopted several strategies to mitigate the risks of opioid-related adverse events within the Veteran population that focus almost entirely on monitoring prescriptions dispensed within VA. Many Veterans have other forms of health insurance and can access healthcare and prescriptions in non-VA settings. VA cannot fully understand the safety of opioid prescribing to Veterans, or develop successful interventions to address opioid safety, without understanding this non-VA care. Dr. Gellad’s research addresses the causes and consequences of dual use of health care systems in opioid prescribing as part of a strategy to mitigate these risks.
Construction Update

- **Research Office Building Wet Lab** –
  Anticipated Completion: June 2016
  Anticipated Activation: Fall 2016

- **Animal Research Facility** –
  Anticipated Completion: Winter 2017
  Anticipated Activation: Spring 2017