



Sowing Seeds for More Rewarding Lives

Aging Institute • 2016 Annual Report
UPMC Senior Services & the University of Pittsburgh

UPMC | **SENIOR
SERVICES**

University of Pittsburgh



“To understand why lifestyle has such a great impact, we should recall that ageing is not some fixed process but comes about through the accumulation of subtle faults within the cells and organs of our bodies as we live our lives. For this reason, the ageing process is malleable. It can be altered by choices that affect either our exposure to damage or our ability to cope with it. Just as we can alter the life span of a car by how well, or badly, we drive and maintain it, we alter the ageing of our body by how well, or badly, we take care of it.”

Thomas Kirkwood, PhD, CBE
Associate Dean for Ageing
University of Newcastle, England
Reith Lectures 2001: The End of Age



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Director's Message

When I am asked to describe the always evolving work of the Aging Institute of UPMC Senior Communities and the University of Pittsburgh, three words come to mind: we are transdisciplinary, translational, and team-based in all we do. Collectively, this trinity inspires our work, informs our approaches, and serves as an incubator for tomorrow's innovations.

Nowhere is our transdisciplinary mindset more evident than in the projects of the Aging Institute Workgroups, which have targeted critical, under-represented topics in aging with the goal of translating research to real world solutions. They have helped to inform new methods of care, enhanced our own educational outreach and training, and secured external funding for deeper discovery. As you'll read in this report, our Healthy Brain Aging Workgroup, tapping the expertise of researchers, educators, and clinicians in neurology, health and physical activity, psychiatry, and other disciplines, is yielding especially promising new insights on the impact of exercise — with a social component — on the health of older adults.

An outstanding example of the translational applications of our efforts can be seen in the Aging Institute's four-year initiative to reduce hospital readmissions from skilled nursing facilities (SNFs),

conducted in collaboration with UPMC Community Provider Services and the Palliative and Supportive Institute and our community partners, The Jewish Healthcare Foundation of Pittsburgh and Robert Morris University. Known as RAVEN, the design of this large-scale, multidisciplinary project uses many of the findings of our Workgroups to create team-based care solutions for frontline nursing staff. We are pleased to report that initial RAVEN outcomes demonstrate a significant reduction in avoidable hospitalizations among residents in SNFs, and that the Centers for Medicare and Medicaid have approved the project for a second Phase II award.

Our growing team-based initiatives are a direct reflection of our increased social capital, something we have worked hard to cultivate. Within UPMC and the University of Pittsburgh, around western Pennsylvania, the state, and the nation, we have partnered and networked with institutes and centers, community groups, and individuals — all in the quest of discovery and service for a greater common good.


This report also highlights the increasingly critical role of the layperson in shaping and informing aging-related initiatives in our region. Examples of their creativity and influence can be seen in the Patient and Family

Centered Care and Methodology and Practice's use of volunteer lay educators, a national model spearheaded by Anthony DiGioia, MD; the innovative initiatives designed by the Center for Audiology in response to the needs raised by hearing-impaired older adults; and the insights and concerns raised by the older adults and caregivers who participate in the many educational programs we at the Aging Institute offer each year.

At the Second Annual Jonas Salk Symposium, convened by the University of Pittsburgh's Graduate School of Public Health to explore topics of wisdom and aging, I was struck by the title of an address made by Dr. Salk that his son, Peter, shared that day: "Our greatest responsibility is to be good ancestors." His words also resonate for the members of the Aging Institute: we must always remember to be thoughtful and responsible stewards of the immense talents and resources within our purview as we continue to study, understand, and celebrate aging.

As ever, we continue to rely on the generous counsel and connections provided by our general advisory and executive boards, whose membership includes representatives of UPMC, UPMC Health Plan, and multiple disciplines from throughout the University of Pittsburgh. We also extend our ongoing gratitude

to Stephen Shapiro, MD, chief medical and scientific officer of UPMC and the University of Pittsburgh Schools of the Health Sciences; Diane Holder, president, UPMC Health Insurance Services Division; the deans of the University's Schools of the Health Sciences: Thomas Braun, DMD, PhD, School of Dental Medicine; Anthony Delitto, PhD, PT, FAPTA, School of Health and Rehabilitation Sciences; Donald Burke, MD, Graduate School of Public Health; Jacqueline Dunbar-Jacob, PhD, RN, FAAN, School of Nursing; Patricia Kroboth, PhD, School of Pharmacy; Arthur S. Levine, MD, School of Medicine; Patricia Beeson, PhD., provost of the University of Pittsburgh; and Larry Davis, MA, MSW, PhD, dean of the School of Social Work. Their collective advocacy and support have been essential to our current and future progress.



Charles F. Reynolds III, MD
 Director, Aging Institute of UPMC Senior Services and the University of Pittsburgh
 Distinguished Professor of Psychiatry
 UPMC Endowed Professor in Geriatric Psychiatry
 Director, NIMH Center of Excellence in Late-Life Depression Prevention and Treatment
 Director, John A. Hartford Foundation
 Center of Excellence in Geriatric Psychiatry
 School of Medicine
 University of Pittsburgh

Collaborative Network





Aging Institute Workgroups

Healthy brain aging and caregiver support remain the continued focus of the Aging Institute's Workgroups. The inventive collaborations of dedicated researchers, scientists, and administrators from wide-ranging disciplines across the University of Pittsburgh and UPMC — along with growing partnerships around the region and the country — are helping to create a foundation of new knowledge and actionable solutions.

Dementia Workgroup

Developing Ways to Accurately Identify and Reach Out to Family Caregivers

Unpaid family caregivers make substantial contributions toward the care and well-being of relatives with physical and cognitive disabilities. According to AARP, the estimated value of these caregiving services in the United States in 2013 was \$470 billion.

Yet, most family caregivers are unprepared for the ongoing physical and emotional stresses placed on them, which can threaten their own health and psychological well-being. Over the last four years, the Aging Institute's Dementia Workgroup has focused its efforts on supporting the changing needs of this important group.

"But while there are proven programs and interventions to support caregivers, the healthcare system faces a problem: by its very nature, the work of caregivers is not visible," says **Howard B. Degenholtz, PhD**, associate professor of health policy and management at the University of Pittsburgh's Graduate School of Public Health. "Since the caregiver is not the patient, the service they provide is not systematically documented, making it nearly impossible to target them prospectively."

In 2015-16, the Dementia Workgroup sought to develop an accurate way to identify caregivers that could be implemented by a health system or health insurer as part of outreach efforts. The Workgroup used data from the 2011 Medicare Current Beneficiary Survey Cost and Use files to identify a sample of people age 65 and older living in the community.

"We then compared the predictive power of three models that integrated different healthcare utilization data," said Dr. Degenholtz, who led the research phase of the project. Joining him were Dementia Workshop members: **Richard Schulz, PhD**, associate director of the Aging Institute; **Rick Morycz, PhD**, associate professor of psychiatry, medicine, and social work at

the University of Pittsburgh; and **John Lovelace, MS, MSIS**, president, government programs and individual advantage at UPMC Health Plan. Pulling data from the 2011 Medicare Current Beneficiary Survey Cost and Use files, the following models were created, the goal being to explore how data on demographics, use of medical equipment, and diagnostic information might help to identify caregivers.

- The first model, containing basic demographic characteristics, correctly classified 67.2 percent of cases as having a helper that provides support with either basic or instrumental activities of daily living.
- The second added claims for durable medical equipment and correctly classified 68.7 percent of cases.
- The final model added diagnostic information and correctly classified 70.6 percent of cases and had a positive predictive value of 72.8 percent.

"Using this approach, the Workgroup determined that by using models like these to identify caregivers, interventions such as outbound telephone calls could be efficiently targeted to those who could benefit from supportive programs," says Dr. Degenholtz.





Dr. Richard Schulz serves as the director of the Geriatrics Workforce Enhancement Program, also known as GWEP, at the University Center for Social and Urban Research at the University of Pittsburgh. This program is sponsored by the Health Resources and Services Administration (HRSA) of the U.S. Department of Health and Human Services (HHS) and promotes development of the healthcare workforce and quality care for older adults through:

- Community-based programs that equip patients, families, and caregivers with the knowledge and skills to improve quality of care and health outcomes among older adults
- Preparation of healthcare providers to address the needs of older adults and their families or caregivers, as well as the greater community
- Training opportunities for healthcare workers that bring together geriatric and primary care services

The University of Pittsburgh is one of 44 organizations to receive GWEP funding and brings together the Aging Institute as well as partners from throughout the University of Pittsburgh, UPMC Health System Geriatric Research, Education and Clinical Center (GRECC) of the Veterans Affairs Pittsburgh Healthcare System, the Alzheimer's Association, and Pennsylvania State University on this initiative.

The Dementia Workgroup hopes to validate this predictive model as a screening tool in future research efforts.

Healthy Brain Aging Workgroup

Identifying the Impact of Exercise and Socialization on the Older Brain

As the number of older adults affected by Alzheimer's disease and other dementias continues to rise, there's a growing interest nationally and internationally on the subject of brain health. What effect does aging have on mental function in healthy older people — and what can we do to promote brain health as we age?

Since 2013, the Aging Institute's **Healthy Brain Aging Workgroup** has worked to meaningfully contribute to both the scientific and clinical understanding of this subject by bringing to bear the unique insights and expertise of its members. They represent such diverse fields as: behavioral science, biology, bioengineering, chemistry, epidemiology, exercise physiology, gerontology, immunology, neurology, neurobiology, neuroepidemiology, nursing, physical therapy and rehabilitation, psychology, psychiatry, and public health.

In 2015-16, the Workgroup continued its efforts to examine the impact of both exercise and socialization on older brains through its basic science and clinical research projects, both funded by Aging Institute seed grants.

Enriched Environments = Increased Social Engagement

The basic science study, *Does Environmental Enrichment and Associated Exercise Promote Healthy Aging That Can Be Detected by Peripheral Biomarkers?*, examines the impact of environment on biomarkers, physical characteristics, and cognition among older rats.

"This project studied changes in the brains of older rats that were placed in enriched social environments with other rats, along with opportunities for exercise, such as running wheels, climbing areas, and balls," says Workgroup chair **Judy L. Cameron, PhD**, professor of psychiatry and director of the Pitt Science Outreach program at the University of Pittsburgh.

It can be difficult to monitor individual rats that are housed in complex group environments, so the research team — led by **Michael Zigmond, PhD**, professor of neurology at the University of Pittsburgh — looked at changes in organs like the heart and brain, as well as in the biochemistry of muscles.

"We thought that the enhanced environment would promote more physical activity, but we discovered its impact wasn't as great as we expected," notes Dr. Cameron. "What we did see, however, were some very interesting behavioral changes: the older rats did become more socially active and engaged in their surroundings."

A microarray profile, which looked at the expression of a number of genes, did indicate that the increased

socialization yielded brain changes in the older rats, even without increased exercise.

Based on the outcomes of the seed grant project, members of the basic science group have applied for external grant funding to continue the study.

A New Exercise Paradigm for Older Adults

The Healthy Brain Aging Workgroup's clinical research project moved from design and recruitment to implementation in 2015-16. Its focus is the impact of both exercise and lifestyle changes on older adults.

John M. Jakicic, PhD, chair of the Department of Health and Physical Activity at the University of Pittsburgh, is the lead researcher for this ongoing study, *Examining the Contribution of Physical Activity to Brain Health and Cognition in Older Adults*.

"It's been well established that regular exercise offers important benefits to the continued health and well-being of older adults," notes Dr. Jakicic. "We also know that it can be difficult for people of all ages to self-initiate regular physical activity at home. Our research first seeks to determine ways to encourage older adults to engage in more frequent activity by making exercise less daunting and more accessible — and second, to assess the impact of that activity on their brain health."

Twenty older adults aged 65 to 74 — plus one adult over 75 — were recruited for the initial study group.

Instead of traditional workout plans involving up to an hour of exercise three times a week, study participants were asked to build up to 10-minute periods of exercise three times a day, five days a week. A control group was assigned a less intensive regimen of stretching exercises.

All participants were given electronic tablets with activity videos demonstrating each exercise and attended regular group sessions, which offered social interaction with each other and the research staff (many of whom were featured in the exercise videos).

Study participants also undergo measures of cognitive function that require an interview, computer tasks, and responses to questionnaires. In addition, all participants are completing an MRI for brain structure and in response to cognitive tasks. These are completed at baseline and following the 24-week intervention.

"All 21 members of the initial group successfully completed the 24-week program. They also were very enthusiastic about the experience, demonstrating a strong sense of purpose and social connectedness. But because many of the investigators are blinded to the outcomes at this stage of the project, we're limited in what we can share publically until the project is completed," says Dr. Jakicic.

"However, we are seeing indications of improvements in engagement in physical activity in response to the interventions. While early, there are also indications that both intervention conditions are improving in selected

measures of physical and cognitive function,” he notes. “Thus, it may be that these different intervention approaches result in different responses. We will need to wait to see if this is true after we have complete data.”

A second group of participants, aged 75 to 85, were recruited to begin the exercise intervention in July 2016 with a target completion of January 2017. “Based on the data we gain from both study groups, we will seek additional funding through extramural sources to continue our research,” says Dr. Jakicic.

Caring for the Caregivers

The Alzheimer’s Association Delivers Creative and Accessible Solutions

At more than \$100 billion, Alzheimer’s disease is the third most costly illness in the United States, following heart disease and cancer. However, its immense cost to caregivers — financial, mental, and physical — is far harder to calculate. The Alzheimer’s Association has a strong and growing presence in communities throughout the country, spearheaded by the leadership of local offices and by providing funding support for research, educational programs, and more.

Over the past several years, there has been a steady increase in the collaborative efforts between the Aging Institute and the Alzheimer’s Association. “It’s great to see this partnership grow,” says Clayton Jacobs, vice president of programs and services for the Greater Pennsylvania Chapter of the Alzheimer’s Association.



“Partnerships are vitally important to us and without them, we couldn’t do the work that we do.”

“Caring for, educating, and supporting caregivers is a core mission of the Alzheimer’s Association,” says Mr. Jacobs. “It’s part of our DNA. Our organization was actually founded by caregivers in the early 1980s.”

That commitment is clear in the Alzheimer’s Association’s vast range of programs and services for dementia caregivers, making it one of the most recommended resources by the Aging Institute’s own Information and Referral Line. The organization hosts hundreds of peer and professionally led support groups (including one at the Aging Institute Resource Center at UPMC McKeesport), educational programs, message boards that connect caregivers worldwide, and a 24/7 hotline. Its online Alzheimer’s and Dementia Caregiver Center offers access to comprehensive information—from what to expect at each stage of the disease to financial and legal planning and the latest clinical trials and safety considerations. Its online tools can help caregivers to organize family and friends who want to help with caregiving, learn coping and caregiving skills, and even check their stress levels.

Some of the other caregiver support initiatives currently supported by the Alzheimer’s Association in western Pennsylvania include:

Video Support Groups

Google Hangout Support Groups target younger caregivers who are “navigating their way through this disease while attending school, raising families of their own, or developing careers.” Plans are also under way in 2016 to launch a similar video support group for lesbian, gay, bisexual, and transgender or LGBT caregivers.

Alzheimer’s Outreach and Resource Center

With evidence suggesting that African-Americans and Latinos are twice as likely to develop Alzheimer’s disease, resources like the Alzheimer’s Outreach and Resource Center (AORC), located in the Hill House Center in Pittsburgh’s Hill District neighborhood, serves to:

- connect caregivers through support groups
- encourage participation in clinical trials
- address social issues such as mistrust of institutions that conduct medical research

For those connecting to the Aging Institute through the Help and Referral Line, linking callers to local resources such as these is essential to the mission of the Institute.





Research

Innovative, risk-taking, multidisciplinary: Those three words aptly sum up the Aging Institute's research agenda. Under its direction, fostering the creation of new knowledge in aging through research continues full bore at UPMC, with the aim of improving the quality of life and care for older adults.

UPMC'S RAVEN Grant: Year Four **Reducing Avoidable Hospitalizations Using** **Evidence-Based Interventions for Nursing Facility** **Residents (RAVEN)**

In the first phase of RAVEN, evidence-based innovations were developed and implemented by UPMC and its community partners as components of a groundbreaking demonstration project focused on improving the quality of care for nursing home residents while reducing overall healthcare costs. The success of Phase I has resulted in an additional four-year, \$20 million Phase II award from the Centers for Medicare and Medicaid Services (CMS).

Four years ago, UPMC was one of seven organizations nationwide chosen by CMS to participate in an effort to reduce the number of hospital readmissions among residents of long-term care facilities, many of whom are challenged by one or more chronic illnesses. According to CMS, nearly 45 percent of such hospitalizations could be avoided through preventive care or treatment in a lower intensity care setting.

An independent three-year evaluation commissioned by CMS found that while all seven organizations participating in the original grant showed a general reduction in

Medicare expenditures, UPMC's RAVEN program was the only one with a statistically significant savings in Medicare expenditures and reduced hospitalizations that did not also result in a net loss after accounting for grant implementation costs. Its outcomes included a:

- 25 percent reduction of potentially avoidable hospitalizations
- 40 percent reduction in potentially avoidable emergency department visits
- net savings to CMS of more than \$5 million

The Phase I UPMC RAVEN grant was a collaboration of **UPMC Community Provider Services** and its **Aging Institute** and **Palliative and Supportive Institute**, four community partners — **Excelsior Health, Heritage Valley Health System, Jewish Healthcare Foundation, and Robert Morris University** — and **18 nursing facilities** throughout western Pennsylvania.

Co-directors for the research initiative are **April L. Kane, MSW, LSW** and **Charles F. Reynolds III, MD**, director of the Aging Institute.

"The results of our Phase I demonstration project show promise that with the right interventions, we can have a

measurable positive impact on resident care, quality, and cost," says Ms. Kane. "We're very honored that our performance has led to our continued involvement in Phase II of the RAVEN initiative, which will build on past successes while testing the effects of new payment models that will reward skilled nursing facilities and practitioners if certain standards are met."

Specifically, the second phase "calls for us to look at ways for long-term care facilities to treat six conditions that have the potential to be momentum changers for a resident and how to align provider incentives to new payment models to advance care," says **Mary Ann Sander, MHA, MBA, NHA**, vice president for Aging and Disability Services, UPMC Community Provider Services. "We've already established workgroups to begin preparing staff experts in these conditions." The qualifying conditions include:

- pneumonia
- dehydration
- congestive heart failure (CHF)
- urinary tract infections (UTI)
- skin ulcers/cellulitis
- chronic obstructive pulmonary disease (COPD)/asthma

The Phase II grant will be effective from March 2016 through October 2020.

Hallmarks of UPMC's RAVEN Initiative

RAVEN's targeted interventions are based on these five core themes:

- The use of **on-site nurse practitioners and enhanced registered nurses** who work with nursing staff to provide preventive services, improve the assessment and management of residents' medical conditions, and provide advanced care planning, support, and treatment for those choosing palliative care as the end of life approaches
- Educating clinical staff about **customized tools designed to improve communication** about a resident's changing medical condition
- **Expert training** about special health needs of the elderly, palliative care, and advance care planning
- **Improved management of residents' prescription drugs** to reduce the risk of medication-related complications
- The use of **telemedicine** to manage any worsening of a medical condition experienced by a resident after hours

10th Annual Research Day on Aging: Building Collaborations for the Future

Seeding a culture of innovation and collaborative research is a fundamental tenet of the Aging Institute. For the past decade, its annual Research Day has provided an

important forum for clinicians and researchers from UPMC, the University of Pittsburgh, Carnegie Mellon University, Duquesne University, Chatham University, and other area academic institutions to network and view posters showcasing the latest in aging research.

Since the first Research Day was established in 2006, more than 600 clinicians and researchers have submitted abstracts for the annual event. The occasion has helped bring numerous researchers together to collaborate on grants and research projects, says **Jennifer Bissell**, program coordinator at the University Center for Social and Urban Research, who has helped coordinate the event since its inception.



"It's an invaluable opportunity," says Ms. Bissell. "It's the only event that brings together researchers in aging and the academic community in a social setting where they can see what is being done across campus and the Pittsburgh community. And it often leads to remarkable research collaborations."

More than 100 participants and guests attended the 10th Annual Research Day on Aging held March 31, 2016 at the University of Pittsburgh. Chaired by **Charles F. Reynolds III, MD**, this year's session featured poster presentations and a panel discussion on aging and cancer.

Organizing this year's discussion were **Susan L. Greenspan, MD**, and **Bennett Van Houten, PhD**, of the Aging Institute, and panelists included **John Jakicic, PhD**, University of Pittsburgh Department of Health and Human Activity, **Rocky Tuan, PhD**, University of Pittsburgh Department of Orthopaedic Surgery, and 2016 Pilot Seed Grant winners **Kazunori Koide, PhD**, University of Pittsburgh Department of Chemistry; **Pradeep Tyagi, PhD**, University of Pittsburgh School of Medicine; and **Kurt Weiss, MD**, University of Pittsburgh Division of Musculoskeletal Oncology.

The poster session featured over 50 presenters on a range of topics. Participants had the opportunity to answer questions about their projects and view other posters while making rounds with their assigned group. Awards presented by category were:

Candidates for Clinical or Research Doctorates or Master's Level Students

First Place

C. Elizabeth Shaaban, MPH, Department of Epidemiology, Graduate School of Public Health, University of Pittsburgh



Relationship of Brain-Derived Neurotrophic Factor with Hippocampus Volume After a Physical Activity Intervention in Older Adults at Risk of Disability

Honorable Mention

Sandra Castro, Department of Neurology, School of Medicine, University of Pittsburgh
An Enriched Environment Modulates Factors Associated with Healthy Brain Aging in Rats

Post Doctorates

First Place

Stephen Smagula, PhD, Department of Geriatric Psychiatry, School of Medicine, University of Pittsburgh
Immunological Biomarkers Associated with Brain Structure and Executive Function in Late-life Depression: Exploratory Pilot Study

Honorable Mention

Chelsea Stillman, PhD, Department of Psychiatry, School of Medicine, University of Pittsburgh

Physical Activity in Late Life is Associated with Decreased Accumulation of Amyloid β in the Cardiovascular Health Study

Junior Faculty

First Place

Juliann Jaumotte, Department of Neurology, School of Medicine, University of Pittsburgh
Enriched Environment Increases Immune Response to Bacterial Toxin in Aged Rats

Honorable Mention

Juleen Rodakowski, OTD, MS, OTR/L, Department of Occupational Therapy, School of Health and Rehabilitation Sciences, University of Pittsburgh
Depressive Symptoms and Decline to Dementia for Older Adults with Mild Cognitive Impairment



Clinical Practitioners Doing Quality or Practice Improvement

First Place

Aparna Gupta, CRNP, MSN, ANP-BC, Department of Medicine, Division of Geriatric Medicine, School of Medicine, University of Pittsburgh
Effectiveness of Multimodal Strategies to Improve Uptake of a Late Life Collaborative Depression Care Protocol in Primary Care

Honorable Mention

Lisa Hilal, CRNP, Palliative Care Institute, UPMC
Improving Diabetic Management in Residents Receiving Sliding Scale Insulin in Skilled Nursing Facilities



2016 Pilot Seed Grant Awardees

The theme for the 2016 Pilot Seed Grant program was **Aging and Cancer**, and was open to the disciplines of basic, clinical, epidemiological, psychosocial, or health sciences research.

The pilot seed grant program — now in its ninth year — was developed to encourage junior faculty researchers to explore new areas of research in aging that have a potential for further funding from extramural funding sources.

Supported by the Aging Institute of UPMC Senior Services and the University of Pittsburgh, additional funding was provided by the **University of Pittsburgh Center for Behavioral Health and Smart Technology** for the program's first **Technology Development Project**, which focuses on scalable interventions that incorporate the novel use of technology.

2016 Pilot Seed Grant Recipients

Treating elderly patients with platinum drugs using an on-site analytical method

Kazunori Koide, PhD, associate professor of Chemistry, University of Pittsburgh

Technology to reduce sedentary behavior before and after cancer surgery

Carissa A. Low, PhD, assistant professor of Medicine, Division of Hematology/Oncology and Psychology, School of Medicine, University of Pittsburgh

SASP Components in Urine and Tissue Microenvironment Promoting Bladder Cancer

Pradeep Tyagi, PhD, assistant professor of Urology, School of Medicine, University of Pittsburgh

Mechanisms of Sarcoma and Aging Associated Cachexia

Kurt Weiss, MD, UPMC orthopaedic surgical oncologist and Assistant Professor of orthopaedic surgery, Division of Musculoskeletal Oncology, School of Medicine, University of Pittsburgh

Aging biomarkers in relation to the development of pancreatic cancer in humans

Jian-Min Yuan, MD, PhD, associate director for Cancer Control and Population Sciences, University of Pittsburgh Cancer Institute, and Professor of Epidemiology, University of Pittsburgh

2015 Seed Grant Updates

In 2015, the Aging Institute awarded two seed grants based on the theme of **Health Policy and Aging**. The goal: to support collaborative, multidisciplinary projects that use scientific research to make clearly defined and well-supported health policy recommendations aimed at improving healthcare for the aging population.

Maximizing Online Patient Portals as a Way for Older Adults to Become More Engaged in Their Healthcare

Since 2011, Medicare and Medicaid's Electronic Health Records (EHR) Incentive Program has offered financial rewards to eligible hospitals and

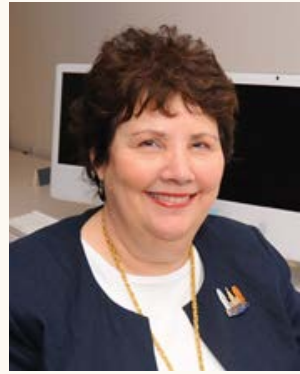
professionals that demonstrate "meaningful use" of certified EHR technology.

Simultaneously, online patient portals have become increasingly vital components of EHRs — and central to quality care. They offer patients the means to obtain important health information and more actively manage their own healthcare, from learning about medical conditions and disease prevention to accessing test results, scheduling appointments, and reordering medicines.

The Aging Institute has always been proud of its multidisciplinary approach to aging issues and the dialogue that has been inspired along the way. In the past year, this outreach extended to the rich insights of the humanities, bringing together the critical thinking, communication and problem-solving skills of non-scientists to focus on opportunities to enrich the lives of older adults.

Older adults, who are more likely to have chronic conditions and represent the largest users of healthcare, stand to benefit most from the convenience of online patient portals. But while research on the subject is limited, early evidence suggests that older adults often have problems accessing and using these portals — particularly if one or more of these factors apply to them:

- a poorer health status
- lower levels of education, income, and/or health literacy
- limited technology experience and access



To better document and understand this problem, the Aging Institute awarded a 2015 Seed Grant to **Annette DeVito Dabbs, PhD, RN, ACNS-BC, FANN**, professor of nursing and chair of Acute and Tertiary Care Department, School of Nursing, University of Pittsburgh.

Her year-long mixed-method study, *Understanding Barriers to Access and Effective Use of Patient Portals to Promote Engagement of Older Adults in Their Health Care*, included a cross-disciplinary team of experts in health informatics, technology, aging/gerontology, caregiving, research methods, instrument development, and health policy.

The study's goal was to collect data that would help inform the policies and financial incentives for health providers who use EHRs with the aim of improving patient engagement of older adults in their healthcare.

During the quantitative research phase, phone interviews were conducted with 100 older adults aged 65 to 95 living in community settings in western Pennsylvania. Questions focused on identifying the relationship between key social-behavioral factors (income, computer literacy, and education level) and engagement.

"Only two factors — educational level and health literacy — were established as clear drivers of engagement," said Dr. DeVito Dabbs. "Age and income were not significant predictors." She noted, however, that racial diversity was limited among study participants.

The qualitative research involved a subgroup of 23 older adults in four focus groups. Participants were asked to describe what it meant to be engaged and what their perspectives were about the types of patient/provider interactions that best promote engagement. They were also asked about the "push to use" technology for healthcare, to identify any barriers to access and effective use of patient portals, and to respond to a sample (demo) portal to help researchers better understand older adults' perspectives, determine what types of patient/provider interactions best promote engagement, and identify any barriers to access and effective use of patient portals.

Once analysis of the qualitative phase is complete, conceptual triangulation will be applied to create predictive user profiles and develop an integrated description of patient-facing portal features that will promote engagement of older adults in their care.

"We know that patient portals need to provide access, functionality, and meaning to engage users. The backgrounds of older adults are so diverse, though, that a one-size-fits-all approach will not work," said Dr. DeVito Dabbs. "If quality of care relies more and more on access and the use of technology for older adults to engage in

their healthcare, there needs to be a better match between technology features and the ways that older adults want to engage — or many older adults will be left behind."

Aging at Home: Can It Work for More Pennsylvania Seniors?

Even for affluent seniors, a prolonged stay in a nursing facility can have a devastating financial impact. And given the choice, the overwhelming majority of older adults prefer to age in place. But can in-home care achieve state and federal policy goals?

Howard B. Degenholtz, PhD, associate professor of health policy and management at the Graduate School of Public Health, University of Pittsburgh, received a two-year seed grant to research *Risk Factors for Hospitalization Among Aged Medicaid Home and Community-Based Services (HCBS)*. His study is designed to determine if income-eligible seniors — who require nursing facility care but elect to live in their own homes — receive the care they need to remain healthy and independent, and avoid hospitalization.

During the initial phase of the study, Dr. Degenholtz and his team examined hospitalization and readmission rates of HCBS waiver recipients. Key to this project was merging data from both Medicaid Waiver beneficiary services and Medicaid hospitalization claims.

"Part of the challenge in the past has been that if you just look at Medicaid data, it's difficult to identify dual-

eligible individuals, since they are subsidized in part by Medicare, Medicaid, and the state for in-home care," notes Dr. Degenholtz. "But by working in partnership with the state, we could link all these data sets."

Preliminary findings show:

- of 27,742 HCBS waiver clients, 31 percent (8,564) were hospitalized at least once
- of the 8,282 patients who survived the hospitalization and were discharged, nearly 13 percent were readmitted after 30 days and 22 percent were readmitted after 90 days

Further analysis of readmission by discharge location indicates that those who returned home experienced a lower readmission rate compared to those transferred to a nursing facility:

- of the 5,720 HCBS patients who returned to their homes, 8 percent were readmitted within 30 days and 18 percent were readmitted within 90 days.
- of 2,562 patients transferred to a nursing facility, nearly 24 percent were readmitted within 30 days and 33 percent were readmitted within 90 days.

Dr. Degenholtz and his team are now taking a closer look at the reasons for transition from in-home care to nursing facility. They will also look at the risk factors for hospitalization among waiver participants.

"This is very relevant to the development of health policy and practice changes," says Dr. Degenholtz. "If we can learn more about the risk architecture, we can better target the needs of this population."

The project also provides a crucial framework for a much larger state project with which Dr. Degenholtz is now involved — an evaluation of the new Community HealthChoices (CHC) initiative, which is aimed at managed long-term services and supports that will offer greater opportunities to older individuals and people with physical disabilities to age in place at home.

Sparking Innovation Across Disciplines **The Center for Behavioral Health and Smart Technology Joins in Supporting the Aging Institute's 2016 Seed Grant Program**

One of the Aging Institute's newest partners is the University of Pittsburgh's Center for Behavioral Health and Smart Technology (CBHST), which provided additional funding for the 2016 Seed Grants.



Directing CBHST is **Bruce Rollman, MD, MPH**, professor of medicine, psychiatry, biomedical informatics, and clinical and translational science in

the University of Pittsburgh's Department of Medicine. Established in 2015, the Center seeks to identify and share scalable solutions to some of the most common, challenging, and costly behavioral health problems encountered in community, primary care, and specialty settings — from mental health and cardiovascular disease to obesity and substance abuse.

CBHST also is designed to serve as an academic home for talented new investigators and junior faculty from such fields as clinical medicine, health services research, and computer science, through the recruitment of a cross-disciplinary core of five faculty and affiliate members.

"Some years ago, I received a seed grant for research on late-life depression after cardiac bypass graft surgery, made possible through Chip Reynolds' National Institute of Mental Health (NIMH)-funded Center for Late Life Depression Prevention and Treatment," says Dr. Rollman. "That experience, and others, taught me early on that the best ideas take shape when you mash-up one discovery with another. Too often in clinical care and research, though, we function in silos. Back when I was an early-career professional, I began to wonder how we could further the exchange and transfer of knowledge we've gained on a large scale."

The Center links clinicians, researchers, and staff from across the University of Pittsburgh's Schools of the

Health Sciences and Katz Graduate School of Business, UPMC, and Carnegie Mellon University with the local foundation and entrepreneurial communities with the goal of promoting the use of cutting-edge technology to improve health.

In May 2016, the Center hosted the first of two annual events, its **Integrative Conference on Technology, Social Media, and Behavior**. Modeled, in part, on the design of the Aging Institute's successful Research Day, the conference was attended by more than 130 faculty, students, technology enthusiasts, designers, and area healthcare entrepreneurs and foundations. The day-long program offered a cross-disciplinary look at new developments in the fields of health technology and social media to improve public health, as well as the chance to share ideas and network. The Center will host its second conference in November 2016.

Future plans call for CBHST to host an "open innovation" contest that will seek solutions to the "Inventor's Dilemma." The issue was raised in an October 2015 viewpoint article in the *Journal of the American Medical Association (JAMA 2015; 314:1447)*, which noted: "The inventor's dilemma is that creating a product that improves health is not enough; the product must also be able to generate a healthy return on investment. In the United States, the surest way to generate a healthy return on investment is to increase healthcare spending — not reduce it."

To learn more about CBHST's programs and initiatives, visit healthtech.pitt.edu.

Stimulating Pittsburgh Research in Geroscience-SPRIG Expands Its Reach

Through generous funding provided from UPMC, the Stimulating Pittsburgh Research in Geroscience SPRIG Workgroup entered its third year, and the opportunities for collaboration abound.

Workgroup co-leaders include **Bennett Van Houten, PhD**, co-leader of the University of Pittsburgh Cancer Institute's molecular and cellular cancer biology program and the Aging Institute's associate director for basic research; **Fabrisia Ambrosio, PhD, MPT**, associate professor, department of physical medicine and rehabilitation; and **Nam Vo, PhD**, assistant professor, department of orthopaedic surgery, University of Pittsburgh. This year brought expanded initiatives, all in support of the Workgroup's objective of the promotion of the exchange of knowledge, tools, and techniques to investigate the biological underpinnings that drive the aging process.

FY2106 SPRIG Pilot Funding Program The SPRIG Workgroup has established a pilot grant program in support of highly innovative, team-based, transdisciplinary, and translational science at the University of Pittsburgh. A total of 18 letters of intent were received in response to a call for proposals on the theme of "Cancer & Aging." Five projects were selected for funding :

Principal Investigator: **Kevin Chan, PhD**; Non-invasive imaging of the effects of aging and ocular hypertension on the microstructures and macromolecules in the eye.

Principal Investigator: **Arjuman Ghazi, PhD**; Suppression of age-related reproductive senescence and germline tumorigenesis by mitochondria-targeted ROS modulators.

Principal Investigator: **Eric Goetzman, PhD**; *Sirtuin Regulation of Peroxisomes in Cancer*.

Principal Investigator: **Ana Mora, MD**; PINK1 in mtDNA integrity and tumorigenesis.

Principal Investigator: **Roderick O'Sullivan, PhD**; Investigating a non-canonical function of DNA Polymerase Eta (Pol η) in the maintenance of telomere integrity.

SPRIG Post-Doctoral Fellowship Program

This program is intended to provide rigorous research and training to enhance the career trajectory of the selected post-doctoral fellow toward a successful and independent career in the biology of aging.

The 2016 fellow is **Andrea Braganza, PhD**.

Website

In January 2016, the SPRIG website (www.sprig.pitt.edu) was launched and includes a calendar of events and announcements associated with the SPRIG Workgroup, including the monthly seminar series, annual retreat, and funded pilot project awardees.

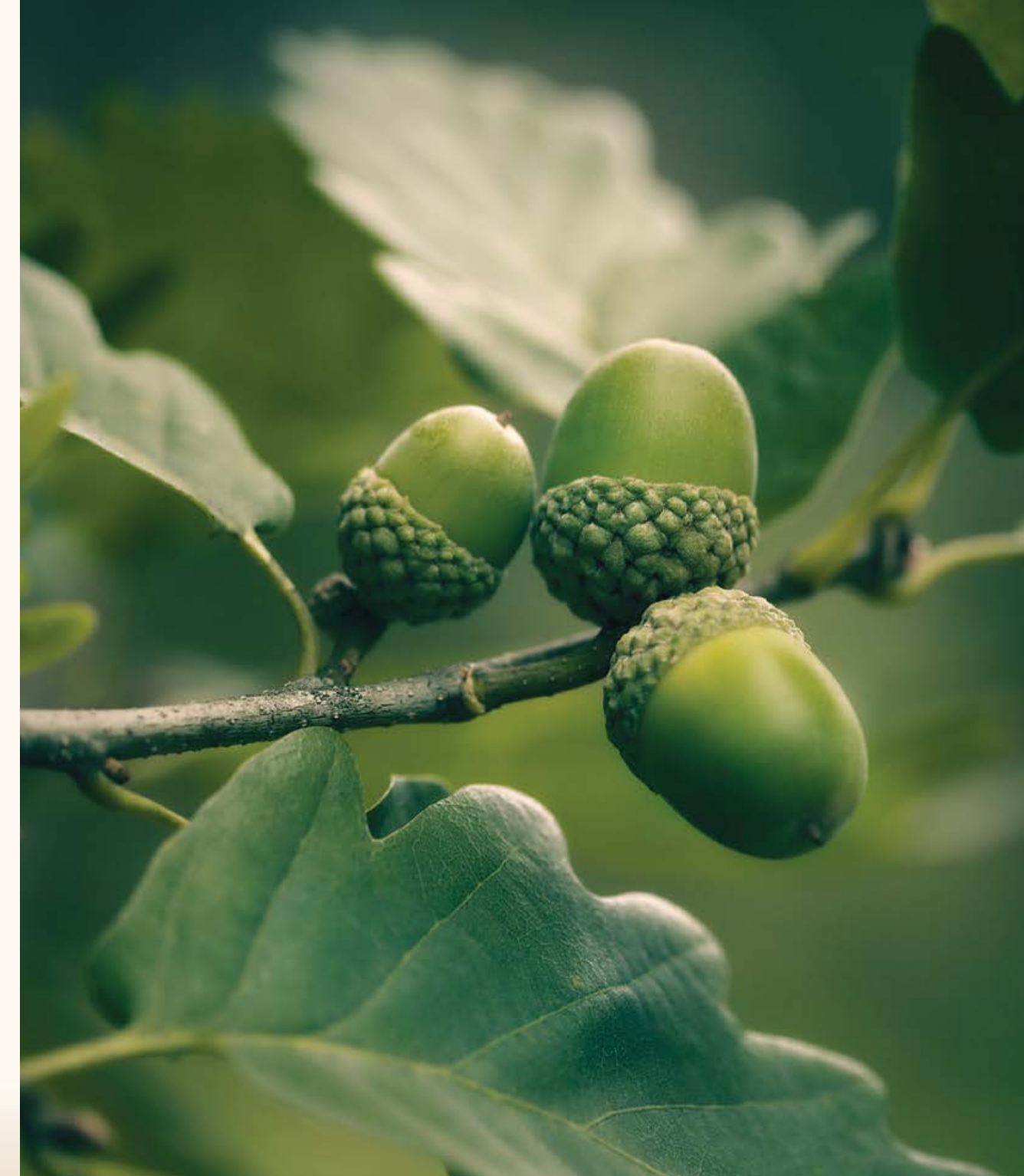
Future developments will include a repository of research articles, protocols, and resources relevant to aging-related research.

Monthly Work-in-Progress Seminars

A monthly seminar series provides a collaborative environment where two post-doctoral fellows present their work to colleagues for critical feedback.

Annual Advance

The 3rd Annual SPRIG Advance was held on June 1, 2016 on the University of Pittsburgh campus and provided a wonderful opportunity to highlight newly funded SPRIG pilot projects, as well as a poster session geared to foster collaborations among investigators conducting research on the basic biology of aging. The featured keynote speaker was **Mark Tarnopolsky, MD, PhD, FRCP(C)**, professor of Pediatrics and Medicine, president and CEO, Exerkine Corporation, director of Neuromuscular and Neurometabolic Clinic, McMaster University Medical Center, Ontario, Canada presenting on **Aging and Exosomes: Is Aging a failure of intercellular communication?** Participants from throughout the disciplines of the University of Pittsburgh and beyond were present to celebrate the day.





Educational Initiatives in Aging Services

Sharing aging-related knowledge, insights, and findings, whether to caregivers or clinicians, is a notable goal of the Aging Institute. It rises to that challenge through its timely, responsive, and wide-ranging training programs and its educational outreach focused on preparing the next generations of leaders and innovators in aging.

Geriatric Nurse Aide Designation

The Aging Institute now supports the educational needs of one of the most overlooked — and fastest growing — providers of geriatric care: nurse aides.

For Denyne Pollard, a nurse aide from Munhall, Pennsylvania, caring for seniors is her passion, not just her job.

A private home care provider, Denyne has cared for seniors for several years. “It gives me a tremendous amount of satisfaction to fulfill someone’s needs,” she explains.

Wanting to do an even better job of caring for her clients, Denyne sought ways to get additional training in geriatric care. Through an online search, she found the Aging Institute’s certificate program for geriatric nursing aides.

“We created this program so that people like Denyne, who are on the frontline of eldercare, can better understand the unique needs of the older adults they serve,” explains **Betty Robison, MSN, RN-BC**, gerontology educator at the Aging Institute.

The experiential, eight-hour nursing training program covers the key geriatric syndromes encountered by

nursing aides, including falls, dietary issues, incontinence, and insomnia.

Denyne was among the first group of graduates to earn a Geriatric Nurse Aide (GNA) certificate through the program. “I’ve gained a lot more skill and confidence in caring for my patients through this experience, and I look forward to continuing my education,” says Denyne.

For this mother of five, the additional training is well worth her time. “These families have enough worries,” she says. “I want to reassure them that they and their loved ones are in good hands.”

More Than a Feeling: The Essential Role of Empathetic Care in Promoting Safety in Healthcare

Nursing aides are the unsung heroes in healthcare. Known also as personal assistants, these frontline workers provide essential and intimate hands-on care to patients in skilled nursing and residential care facilities. It is a physically and emotionally demanding job, but these individuals — who are overwhelmingly female with low household incomes — are critically important to the care provided to the frail and elderly. The job is also one of the fastest growing positions in the country.



Among the research interests of **Carrie Leana, PhD**, who serves as the George H. Love Professor of Organizations and Management at the University of Pittsburgh’s Katz Graduate School of Business, and is a

member of the Aging Institute’s General Board of Directors, is how the quality of the workforce contributes to the quality of care in healthcare. She and several colleagues at the University conducted a study funded by the Russell Sage Foundation that examined the relationship between empathy and patient safety among these essential workers.

“We found that empathy in care really matters,” says Dr. Leana. “If nursing aides do their work with empathy and feeling while taking care of patients, the evidence is that patients do better.”

Dr. Leana also holds appointments in the University’s School of Medicine, the Graduate School of Public and

International Affairs, and the Learning Research and Development Center. As director of the University's **Center for Healthcare Management**, she devotes much of her research looking at the business side of healthcare — how work is organized and managed for the betterment of employees, employers, and, ultimately, society as a whole.

This first-time study looked specifically at direct care workers in skilled nursing facilities. According to Dr. Leana, they provide vital care that can be very difficult and requires trusting interpersonal relationships with patients and family members that rely on continuity of staff. "Individuals with advanced Alzheimer's are not able to convey their needs. You have to get to know them in order to properly understand their care needs," she says.

Despite the critical role they play — and the growing need for workers who care for the frail and elderly — direct care workers are habitually "overworked, overburdened, and underpaid," says Dr. Leana. Difficult working conditions "appear almost by design to foster apathy rather than empathy in the workforce," leading to both a high turnover rate and a shortage of workers, she adds.

"Those conditions have a direct impact on empathy, quality of care, and patient safety when stressed staff must work longer hours to care for larger numbers of

residents in a shorter period of time," says Dr. Leana. "Good management demands good practices — reasonable patient loads, reasonable hours, and reasonable pay — that allow workers to focus on their work."

Dr. Leana believes the solution rests in many hands. "Older adults and their family members need to advocate for change and call attention to staffing problems," she says. Managers of senior living facilities must begin to challenge conditions that are now considered accepted practice, such as chronic staffing shortages. On a state level, she would like to see policy changes that might include:

- establishing a "Good Employer Certification" based on key indicators (hours, workload, pay), empathy, and relationship with clients
- grading facilities on these indicators and publishing results
- basing state reimbursements on certification and grades

"The bottom line is that it may not matter who is flipping your burgers, but it does matter who is taking care of your grandmother," she says. "There's a remarkable sense of purpose and pride that nursing aides bring to their work, but their ability to sustain empathy and safe, quality care is threatened by poor working conditions and personal financial strains."

The abstract for *More Than a Feeling: The Role of Empathetic Care in Promoting Patient Safety and Worker Attachment in Healthcare*, can be found at: http://www.russellsage.org/sites/all/files/Leana_MoreThanAFeeling.pdf

Simulation Training in Caring for Older Adults

Science has shown how the human body changes with aging. But **Betty Robison, MSN, RN-BC**, the Aging Institute's gerontology educator, wanted nurses to better understand how those changes must impact the way care is delivered to older patients, so she made a connection with the Peter M. Winter Institute for Simulation Education and Research (WISER) at the University of Pittsburgh to develop a simulation-based education program.

Introduced in 2016, the newly designed course from the Aging Institute, "**Critical Thinking Skills in Caring for Older Adults**," provides nurses with interactive training and practice in handling medical situations on a "simulated patient" in a safe, hands-on environment. Realistic scenarios created to address specific clinical — and family — situations help prepare nurses for the complexity of caring for older adults.

Using a combination of actors and computerized mannequins, the training program presents "patients" with illnesses and complications commonly seen in

older adults, such as delirium, secondary infections, or adverse drug reactions. Vital signs, breath sounds, lab results, and other indicators can be manipulated to create realistic conditions while actors add convincing portrayals of family and patient interaction.

Deborah Farkas, PhD, director of educational development at WISER, says simulated training provides a dynamic, interactive setting where nurses can practice clinical, critical thinking, and communication skills. They learn from their mistakes without harming patients while debriefings provide valuable feedback about why things happened and how to improve performance.

WISER is accredited by the Society for Simulation in Healthcare. The course, which is eligible for continuing education credits, initially will be offered to RNs and CRNPs within Magee-Womens Hospital of UPMC and UPMC Health Plan's 100 case managers. Eventually the training will be made available to all nurses who care for older adults.

"With WISER, the Aging Institute is at the very forefront of geriatric training in the country," says Ms. Robison.

Plans also call for the simulated training to be featured at a spring 2017 conference on chronic disease management. Targeted to both nurses and social workers, the conference will feature three hours of simulation at WISER, followed by lectures and discussion at Magee.



The Aging Institute is partnering with WISER in providing nursing professionals with simulated training in a dynamic, interactive setting.



Betty Robison Honored as a “Geriatrics Teacher of the Year”



Betty Robison, MSN, RN-BC, the Aging Institute’s gerontology educator, has been honored by the Pennsylvania Geriatrics Society Western Division as a 2016 Geriatrics Teacher of the Year.

The prestigious award — presented annually to two outstanding teachers in recognition of their dedication and commitment to geriatric education — was presented April 7th during the 2016 Clinical Update in Geriatric Medicine Conference in Pittsburgh.



Ms. Robison received the healthcare professional award. **Daniel DiCola, MD**, director of geriatrics education at Latrobe Area Hospital Family Medicine Residency Program, received the

physician award. Both were recognized for “geriatrics teaching excellence” and their “significant contributions to the education and training of learners in geriatrics and to the progress of geriatrics education across the health professions.” Members of the General Board of the Aging Institute also serve on the Board of Directors for the Pennsylvania Geriatrics Society and were pleased to support the honoring of both Betty and Dr. DiCola.

In her nomination letter, **Kelly Neal, DNP, CRNP-BC**, Hospital Elder Life Program (H.E.L.P.), UPMC Shadyside, said Ms. Robison’s “passion for geriatrics and education — coupled with her natural leadership ability and creative methods of teaching — shines through her many projects.” During her tenure as gerontology educator, Ms. Robison has played a key role in developing aging-related education and training programs for caregivers, healthcare professionals and students, community organizations, and members of the public. Among her many accomplishments is the development of the **Ageless Wisdom** geriatric sensitivity training program. She also helped to establish the **Gerontological Nurse Certification Review** to prepare nurses for board certification.

In addition, she worked closely with staff at UPMC McKeesport in their successful pursuit of designation as a **Nurses Improving Care for Healthsystem Elders**

(**NICHE**) facility — the first hospital in western Pennsylvania. She was also instrumental in forming the western Pennsylvania chapter of the **National Gerontological Nursing Association (NGNA)** — one of only three NGNA chapters statewide.

Ms. Robison notes that her work has only been made possible through the generous collaborations she has enjoyed with others who share her interest in and passion for working with older adults. “We have all learned together,” she said, “and with each year, we learn how much more work there is to be done.”

Gerontology Scholarship Winners

As part of its efforts to “geriatricize” the workforce on every level, the Aging Institute actively supports full-time UPMC employees who are interested in developing an expertise in geriatrics within their field of enterprise. Every year, it awards two \$2,500 scholarships toward studies at the University of Pittsburgh’s innovative Graduate Certificate in Gerontology program.

A program of the University of Pittsburgh Center for Social and Urban Research and the University’s College of General Studies, the certificate combines interdisciplinary studies ranging from law and technology to ethics and communication.

Rachael Heide

*Health Unit Coordinator and Nursing Assistant
Emergency Department, Magee-Womens Hospital of UPMC*

“I want to be an advocate for the elderly. I want to make sure their needs are being met.”



A former social worker with Children and Youth Services, Rachael Heide changed careers when the emotional toll became too great. She has spent the past 15 years working as a health unit coordinator in the emergency department at Magee-Womens Hospital of UPMC, handling various medical secretarial duties and, more recently, serving as a nursing assistant.

Rachael became interested in gerontology after helping her grandmother deal with aging issues, including increasing frailty, falls and broken bones, illness, and transitions from home to assisted living. By pursuing a

Graduate Certificate in Gerontology — and eventually, a master’s degree in social work with a focus on gerontology — she hopes to work with older patients and their families going through similar transitions. “I want to increase my understanding and awareness of aging and use this knowledge to help others,” says Rachael. “It’s a difficult time. I’ve been there, and I know what they’re going through.”

Heather Mediate

Senior Communications Manager, UPMC

“This program is about where healthcare is moving. And, it’s also something you can apply to your own multigenerational family.”



With a young family and a fast-paced career working with a variety of adult and pediatric services throughout UPMC, one has to wonder how Heather Mediate even

finds time to pursue a Graduate Certificate in Gerontology. “I just love to learn,” she says. “And since most of my classes have been online, that’s made a huge difference in my ability to keep up with coursework.”

Heather’s work calls for her to be well informed about a wide range of medical topics. “The doctors I interact with are concerned about big issues,” she says. “The aging of our country has incredible implications on so many levels — everything from how we approach end-of-life care to better technology to support people at every age to focusing on prevention.” Heather also appreciates the diverse range of professionals she’s met in the program, with backgrounds in fields like nursing, law, and social work. “This experience has helped me gain a new perspective and appreciation for what ‘healthy aging’ means.”

Dental Care for an Aging Population

Edward S. Cheppa, DMD, is on a mission. His goal is to ensure that future dentists understand the unique oral health needs of their older patients.

A clinical associate professor at the University of Pittsburgh School of Dental Medicine, Dr. Cheppa teaches *Geriatrics*, a 16-week course that introduces students to the special considerations of caring for older adults. “High blood pressure, diabetes, heart



disease, cancer, Alzheimer's, and dementia are just some of the issues that can complicate dental treatment," he says. "Not to mention the simple fact that years of cumulative micro fractures make older teeth break more easily."

Each year, the Aging Institute provides sensitivity training (based on a modified version of its Ageless Wisdom education program) to Dr. Cheppa's students to help them better appreciate the physical challenges older adults face when receiving dental care. In addition,

the Institute provides information on senior living options and dental services in long-term care settings.

Access to geriatric dental care is becoming increasingly important as more and more seniors are living longer and keeping their natural teeth. Seniors are likely to have older dental work that needs maintenance or health problems that can affect their oral health, says Dr. Cheppa. For example, dry mouth — a side effect of certain medications and treatments — can be a breeding ground for bacteria, resulting in increased

cavities or periodontal disease. Older adults also may have physical or psychological ailments, such as arthritis or dementia, which can limit their ability to care for their own oral hygiene.

"Older patients and their dentists also face real financial hurdles," he adds. Retirement often comes with the loss of benefits, such as dental insurance. Dental coverage is not provided under Medicare and supplemental policies are often expensive. Many older adults no longer have direct access to their finances and need approval by a family member or guardian for services. They also may lack transportation or have accessibility issues that make in-office care impossible.

Dr. Cheppa engages his students by dividing them into teams, and assigning each a "virtual geriatric patient," complete with x-rays, health history, and a backstory. He hopes the course will spark greater interest in serving older adults. "Unlike pediatric dentistry, there's no comparable geriatric specialization," he notes. "But the need for dental services in this area is great — and growing."





Connecting to the Community

Too often seniors and their caregivers struggle along, isolated by the stress of the challenges they face and unaware of the resources and solutions available to them. The Aging Institute's outreach efforts to the community — including seniors, caregivers, health providers, and other organizations — creates a powerful alliance focused on building awareness and meeting the needs of older adults.

Thinking Out of the Booth: Proactively Addressing Hearing Loss

Hearing loss is a common condition affecting older adults. The National Institute on Deafness and Other Communication Disorders (NIDCD) estimates hearing loss affects one in three Americans between age 65 and 74 — and nearly half of those over 75 — but only 25 percent of those who need hearing aids have them.



Catherine Palmer, PhD, director of the Center for Audiology and Hearing Aids in the Department of Otolaryngology at the University of Pittsburgh School of Medicine's Eye & Ear Institute and an associate professor in

the Department of Communication Science and Disorders, School of Health and Rehabilitation Sciences, says hearing loss can have a significant negative impact on an older person's quality of life.

"Many people think hearing loss in older adults is just a minor problem that comes with aging. But hearing loss has very real consequences," says Dr. Palmer, who has conducted research showing that treating hearing loss can positively impact individuals with cognitive decline and dementia as well as their caregivers. It doesn't just interfere with watching television or listening to music, she says. Hearing loss also makes it difficult to engage with friends and family or to understand a doctor's instructions. It can ultimately lead to isolation and depression.

"The reality is that for the majority of people, when you can't hear, your communication is compromised. And without communication, socialization is not going to happen. That's a major risk factor for depression, isolation, and cognitive decline."

Dr. Palmer says hearing loss is rarely self-identified correctly. In fact, it takes up to a decade for most older adults with hearing impairments to be properly diagnosed. Increasingly, audiologists are "thinking outside the booth," says Dr. Palmer, and changing their orientation toward

more proactive and interventional patient care. "In particular, we need to do a better job of creating greater awareness of this problem among geriatricians and family doctors so seniors get help in the early stages of hearing loss," she says.

Giving Seniors Expanded Access to Hearing Aid Services
The Aging Institute has made an important connection with the Center for Audiology and Hearing Aids and refers older adults for hearing aid support through the Audiology Inpatient Services at UPMC McKeesport Hospital.

Audiologist Kathleen Costigan, AuD, provides twice-weekly, on-site hearing evaluations and hearing aid services at the hospital. "Our goal is to be a community resource so people with hearing loss can receive affordable, accessible support," she says. She can also assist those in need to gain access to low-cost hearing aids through organizations like the Lion's Club and HearNow.

Dr. Costigan also provides no-cost audiology services twice a month at the UPMC Birmingham Free Clinic in Pittsburgh's Southside neighborhood. In all, UPMC's

On-site Audiology Services at UPMC

For years, Angela Talak only had hearing in one ear — but it had never been an issue for her. Then, at age 90, she was hospitalized for a broken hip. “That’s when we realized my mother also suffered hearing loss in her good ear,” says Barbara Slinchak. Although Angela was fitted for a hearing aid, it was often difficult for her to install and use.

Last year, UPMC Senior Communities launched a pilot program to provide on-site audiology services in assisted living facilities. Liz Dervin is the communications facilitator assigned to UPMC Cumberland Woods Manor in McCandless Township, where Angela — now 101! — resides. “Having Liz here has been phenomenal,” says Barbara.

“My mother has always been in control of herself. She’s active and very engaged, so not using her hearing aid simply isn’t an option,” she explains. Barbara often found herself leaving work in Oakland to help Angela resolve a hearing aid issue, then rushing right back to work. “The stress was terrible,” she adds.

“It can be very difficult for residents to care for their hearing aids due to arthritis, vision loss, cognitive issues or neurological problems,” notes Liz. “When older adults find it difficult to maintain or use hearing aids, they’re less likely to use them.”

Now, Liz checks Angela’s hearing aid every week, including the fit, batteries, and tubing. On the Friday before Mother’s Day, Liz made it a point to recheck Angela’s hearing aid. “She knew it was going to be a busy weekend for my mom and didn’t want her to have any problems,” says Barbara. “She’s a lifeline, and my mother loves her.”

“It’s so nice to have someone on-site who cares about my mother’s hearing issues,” adds Barbara. “Liz has been a lifesaver for us.”



Center for Audiology and Hearing Aids provides hearing assessments at 18 satellite locations throughout western Pennsylvania.

Appointments at UPMC McKeesport can be made by calling **412-784-5400**.

Helping Hospital Patients Participate in Healthcare Decisions through Improved Hearing

Hearing loss is the third most common health problem in the United States. Some older adults with hearing loss often ignore the problem and try to “get by” in day-to-day situations. But when they find themselves hospitalized, mild to moderate hearing loss can have serious health implications.

“It is extremely important for patients, their families, and their caregivers to be able to communicate with each other during hospitalization for optimum care,” says Dr. Palmer.

To help ensure that hearing-impaired patients are able to participate fully in their care, the Center for Audiology has partnered with UPMC hospitals to provide patients with free amplifiers. “It’s a way for us to ensure that patients can hear and respond to caregivers and their families while they are hospitalized,” adds Dr. Palmer. When patients are discharged from the hospital, they can keep the amplifiers to use at home as part of their recovery.

Hearing Support for Assisted Living Residents

HEARCare, a pioneering pilot project developed by Dr. Palmer and the Center for Audiology, partnered with UPMC Senior Communities in 2015 to explore the value of daily, on-site hearing services for residents of assisted living facilities.

Through this pilot program, a communication facilitator (CF) works full time with residents to ensure they are hearing to the best of their abilities. Trained and supervised by an audiologist, the CF helps residents who already have hearing aids with cleaning, maintenance, fit issues, battery replacement, and insertion and removal of their devices. The CF also checks to see if the TV and phone amplifiers of residents are working properly or if they need low-cost accessories to specifically amplify these signals. Other responsibilities include introducing individuals who do not have hearing aids to affordable assistive hearing devices, as well as suggesting changes to enhance hearing for all residents — such as turning off background music in group settings and modifying seating arrangements in community activities or in the dining area.

Funded by the Hearst Foundation, the project is now being evaluated to determine its impact on care and quality of life, as well as potential cost savings produced by improved communication.

It is also exploring the feasibility of instituting the program on a broader basis, including palliative care, skilled nursing, and independent living facilities.

The Aging Institute Help and Referral Line

“The reasons people call our Help and Referral Line are as varied as the callers themselves,” says **Kelly Covone-Henning, MA, ACC, PCHA** aging educator and community resource coordinator for the Aging Institute. “We hear from people ranging from pre-teens to octogenarians, who call from down the street, across the country, and around the world.”

In 2015-16, call volume kept pace with last year’s dramatic 37 percent increase, with calls fueled by the Aging Institute’s website, referrals from physicians and healthcare professionals, and word-of-mouth recommendations by past callers. Calls from caregivers continue to represent the largest single area of growth.

Sharing responsibilities for the Help and Referral Line is **Ronnie Edwards, MSW**, aging and disability coordinator, a social worker providing support and advocacy and linking callers to the resources they need, often calling on expert specialists for support with crisis counseling assistance and geriatric syndromes.

Services include providing information about medical and support services at UPMC and about available

services offered through government, public, and private organizations, such as the Alzheimer's Association.

"We also work very hard to network with other professional organizations so we're plugged into the resources that are available in the community," says Ms. Covone-Henning. "Given the diversity of calls we get — from questions about hoarding behaviors to transportation issues and respite care for caregivers — we need to be well-versed generalists who can link people to the right resources. And we really do take the time to listen to our callers. Sometimes, that's the best support we can provide."

To contact the Aging Institute's Help and Referral Line, toll-free, call **1-866-430-8742**.

Aging Institute at UPMC McKeesport

In collaboration with McKeesport Hospital Foundation, The Aging Institute at UPMC McKeesport serves as a physical location where older adults, caregivers, family members, and the community can find the resources they need. Located on the first floor of the Crawford Building at UPMC McKeesport Hospital,



this center is designed to provide educational materials and programming, as well as supports both health professionals and those in the community.

Caregiver Day at UPMC McKeesport

The first Caregiver Day was held on June 29 right in the Aging Institute Resource Center and was a wonderful opportunity to show off the center and engage community members and employees around caregiver resources. Representatives from 16 community-based organizations and health system partners attended and were on-site to answer questions and provide attendees with essential information about local caregiver supports. Participating organizations included the Carnegie Library for the Blind and Physically Handicapped, Operation Veteran Benefits and the Allegheny County Area Agency on Aging.

Aging Institute at UPMC McKeesport

412-664-FIND(3463)
UPMC McKeesport
1500 Fifth Avenue
McKeesport, PA 15132

Bringing Awareness of Brain Health to the Community

One of the goals of the Aging Institute's Healthy Brain Aging Workgroup is to identify innovative ways to help increase public awareness of healthy brain aging and lifestyle choices.



To that end, the exercises created for older adults by **Dr. John Jakicic** as part of the Workgroup's clinical science research project are among the research projects featured in a new program developed by **Pitt Science Outreach** at the University of Pittsburgh and offered as part of the **Pitt Mobile Science Lab's Brain Fitness Boot Camp**. The 80-foot tractor trailer features a state-of-the-art science laboratory on wheels that focuses on bringing science to the community.

As one of the lab's featured activities, Brain Fitness Boot Camp offers an interactive look at how Pitt researchers are exploring ways in which physical activity and cognitive stimulation may protect the brain. It was developed by Pitt Science Outreach in collaboration with the University's renowned **Alzheimer's Disease Resource Center (ADRC)**.

The name was conceived by **Renā Robinson, PhD**, a member of the chemistry faculty at the University of Pittsburgh, according to **Judy L. Cameron, PhD**, director of Pitt Science Outreach and chair of the Aging

Institute's Health Brain Aging Workgroup. "Our goal in adding the Brain Fitness Boot Camp was to improve our outreach to new and broader audiences throughout the Pittsburgh area."

In addition to highlighting research into the link between physical activity and brain health, the boot camp features a "test your own cognition" station.

The Brain Fitness Boot Camp debuted at the Alzheimer Association's Walk to End Alzheimer's in October 2015. "It also appeared this past year at senior health fairs, pre-game activities during Pitt football season, and community events throughout the area," notes Dr. Cameron.

Supporting Southwestern Pennsylvania's Aging LGBTQ Community

More than 3 million Americans over the age of 65 are thought to be lesbian, gay, bisexual, or transgender — a number that's expected to double by 2030. In southwestern Pennsylvania, an area with a large senior population, serving seniors in the LGBTQ community is an important focus of the PERSAD Center.

Founded in 1972, PERSAD Center is the second-oldest counseling center in the country serving the LGBTQ community. The Lawrenceville-based organization provides specialized support to meet unique needs and delivers training to agencies and caregivers. PERSAD also is the western Pennsylvania affiliate for the

National SAGE (Services and Advocacy for GLBT Elders) program. PERSAD's Senior Center provides meal programs, legal support, social activities, case management, and referral services.

"The **Aging Institute** has been an invaluable partner of PERSAD, giving us insight and guidance into the array of services available for older adults," says **Betty Hill**, PERSAD's executive director. "We've also collaborated with the Institute and UPMC in providing cultural competency training and in the development of policies and practices supporting cultural diversity in hospitals, clinics, and other settings."

In December, the relationship between the two organizations became even stronger when **Charles F. Reynolds III, MD**, director of the Aging Institute, joined the PERSAD Center Board of Directors.

Kathi Boyle, coordinator of older adult services for SAGE Western PA at PERSAD Center, says fear is common among older LGBTQ adults. "It's important to remember that many of these men and women faced incredible discrimination when they were young," she says. "They should be celebrated as early civil rights activists whose work has paved the path for the freedoms enjoyed by today's LGBTQ community."

The stigma and discrimination many older LGBTQ adults have experienced throughout their lives continues into their later years. Today, these seniors face challenges, including:

- lack of adequate, affordable housing
- loss of mobility
- poverty and isolation
- depression and substance abuse
- HIV and other illnesses
- lack of family support

"Because they always lived on society's fringe, many of these seniors are reluctant to access mainstream aging services, which can increase their social isolation and negatively impact their physical and mental health," says Ms. Boyle. "It's common to hear them say, 'I never expected to live this long — or be so poor.' "

A certified national trainer for the National Resource Center on LGBT Aging, Ms. Boyle teamed up with the Aging Institute's **Betty Robison, MSN, RN-BC**, in 2013 to develop a two-hour training program to help educate and sensitize frontline staff in senior living communities to the stigmas faced by LGBTQ residents. It is now offered to staff at all UPMC Senior Communities.

Last year, PERSAD moved to Pittsburgh's Lawrenceville community. "One of the major benefits of our new facility is that it's enabling us to offer expanded programming and greater accessibility for our older clients," says Ms. Hill. "And perhaps the biggest plus of the new building is that it's become a meeting space used by dozens of community organizations, helping to expand awareness and understanding of the work we do."

Beyond Books

The New Role of Libraries in Outreach to Older Adults

Libraries serve many diverse communities, including a growing population of older adults of every background. In Pittsburgh, where seniors are major users of library services, local libraries are adapting their programs and developing outreach strategies to better serve them.

Pittsburgh is a library-rich community. Carnegie Library of Pittsburgh has 19 locations with a number of other libraries and related branches spread throughout Allegheny County.

“The library is a real resource for seniors,” says **Daniel Hensley**, adult programming coordinator at Carnegie Library of Pittsburgh. “They’re able to research and get information, video chat with children and grandchildren, borrow DVDs and the latest books at no charge, and access the Internet on our computers.” Popular research topics include aging and health, small business ventures, volunteerism, tourism and travel, education, and skills building.

Today, many older adults find themselves taking on caregiving responsibilities for aging parents and spouses— and grandchildren — while also managing

their own health issues. “Our relationship with the Aging Institute is expanding to better serve these seniors and their families, and specifically, to better support caregivers,” he adds.

The Aging Institute offers several free programs at libraries and senior centers throughout the area. “We choose topics that are important to seniors, their families, and other caregivers,” says **Kelly Covone-Henning**, aging educator and community resource coordinator at the Aging Institute, who teaches these classes:

Declutter and Reorganize: Clearing out the clutter can make day-to-day life more manageable. It’s a safety issue as well. Decluttering can also help head off falls in the home, a leading cause of serious injury in older adults.

I’m Having a Senior Moment: Senior moments happen. Fear of memory loss is a common concern among people over the age of 55, and keeping the brain healthy can help fend off forgetfulness.

Insights to Sensory Changes for the Caregiver: Sensory systems gradually begin to decline as people age and may not be easily understood by caregivers. Understanding these changes helps develop important coping skills for both older adults and caregivers.

The Aging Institute’s Information and Referral Line is an important resource for librarians — and vice versa, says Mr. Hensley. “The library is a switchboard to the world, so we’re able to link our customers to the resources they need.”

For library staff, the opportunity to develop programs and outreach strategies specifically for seniors also brings challenges. To help staff develop their skills, Ms. Covone-Henning hosts Coffee and Connect. “This is a great way to meet and talk with staff about the issues older adults face — cognitive and physical. It helps staff be more empathetic and responsive to this group,” she says.

Over the past two years, the relationship between the Aging Institute and local libraries has continued to grow. Based on a survey of librarians, the Aging Institute is working to create new programs and outreach efforts. “By listening to our seniors, we’re finding new ways to engage our entire community in providing them with the help and support they want and need,” states Ms. Covone-Henning.

Supporting Caregivers in the Workplace

The needs of caregivers are significant and caring for a loved one is often equivalent to a full-time job. According to AARP, nearly 60 percent of family members who care for an older adult are also employed full-time outside the home. Many of these caregivers must manage difficult symptoms and problematic behaviors in addition to the physical, emotional, and financial challenges of caregiving. In short, the needs of caregivers are great and as a result, more and more companies are recognizing these needs and working to establish additional supports.

The United Way of Southwestern Pennsylvania is committed to supporting both seniors as well as their caregivers and has launched the *United for Caregivers* Initiative designed to stimulate both employer and employee engagement and to increase the supports available to employees who also serve as caregivers. Leadership and staff at eight companies have come together to better understand the distribution of employees who identify themselves as caregivers within the workforce and to identify needed resources for this group. UPMC and the Aging Institute are proud to participate in this innovative approach.

The primary goals of this initiative are:

- support staff in self-identifying as caregivers
- create a centralized hub of information to provide important education and training to both managers and employees
- engage in important discussions and workgroups designed to address the needs of caregivers

The response has been robust and within the UPMC system, representatives from the Aging Institute, UPMC’s human resource department, the *LifeSolutions* employee assistance program, Wolff Center of UPMC and the communications and media teams have worked closely with the United Way. Workgroups are underway to develop education for managers, to conduct focus groups with staff and to create important resources designed to support the needs of caregivers during the many stages of caregiving. United for Caregivers has proven to be a wonderful collaborative initiative charged with the important work of helping to care for the caregiver.

Celebrating Senior Champions

UPMC Senior Services and the Aging Institute honor extraordinary individuals and organizations who contribute significant time and energy to serving seniors throughout western Pennsylvania. The eighth annual Celebrating Senior Champions event was held on October 26, 2016.

"In celebration of healthy aging, healthy living and healthy communities, we are pleased to recognize three awardees who have gone above and beyond to make our region a better place to age," says **Deborah Brodine**, president of UPMC Community Provider Services.

Grand Champion

Neil M. Resnick, MD

Chief, Division of Geriatric Medicine and Gerontology

Thomas P. Detre Professor of Medicine

Director, Hartford Center of Excellence in Geriatric Medicine

Associate Director of the Aging Institute of UPMC Senior Services at the University of Pittsburgh

University of Pittsburgh School of Medicine and UPMC

Dr. Resnick leads one of the largest and most innovative geriatric programs in the country, with more board-certified geriatricians than nearly any program, a wide array of senior services and an extensive research portfolio. He and his colleagues are re-engineering geriatric care to improve it and make it more feasible for non-geriatricians to provide.

Dr. Karen Feinstein, president and chief executive officer of the Jewish Healthcare Foundation, is a long-time colleague and collaborator of Dr. Resnick's who says,

"I've had the pleasure of working with Dr. Resnick on a number of projects aimed at improving geriatric care. Neil is relentless in his pursuit of compassionate, safe, reliable care for seniors. It's a calling of love, not duty, and he has never wavered in his conviction that geriatric medicine is his life's work."

Community Champion

James S. Withers, MD and Pittsburgh Mercy's Operation Safety Net

Founder and Medical Director

Operation Safety Net, Pittsburgh Mercy's award-winning, innovative medical and social service outreach program for people who are experiencing chronic homelessness, was founded in 1992 by internal medicine physician **Dr. James Withers**.

As part of Pittsburgh Mercy and Trinity Health, serving in the tradition of the Sisters of Mercy, Operation Safety

Net delivers integrated healthcare, case management, housing follow-up, and other vital health and human services to individuals living on the streets of Pittsburgh. Approximately one in every 22 homeless individuals is a senior citizen; there has been a 20 percent jump in the number of homeless seniors since 2007, with numbers expected to increase in the coming years. To date, Operation Safety Net has reached approximately 10,000 individuals with more than 68,000 visits and helped more than 1,200 individuals who were once homeless to find homes of their own. Dr. Withers continues to serve as the organization's medical director.

Pittsburgh Mercy board member **James A. Malanos** of Baker Young Corporation attests, "The homeless, addicted, and mentally ill are invisible to most people, but Dr. Withers and his staff see them as individuals, and treat them accordingly, with dignity and respect as they provide healthcare to the neediest among us."

Caregiver Champion

Elaine H. Berkowitz, DMD

Lieutenant Colonel (Ret), United States Army Reserves

Doctor of Dental Medicine

Dr. Berkowitz practices geriatric and special needs dentistry in private homes, nursing homes, personal care homes, rehabilitation hospitals and general hospitals, bringing essential oral care to the home-bound. She has

been distinguished as one of Pittsburgh's top dentists. Dr. Berkowitz retired as a Lieutenant Colonel with 38 years of service in the United States Army Reserves. She completed four deployments and received numerous medals and distinctions, including a Doctor Honoris Causa from the University of Prizren in Kosova.

Major General Rodney D. Ruddock, now an Indiana County Commissioner, served in the military with

Dr. Berkowitz and has this to say, "Here's all you need to know about Elaine - she extended her military service beyond retirement four times. She has a willingness to do what is required to get the job done, especially when difficult, and does so with the same loyalty and respect she extends to her own family."



GRAND CHAMPION

Neil M. Resnick, MD

Thomas Detre Professor
Chief, Division of Geriatric Medicine and Gerontology, University of Pittsburgh



COMMUNITY CHAMPION

James S. Withers, MD &
Pittsburgh Mercy's Operation Safety Net
Founder & Medical Director



CAREGIVER CHAMPION

Elaine H. Berkowitz, DMD

Lieutenant Colonel (Ret), United States Army Reserves
Doctor of Dental Medicine



Aging, Health, and Government Policy

As a recognized leader and strong voice for older adults, the Aging Institute and its partners offer increasing value to policymakers on aging-related issues in healthcare, social services, and economic resources. With a collaborative approach and emphasis on sharing information and resources, the Aging Institute has had a growing influence in shaping public policy.

Healthcare Initiatives Affecting Older Adults in Allegheny County

The Aging Institute resides in Allegheny County, Pennsylvania, which is home to one of the oldest populations in the United States, as well as a populace that is changing. Healthy aging does not start only in the later years, but starts amongst the youngest in our communities. Helping all age groups to age well is not just a challenge for our region, but has public health implications for the nation.



That reality has an inevitable impact on the public health agenda of communities statewide, and Allegheny County is no exception. But where others see limitations, **Karen Hacker, MD, MPH**, director of the Allegheny County Health Department (ACHD), believes the region is ripe with opportunity.

In addition to her responsibilities with ACHD, Dr. Hacker also serves as a clinical professor at the University of Pittsburgh's School of Medicine and as an adjunct professor in the departments of Health Policy and Management and Behavioral and Community Health Sciences at the University of Pittsburgh's Graduate School of Public Health.

Since coming to southwestern Pennsylvania from Boston in fall 2013, Dr. Hacker has seen growing leadership support and community engagement in public health issues — and that's resulting in change. "For example, we've made great strides as a region in our air quality and are nearly at the national standard for short-term particulates," she says.

"I've always remembered the advice of a professor who said, 'Demographics are everything.' Our region's demographics are changing and those shifts are now shaping our public health agenda," she notes. "Allegheny County was ranked second in the country for many years for its older population, but that's no longer the case."

What is shaping ACHD's policies and programming — which services 1.2 million people — are the crosscutting themes of health equity and social determinants of health. According to Dr. Hacker, there are significant disparities in the region based on geographic area, race, and gender, particularly in those communities that "hug the rivers" — from McKees Rocks to the Mon Valley.

"On a local level, our public health agenda is looking across the full age span rather than targeting specific aging-related issues," she says. "However, some programs continue to directly impact older adults by their very nature, such as our immunization programs, which include access to vaccinations for flu, pneumonia, and shingles."

Health aging occurs across the lifespan and having a healthy start in childhood can help to contribute to good health in the older years. There are many commonalities to the care of the youngest and the oldest citizens, including a focus on patient and family centered care. Western Pennsylvania and Allegheny County provide wonderful environments to support good health and healthy aging across the continuum of life.

Community HealthChoices

Offering Greater Opportunities for Older Pennsylvanians to Age at Home

Nearly half of all states across the country have moved to managed long-term services and support (MLTSS) delivery systems for their initiatives, which include home and community-based services and nursing home care.

In July 2017, Pennsylvania will add another program when **Community HealthChoices (CHC)** rolls out over a three-year period in five regions statewide. The initial launch will be in the 14 counties comprising southwestern Pennsylvania: Allegheny, Armstrong, Beaver, Bedford, Blair, Butler, Cambria, Fayette, Greene, Indiana, Lawrence, Somerset, Washington, and Westmoreland.

A priority initiative of Governor Tom Wolf, CHC was created in response to the growing call for better quality, more accountability, and improved budget



predictability in long-term services and supports for the state. Led by **Jennifer Burnett**, deputy secretary for the Office of Long-Term Living of Pennsylvania's Department of Human Services, CHC represents a major shift

from the existing fee-for-service model. CHC will deliver more coordinated healthcare services and expanded access to home and community-based opportunities for the nearly 420,000 dual-eligible beneficiaries and individuals with physical disabilities who receive Medicaid long-term services and supports. Dual-eligibles (people who qualify for both Medicare and Medicaid support) are three times more likely to report poor health and four times more likely to live in an institutional setting.

"Currently, nearly 50 percent of the state's nursing facility clinically eligible Medicaid population receives in-home or community-based care; that means the other half are in institutions," says Ms. Burnett. "The overwhelming majority of them — 95 percent — wants to age in place or continue to remain in their own home. By including more preventative health measures and

alternatives to institutional settings, we hope to enable participants to achieve that goal."

Through a competitive bidding process, the Department of Human Services is identifying qualified managed care organizations (MCOs) that will provide physical health coverage and coordinated long-term care services and supports. Each MCO will include a comprehensive network of providers, including home care agencies, adult day care services, hospitals, doctors, dentists, therapists, nursing homes, and others. Eligible participants will then be given a choice of MCOs for their region to manage their care.

Impact studies of early MLTSS systems show promising results, including declines in both nursing home and hospital use, increases in visits to patients' primary care doctors, and improvements in patient outcomes.

According to Ms. Burnett, the decision to roll out the program in southwestern Pennsylvania was based on two factors. "There is a significant penetration of Medicare Advantage and special needs plans, (Medicare's managed care product) highlighting participants familiarity with managed care," she notes, "We also know that the area has a well-qualified and strong pool of providers to support this effort. Together, they offer us a good foundation to launch the program."

The Aging Institute of UPMC Senior Services and the University of Pittsburgh is partnering with the UPMC Health Plan in an effort to identify and engage community-based resources for these efforts.

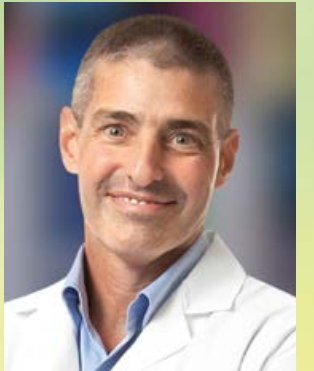
The University of Pittsburgh's Health Policy Institute, led by **A. Everette James, JD, MBA**, has been selected to conduct a six-year evaluation of CHC, to be coordinated by **Howard B. Degenholtz, PhD**, associate professor of health policy and management.

Controlling the Growing Costs of Healthcare — with Better Results and Greater Patient Satisfaction

Better care, better experiences, and lower costs: they represent the elusive trifecta in today's healthcare environment — but innovative systems are helping healthcare providers achieve all three.

Bundled payment structures are economic payment models intended to engage all members of the healthcare team. This economic packaging is designed to encourage hospitals, physicians, and post-acute providers to work together to improve both quality and coordination of a full episode of care, starting with the initial hospitalization and continuing all the way through recovery.

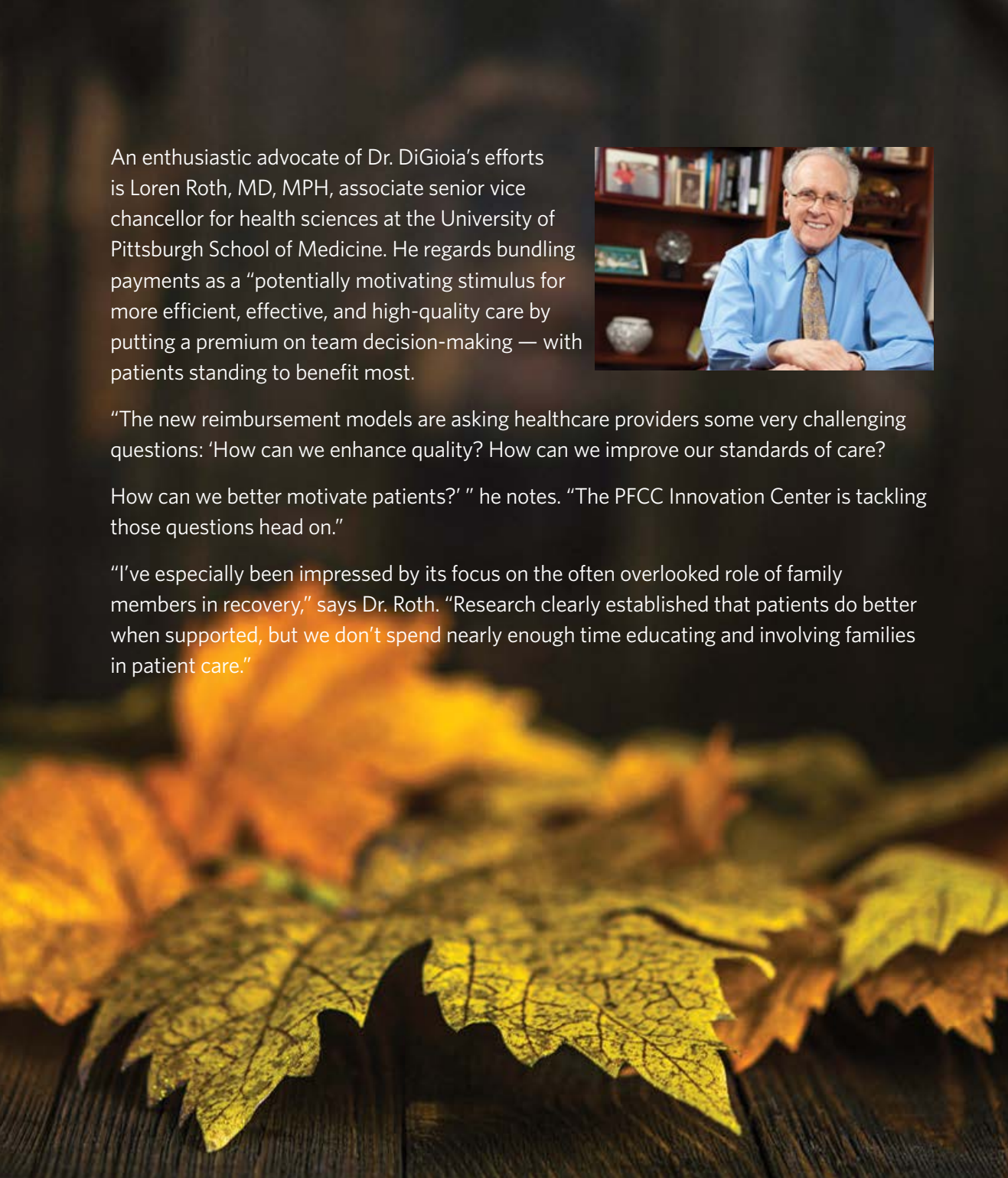
One care model that has both early and advanced experience in the design and implementation of care bundling is the Patient and Family Centered Care Methodology and Practice (PFCC M/P) at the Bone and Joint Center of Magee-Womens Hospital of UPMC. It has attracted the attention of the Centers for Medicare and Medicaid (CMS) as a high-performing care delivery model.



"Ten years ago, we developed PFCC M/P after listening to the concerns of our patients and their families. The results were transformational, reducing lengths of stay, improving patient satisfaction, and increasing efficiency," says orthopaedic surgeon **Anthony M. DiGioia, III, MD**, founder and medical director of the Bone and Joint Center.

Dr. DiGioia defines Patient and Family Centered Care as "healthcare that is compassionate, includes patients and families as partners and collaborators, is provided with respect, and treats patients and families with dignity," he says. "It is care that revolves around the needs and desires of patients and families, rather than the organizations and systems in which it is provided and engages them in the co-design of ideal care delivery," says Dr. DiGioia.

"Bundling requires us to look at the full cycle of care, across our traditional healthcare silos — from the hospital to clinicians to finance. When you look at the silos, the only common denominator is the patient. We're using the patient and family to connect the dots: they're the driving factor for change."



An enthusiastic advocate of Dr. DiGioia's efforts is Loren Roth, MD, MPH, associate senior vice chancellor for health sciences at the University of Pittsburgh School of Medicine. He regards bundling payments as a "potentially motivating stimulus for more efficient, effective, and high-quality care by putting a premium on team decision-making — with patients standing to benefit most.



"The new reimbursement models are asking healthcare providers some very challenging questions: 'How can we enhance quality? How can we improve our standards of care? How can we better motivate patients?' " he notes. "The PFCC Innovation Center is tackling those questions head on."

"I've especially been impressed by its focus on the often overlooked role of family members in recovery," says Dr. Roth. "Research clearly established that patients do better when supported, but we don't spend nearly enough time educating and involving families in patient care."

"Research clearly established that patients do better when supported, but we don't spend nearly enough time educating and involving families in patient care."

In April 2016, the Center for Medicare and Medicaid Services (CMS) began a mandatory bundling project for comprehensive joint replacement (CJR) surgery in 67 markets - Pittsburgh was included in this mandate. The Aging Institute participated with a multi-disciplinary team, including the broad provider community of UPMC and the Wolff Center at UPMC, to define protocols of treatment throughout the continuum of care for the bundle. The Institute's role was to contribute to establishing credentialing requirements for preferred provider network skilled nursing facilities to participate in the bundle. Valuable experiences with the RAVEN Initiative - and its focus on the reduction of hospital readmissions - have helped to form the criteria for the selection of preferred skilled nursing facilities to serve as an extension of the post-acute care team and improve overall quality of care. On an ongoing basis, members this collective team are now engaged around performance assessments of the facilities as well as ongoing selection of more facilities to become preferred, as the clinical need grows.

These new structures have created a collaborative environment that emphasize components that are core

areas of focus for the Institute - engagement with transdisciplinary teams, facilitating broad collaboration among multiple healthcare organizations, and the sharing of knowledge from translational research findings with operational leaders who are implementing new care models. As UPMC engages in the next round of clinical bundles for cardiac services, the Aging Institute is continuing to support this work - all around a translational approach to a better delivery of care.

A Patient — and Patient Advocate

After spending four decades on her feet as a full-time nurse, Cheryl Giuliano's knees had worn out. She enjoyed exercising, hiking, and dancing, but the pain was almost unbearable. At her daughter's urging, she decided to go ahead with knee replacement surgery and her research led her to Dr. Tony DiGioia and the Bone and Joint Center at Magee-Womens Hospital of UPMC.

As a registered nurse, Cheryl says she appreciates both the clinical and human sides to the team's approach. Cheryl had her first knee replacement at age 60 and returned to Dr. DiGioia four years later for her second knee replacement. Today at age 69, she continues to be pain free, works 30 hours a week as a home care liaison and maintains an active lifestyle that includes Zumba

and Fit classes and walking 15 miles weekly. She serves on the **Patient and Family Advisory Council** and also mentors joint replacement patients through the **Walk it Forward** program - a program that works to connect joint replacement patients with others who've experienced surgery. "I had such a great experience and I'm as good as new now," Cheryl says. "This gives me an avenue to help other patients."



Teaming Up for Patient Care

Ask Jerry Cooper why he's such a huge fan of The Bone and Joint Center at Magee-Womens Hospital of UPMC, he says simply: "It's because of Tony DiGioia and his team - and patients and their families are equal players on that team."

Dr. DiGioia performed two hip replacements on Jerry, an avid golfer and lifelong sports enthusiast. "My experiences couldn't have been better. They gave me back my quality of life." Jerry decided to share his enthusiasm and experiences as a volunteer in The Bone and Joint Center's **Walk It Forward** program. "Volunteers like me are available to mentor joint replacement surgery patients before, day of, and after surgery," Jerry explains. "I think Dr. DiGioia's system of having former joint replacement patients support new patients is just fantastic, and I'm happy to continue to be part of his team."



Partnerships and Forums

The Aging Institute has always been proud of its interprofessional approach to aging issues and the dialogue that has been inspired along the way. In the past year — during the University of Pittsburgh’s Year of the Humanities celebration — this outreach was extended for the first time to encompass the rich insights that discipline offers into aging and the human condition.

Second Annual Jonas Salk Symposium Exploring Topics of Wisdom and Aging in the Context of Public Health

While most know Dr. Jonas Salk for his role in discovering the polio vaccine — developed during his tenure at the University of Pittsburgh — his later writings focused on a concept now called sustainability and what he referred to as “the human side of nature.” He wrote several books on the topic, including *The Survival of the Wisest* (published in 1973), where he argues that mankind’s ability to learn how to act wisely is crucial for improving the quality and survival of human life.

Each year, the University of Pittsburgh’s Graduate School of Public Health honors Dr. Salk by bringing together speakers from diverse disciplines to discuss important themes in public health. In December, a multidisciplinary panel of experts joined 150 participants for the **2015 Jonas Salk Symposium on Wisdom and Aging**.

Co-sponsored by the University of Pittsburgh Graduate School of Public Health, the Aging Institute, and the Western Psychiatric Institute and Clinic of UPMC, the second annual symposium convened scholars from top universities across the country — the University of Pittsburgh and Carnegie Mellon University as well as the University of California San Diego, Duke University, University of Michigan, and Central Michigan University — to explore topics of wisdom and aging in the context of public health.

During the two-day symposium, experts in psychiatry, epidemiology, aging studies, decision sciences, and anthropology probed key questions, including: Is wisdom garnered throughout the life course? In the aged, is wisdom an asset that can be harvested for the betterment of society and sustainable life on the planet? What policies will capture, preserve, and make more available the wisdom of older adults?



Donald S. Burke, MD, dean of the Graduate School of Public Health and the UPMC Jonas Salk Professor of Global Health, welcomed participants along with Dr. Jonas Salk’s son, **Peter L. Salk, MD**.

“Aging is not just a series of declines. There are certain things gained in aging,” said Dr. Burke. “In this symposium, we decided to ask if there are ways to measure life satisfaction and happiness and that lead us to consider wisdom: How do we define it? How do we measure it? And how do we improve and encourage it?”

Dr. Peter Salk, who opened the panel discussion, urged participants to consider, “How can we use science to better forecast the future, and better anticipate and avoid some of the problems of today?”



Panelists explored issues such as culture, neurobiology, types of reasoning, and quality of life near death. An executive report compiled by panelist **Philip Y. Kao**, visiting assistant professor of anthropology at the University of Pittsburgh — who also spent time working in an assisted living facility — said the group’s findings suggest that cognitive aging “does not start at some magic number, say 65 years of age, but rather earlier in adulthood. While it might not make sense to speak of a culture of wisdom, characteristics of wisdom arise from social interactions and experiences throughout the life course, and that doesn’t stop in old age.”

In addition, the group found that policy interventions that raise awareness and teach older individuals new ways of accessing information can produce a “positive feedback loop between wisdom and the brain, neuronal activity through white matter, and good learning.”

Recommendations developed by the panel for individuals and policy makers include:

For Individuals

- stay physically and mentally active, lower cardiovascular risks, and decrease adverse drug effects
- get treatment for depression sooner rather than later
- know where to go for credible, up-to-date information on fraud, risks, etc.

- have a strategy or process in place for making tough decisions
- be honest with yourself about what you can or can’t do anymore
- identify cognitive skills and templates that you can exercise daily with/for others
- create activities and projects that are realistic, challenging, and offer a sense of achievement
- don’t be afraid to ask for help
- identify and fix any sleep disorders, but don’t oversleep
- teach someone something every day; it uses both sides of the brain, enhances neural activity, and encourages an “all-wheel drive” mode of cognition

For Public Policy Interventions

- design and administer a diagnostic tool to test practical wisdom in late life
- conduct workshops for older individuals to give them ideas on how to gain confidence and adapt to uncertainty and misfortune; provide training on how to engage in flexible, short- and medium-term planning and other ways of being self-sufficient
- provide seminars with financial planners, elder law attorneys, and other specialists to provide family members with information on engaging in effective shared decision making
- distribute information on the contribution of wisdom to health and society via flyers, UPMC newsletters, and social media

- provide state ombudsmen with materials to enable them to educate family members and caregivers on the value and possibilities of wisdom for dealing with change
- create a community-based survey to identify the various determinants of wisdom

A Conversation on Aging

Contributing to the Year of the Humanities’

Multidisciplinary Dialogue

“Old age is a topic that philosophers by and large have ignored. My aim ... is to persuade you that this oversight is unfortunate, that old age, spanning, as it does, the concepts of life and death raise issues of great philosophical interests ... I argue that death, about which philosophers have written a great deal, is an unrewarding, virtually sterile concept. There is nothing to be said: Talk of death, though it may have poetic power, is embarrassingly trivial and ends, sooner than later, in a blind alley, in a dead end. I go on to show why an analysis of old age is not equally otiose.”

— **Opening remarks to Old Age, Dr. Mary Mothersill’s 1998 presidential address to the Eastern Division of the American Philosophical Association**

Helen Small, PhD, professor of English at Britain’s Oxford University, was the featured presenter at “A Conversation on Aging,” a special colloquium hosted by the University of Pittsburgh’s Humanities Center on February 2, 2016.

The event was held in conjunction with several initiatives spearheaded during the year by the University of Pittsburgh’s Office of the Provost as part of the **“The Year of the Humanities in the University.”**

Dr. Small’s book, *The Long Life* (Oxford: Oxford University Press), received the 2008 Truman Capote Award for Literary Criticism. She is also the author of *The Value of the Humanities*, a defense of the humanities.

A roundtable discussion was held following a brief presentation by Dr. Small. Serving as the catalyst for the conversation was the presidential address delivered to the Eastern Division of the American Philosophical Association by philosopher **Mary Mothersill, PhD**. Delivered when she was 75, Dr. Mothersill called for a new model of aging.

In keeping with the year’s goal of demonstrating the value of the humanities across disciplines, the conversation included scholars and practitioners from all over the University. Among the 15 academicians and clinicians participating in the discussion was the Aging Institute’s director, **Charles F. Reynolds, III**, as well as professors from law, business, engineering, health sciences, and the liberal arts and sciences.



Research of the Aging Institute's Partners

Aging-related research at the University of Pittsburgh is informed — and inspired — by the varied fields of the experts who are leading the improvements of care and quality of life of older adults. The scope, depth, and continuity of work conducted collaboratively by our partners at the University of Pittsburgh have made our region an epicenter of excellence and a magnet for future innovators in the field of aging.

Centers of Excellence Research Publications Highlights

The following is a representative sampling that highlights the remarkable range and diversity of aging-related research initiatives undertaken by researchers, scientists, and clinicians at the University of Pittsburgh and UPMC that were recently published in peer-reviewed journals.

Advanced Center in Intervention and Services Research in Late-Life Depression Prevention (ACISR/LLMD)

Director: Charles F. Reynolds III, MD

A Hartford Center of Excellence, ACISR/LLMD provides a research infrastructure to promote investigations that ultimately will improve real world practice in the care of elderly living with depression and other severe mood disorders. It focuses on prevention and rehabilitation; improving care of difficult to treat late-life mood disorders and providing assistance to families; and identifying and removing barriers to effective treatment practices in the community, especially among older primary care African-Americans, in the nursing home, and in the rehabilitation setting.

Lenze EJ, Mulsant BH, Blumberger DM, Karp JF, Newcomer JW, Anderson SJ, Dew MA, Butters MA, Stack JA, Begley AE, Reynolds CF III. Efficacy, safety,

and tolerability of augmentation pharmacotherapy with aripiprazole for treatment-resistant depression in late life: a randomized, double-blind, placebo-controlled trial. **Lancet**. 2015, 2;386(10011):2404-12.

Finding: In adults aged 60 years or older who do not achieve remission from depression with a first-line antidepressant, the addition of aripiprazole is effective in achieving and sustaining remission. Tolerability concerns include the potential for akathisia and Parkinsonism.

Kaneriya SH, Robbins-Welty GA, Smagula SF, et al. Predictors and Moderators of Remission With Aripiprazole Augmentation in Treatment-Resistant Late-Life Depression: An Analysis of the IRL-GRey Randomized Clinical Trial. **JAMA Psychiatry**. 2016 Apr 1;73(4):329-36.

Finding: Set-shifting performance indicates which older adults with treatment-resistant depression may respond favorably to augmentation with aripiprazole and thus may help to personalize treatment.

Shear MK, Reynolds CF III, Simon NM, Zisook S, Wang Y, Mauro C, Duan N, Lebowitz B, Skritskaya N. Optimizing Treatment of Complicated Grief: A

Multicenter Randomized Clinical Trial. **JAMA Psychiatry**. 2016 Jul 1;73(7):685-94.

Finding: This multi-site, placebo-controlled, randomized clinical trial confirmed the efficacy of complicated grief psychotherapy for relieving the distress and impairment of prolonged grief reactions. Anti-depressant pharmacotherapy did not outperform pill placebo in ameliorating the symptoms of complicated grief, but did lessen the burden of co-occurring depressive symptoms when taken in combination with complicated grief therapy. Complicated grief affects 7-10 percent of persons who have experienced attachment bereavement, including children, adults, and seniors. This is the largest study to date examining the efficacy of psychotherapy and pharmacotherapy.

Alzheimer's Disease Research Center (ADRC)

Director: Oscar Lopez, MD, Co-Director: William E. Klunk, MD, PhD

The ADRC performs and promotes research designed to gain an understanding of the etiology and pathogenesis of Alzheimer's disease (AD) and the mechanisms underlying the cognitive and neurobiological changes. It also develops strategies targeted at effective early diagnoses and

treatments for AD and other dementias. The publications of the ADRC highlight a focus on imaging biomarkers, neuropsychiatric characterization including the provision of high-quality, behaviorally characterized samples for genetic and postmortem studies, and early stage disease.

Snitz BE, Lopez OL, McDade E, Becker JT, Cohen AD, Price JC, Mathis CA, Klunk WE. Amyloid- β Imaging in Older Adults Presenting to a Memory Clinic with Subjective Cognitive Decline: A Pilot Study. **Journal of Alzheimer's Disease**. 2015 Sep 24;48 Suppl 1:S151-9.

Finding: This study examined the relationship between amyloid-beta ($A\beta$) deposition and subjective cognitive complaints in subjects with normal cognition recruited from the ADRC. Compared to a reference cohort of cognitively normal (CN) individuals, subjects who reported having subjective cognitive decline (SCD) had significantly higher amyloid deposition in three of six regions of interest: frontal cortex, lateral temporal cortex, and parietal cortex. Overall, 57% of SCD participants were PiB-positive by a sensitive, regionally-based definition, compared to 31% of the CN cohort. They concluded that additional studies of presenting SCD are warranted to determine the prognostic significance of $A\beta$ deposition in this context.

Zheng X, Demirci FY, Barmada MM, Richardson GA, Lopez OL, Sweet RA, Kamboh MI, Feingold E. Genome-Wide Copy-Number Variation Study of Psychosis in Alzheimer's Disease. **Translational Psychiatry**. 2015 Jun 2;5:e574.

Finding: Zheng and colleagues conducted the first genome-wide copy-number variation (CNV) study to evaluate whether any CNV is associated with risk of psychosis in AD in subjects recruited from the ADRC. CNV load analysis found no significant difference in total and average CNV length and CNV number in the AD with psychosis group compared with the AD group without psychosis, although suggestive associations of duplications in the SET, JAG2, and ZFPM1 genes were identified. However, a genome-wide significant duplication in the APC2 gene on chromosome 19 was protective against developing psychosis. They concluded that these potential novel loci for psychosis in Alzheimer's disease warrant follow-up in large-scale independent studies.

Gregg NM, Kim AE, Gurol ME, Lopez OL, Aizenstein HJ, Price J, Mathis C, James J, Snitz B, Cohen A, Kamboh MI, Weissfeld L, Klunk WE. Cerebral micro bleeds are associated with reduced cerebral blood flow and metabolism but not amyloid in the very elderly. **JAMA Neurology**. 2015; 72(9):1021-1028.

Finding: This paper found that in cognitively normal elderly individuals, incidental cerebral micro bleeds (CMBs) in cortical locations are associated with widespread reductions in resting-state cerebral blood flow (CBF). Chronic hypoperfusion may put these people at risk for neuronal injury and neurodegeneration. Our results suggest that resting state CBF is a marker of CMB-related small vessel disease.

Ghani M, Reitz C, Cheng R, Vardarajan BN, Jun G, Sato C, Naj A, Rajbhandary R, Wang LS, Valladares O, Lin CF, Larson EB, Graff-Radford NR, Evans D, De Jager PL, Crane PK, Buxbaum JD, Murrell JR, Raj T, Ertekin-Taner N, Logue M, Baldwin CT, Green RC, Barnes LL, Cantwell LB, Fallin MD, Go RC, Griffith PA, Obisesan TO, Manly JJ, Lunetta KL, Kamboh MI, Lopez OL, Bennett DA, Hendrie H, Hall KS, Goate AM, Byrd GS, Kukull WA, Foroud TM, Haines JL, Farrer LA, Pericak-Vance MA, Lee JH, Schellenberg GD, St George-Hyslop P, Mayeux R, Rogaeva E; Alzheimer's Disease Genetics Consortium. Association of Long Runs of Homozygosity with Alzheimer Disease Among African American Individuals. **JAMA-Neurology**. 2015 Nov;72(11):1313-23.

Finding: The AD Genetics Consortium discovered the first evidence of increased burden of runs of homozygosity (ROHs) among patients with AD from an outbred African-American population. This could reflect either the cumulative effect of multiple ROHs to AD or the specific contribution of specific loci harboring recessive mutations and risk haplotypes in a subset of patients. Sequencing is required to uncover AD variants in these individuals. The ADRC contributed data into this important analysis.

Center for Aging and Population Health

Director: Anne B. Newman, MD, MPH

The Center for Aging and Population Health (formerly the Center for Healthy Aging) generates new solutions to the challenges of an aging society through population-based research that promotes healthy aging, longevity, and



prevention of disability. Supported in part by the Centers for Disease Control and Prevention's (CDC) Prevention Research Centers Program, the Center orchestrates epidemiologic and public health research on aging, trains professionals in population research methodology, and conducts community outreach with a goal of keeping older adults healthy.

Kuller LH, Lopez OL, Mackey RH, Rosano C, Edmundowicz D, Becker JT, Newman AB. Subclinical Cardiovascular Disease and Death, Dementia, and Coronary Heart Disease in Patients 80+ Years. **Journal of the American College of Cardiology**. 2016 Mar 8;67(9):1013-22.

Finding: A very important unanswered question, especially in the very elderly, is whether prevention of atherosclerosis and its complications is associated with less Alzheimer disease pathology and dementia. In subjects 80 years of age, there was a greater incidence of dementia than of coronary heart disease. Coronary artery calcium, as a marker of atherosclerosis, was a determinant of mortality, and risk of coronary heart disease and myocardial infarction. White women with low coronary artery calcium scores had a significantly lower risk of dementia.

Rosario BL, Rosso AL, Aizenstein HJ, Harris T, Newman AB, Satterfield S, Studenski SA, Yaffe K, Rosano C; Health ABC Study. Cerebral White Matter and Slow Gait: Contribution of Hyperintensities and Normal-appearing Parenchyma. **The Journals of Gerontology. Series A, Biological Sciences and Medical Sciences**. 2016 Jan 11. pii: glv224. [Epub ahead of print]

Finding: Microstructural integrity is a moderating factor in the association between white matter hyperintensities and gait. This indicates that higher microstructural integrity represents a source of compensation in those with greater white matter hypertension burden to maintain function in late life.

Snyder PJ, Bhasin S, Cunningham GR, Matsumoto AM, Stephens-Shields AJ, Cauley JA, Gill TM, Barrett-Connor E, Swerdloff RS, Wang C, Ensrud KE, Lewis CE, Farrar JT, Cella D, Rosen RC, Pahor M, Crandall JP, Molitch ME, Cifelli D, Dougar D, Fluharty L, Resnick SM, Storer TW, Anton S, Basaria S, Diem SJ, Hou X, Mohler ER 3rd, Parsons JK, Wenger NK, Zeldow B, Landis JR, Ellenberg SS; Testosterone Trials Investigators. Effects of Testosterone Treatment in Older Men. **The New England Journal of Medicine**. 2016 Feb 18;374(7):611-24.

Finding: This national study, co-led by Dr. Jane Cauley at the University of Pittsburgh, demonstrated a beneficial effect of testosterone replacement therapy on sexual function in 790 men aged 65 and older with testosterone levels < 275 ng/dl. There was no benefit on walking or vitality. The sample was too small to evaluate risk.

Division of Geriatric Medicine

Director: Neil Resnick, MD

Designated a National Center of Excellence by the John A. Hartford Foundation, the University of Pittsburgh's Division of Geriatric Medicine is committed to excellence in geriatric research, clinical care, and training. Its research includes the biology of aging, cancer, dementia, depression, falls,

frailty, heart disease, incontinence, infections, mobility, osteoporosis, pain, pharmacotherapy, resilience, and sarcopenia. The division also has NIH support for a Cancer and Aging Center, an Older Americans Independence Center (Pepper), and several NIH-funded research training grants.

Newman AB, Sanders JL, Kizer JR, Boudreau RM, Odden MC, Zeki Al Hazzouri A, Arnold AM. Trajectories of function and biomarkers with age: the CHS All Stars Study. **International Journal of Epidemiology**. 2016 Jun 6. pii: dyw092. [Epub ahead of print].

Finding: Overall, physical and mental function decline with age, but the relative contributions of age and disease are unclear. In this important study, Dr. Newman and colleagues assessed the trajectory of decline in 5,888 participants of the Cardiovascular Health Study, all of whom were >65 years old at enrollment and were followed for up to 18 years. For the first time ever, sociodemographic factors, function, diseases, medications, and biomarkers were all tracked prospectively and concurrently. The study found that the trajectory of functional decline (1) occurred in all participants, (2) accelerated late in life, even for those who remained free of disease, and (3) tracked with known biomarkers although cystatin-C tracked most closely.

Culley CM, Perera S, Marcum ZA, Kane-Gill SL, Handler SM. Using a Clinical Surveillance System to Detect Drug-Associated Hypoglycemia in Nursing Home Residents. **Journal of the American Geriatric Society**. 2015 Oct;63(10):2125-9.

Finding: Because drug-induced hypoglycemia is common in nursing homes (NH), the US Inspector General exhorted providers to better detect and manage it. Dr. Handler's team devised a clinical surveillance system, which included computer-generated alerts for residents with glucose M 70 mg/dL who were taking a potentially-contributing medication. The system detected 772 alerts involving 141 residents, 90 of whom (63.8%) had a glucose M 55 mg/dL, and 42 (29.8%) had a glucose M 40 mg/dL. Insulin orders were associated with 762 (98.7%) alerts. The overall incidence of drug-associated hypoglycemia was substantial at 9.5/1000 resident-days. Future studies will determine the impact of using such a system for real-time detection and management of hypoglycemia in the NH.

Bell SP, Orr NM, Dodson JA, Rich MW, Wenger NK, Blum K, Harold JG, Tinetti ME, Maurer MS, Forman DE. What to Expect from the Evolving Field of Geriatric Cardiology. **Journal of the American College of Cardiology**. 2015 Sep 15;66(11):1286-99.

Finding: Spurred by its Section of Geriatric Cardiology, which was created and led by Dr. Forman, the American College of Cardiology published both this White Paper and a Scientific Statement. The White Paper focuses on the rationale and priorities for the new and growing field of geriatric cardiology, and it includes a suggested core curriculum to improve cardiovascular practice. The Scientific Statement (J Am Coll Cardiol. 2016;67:2419-40) identifies knowledge

gaps in the existing cardiovascular guidelines and the urgent need for more extensive research.

Weiner DK. Introduction to Special Series: Deconstructing chronic low back pain in the older adult: shifting the paradigm from the spine to the person. **Pain Medicine**. 2015 May;16(5):881-5.

Finding: Led by Dr. Weiner and using a modified Delphi technique, content experts and primary care providers collaborated to create practical, age-appropriate, evidence and expert opinion-based algorithms. The goal was to guide the evaluation and treatment of common contributors to pain and disability in older adults with chronic low back pain. These patient-centered algorithms are for: hip osteoarthritis, fibromyalgia, myofascial pain, depression, anxiety, maladaptive coping, insomnia, sacroiliac joint, leg length inequality, lateral hip/thigh pain, lumbar spinal stenosis, and dementia. Publication of the 12 articles is ongoing in 2015-2016 in Pain Medicine, the official journal of the American Academy of Pain Medicine.

Nayak S, Greenspan SL. Cost-effectiveness of osteoporosis screening strategies for men. **Journal of Bone and Mineral Research: the official journal of the American Society for Bone and Mineral Research**. 2016 Jun;31(6):1189-99.

Finding: Osteoporosis affects up to 25% of older men, but the best screening strategy for this group is unclear. To address this gap, Drs. Nayak and Greenspan developed an individual-level state-transition model to identify the

cost-effectiveness of different strategies. Not screening was more expensive than any strategy that included screening with dual energy X-ray absorptiometry (DXA). Of those examined, a strategy that included age, femoral neck DXA, and vertebral fracture assessment was the most effective one within accepted cost-effectiveness parameters.

Gray SL, Anderson ML, Dublin S, Hanlon JT, Hubbard R, Walker R, Yu O, Crane PK, Larson EB. Cumulative use of strong anticholinergics and incident dementia: a prospective cohort study. **JAMA Internal Medicine**. 2015 Mar;175(3):401-7.

Finding: In seniors, anticholinergic drugs can cause a variety of symptoms including delirium. Although symptoms usually abate with discontinuation of the drug, these agents may cause long-lasting problems, including dementia. Dr. Hanlon and colleagues examined prospectively-obtained data from >3000 community-dwelling seniors. All were enrolled in an HMO for at least 10 years, were cognitively intact at baseline, and were screened biannually. The investigators found that use of a minimum effective geriatric anticholinergic dose for 3 years was associated with a 54% increased risk of dementia, even after adjusting for other risk factors, comorbidities, and medications. Moreover, there was a dose response relationship which persisted even after excluding anticholinergic use for two years prior to a diagnosis of dementia. Confirmation of this relationship is required, but these results add one more reason to be



cautious in prescribing agents with anticholinergic side effects, especially for chronic conditions over several years.

Geriatric Research Education and Clinical Center (GRECC)

Director: Steven Graham, MD, PhD

The GRECC is funded by the Department of Veterans Affairs and provides an integrated program of basic biomedical, clinical, and health services research; education of trainees and practitioners; and clinical demonstration projects designed to advance knowledge regarding the care of the elderly, with an emphasis on stroke. Its research focus includes neuronal-cell death in stroke, gene therapy in cerebrovascular disease, depression in the elderly, polypharmacy in long-term care, and end-of-life care.

Suenaga J, Hu X, Pu H, Shi Y, Hassan SH, Xu M, Leak RK, Stetler RA, Gao Y, Chen J. White Matter Injury and Microglia/Macrophage Polarization are Strongly Linked with Age-related Long-term Deficits in Neurological Function After Stroke. **Experiential Neurology**. 2015 Oct;272:109-19. Epub 2015 Mar 31

Finding: Most experimental stroke studies in mice have been performed using young animals and have yielded results that do not translate well to the clinic where stroke typically afflicts the elderly. This study compared the effects of stroke in young vs. aged mice, demonstrating a difference in long-term outcomes between the two groups. Aged mice also exhibited deterioration of functional outcomes after stroke, which was linked to

white matter damage and reductions in activation of neuroprotective cells called M2 microglia/macrophages.

Hanlon JT, Aspinall SL, Handler SM, Gellad WF, Stone RA, Semla TP, Pugh MJ, Dysken MW. Potentially Suboptimal Prescribing for Older Veteran Nursing Home Patients with Dementia. **Annals of Pharmacotherapy**. 2015 Jan;49(1):20-8.

Finding: Nursing home patients with dementia may be more likely to suffer adverse drug events from suboptimal prescribing, which has not been well-studied in this population. Records of 1,303 veterans with dementia living in nursing homes were examined. Three prevalent types of suboptimal prescribing were measured (underuse, inappropriate use, and overuse), and factors associated with these patterns were identified. Future studies are called for to examine the health outcomes of suboptimal prescribing in this population.

Sowa GA, Perera S, Bechara B, Agarwal V, Boardman J, Huang W, Camacho-Soto A, Vo N, Kang J, Weiner D. Associations Between Serum Biomarkers and Pain and Pain-related Function in Older Adults with Low Back Pain: A Pilot Study. **Journal of the American Geriatric Society**. 2014 Nov;62(11):2047-55.

Finding: For older adults with chronic low back pain, magnetic resonance imaging (MRI) of lumbar spine degenerative changes is a suboptimal predictor of pain and pain-related functioning because of the ubiquity of imaging changes in this population. This study found

serum biomarkers that were associated with pain and pain-related functioning when combined with MRI-based results. The findings suggest that serum biomarkers may be used in the future to measure treatment response and design personalized treatment for older adults with low back pain.

Mental Illness Research, Education, and Clinical Centers (MIRECC)

Site Director: Gretchen L. Haas, PhD

The Mental Illness Research, Education, and Clinical Centers (MIRECC) were established by Congress with the goal of researching the causes and treatments of mental disorders and using education to put new knowledge into routine clinical practice in the VA. Specialized mental health centers of excellence (MH CoE) are an essential component of the VA's response to meeting the mental health needs of veterans.

DiNapoli EA, Bramoweth AD, Whiteman KL, Hanusa BH, Kasckow J. Mood Disorders in Middle-Aged and Older Veterans With Multimorbidity. **Journal of Aging and Health**. 2016 Mar 27. pii: 0898264316641082. [Epub ahead of print]

Finding: This study identified the prevalence of and relationship between mood disorders and multimorbidity in middle-aged and older veterans. Cross-sectional data were obtained from veterans who received primary care services at VA Pittsburgh Healthcare System from January 2007 to December 2011 (n= 34,786). Most veterans had three or more organ systems with chronic disease

(95.3%), of which 4.1% had a depressive disorder, 2.5% had an anxiety disorder, and 0.7% had co-occurring depression and anxiety. The odds of having a mood disorder increased with each additional organ system with chronic disease, with odds being the greatest in those with 10 to 13 organ systems with chronic disease. These findings suggest a need to integrate mental health assessment and treatment in chronic healthcare management for veterans.

Kasckow J, Youk A, Anderson SJ, Dew MA, Butters MA, Marron MM, Begley AE, Szanto K, Dombrovski AY, Mulsant BH, Lenze EJ, Reynolds CF III. Trajectories of Suicidal Ideation in Depressed Older Adults Undergoing Antidepressant Treatment. **Journal of Psychiatric Research.** 2016 Feb;73:96-101.

Finding: Latent class growth modeling was used to classify groups of individuals with major depression receiving venlafaxine XR over 16 weeks based on trajectories of suicidal ideation. The optimal model using a zero inflated Poisson link classified individuals into four groups, each with a distinct temporal trajectory of suicidal ideation: those with “minimal suicidal ideation” across time points; those with “low suicidal ideation”; those with “rapidly decreasing suicidal ideation”; and those with “high and persistent suicidal ideation”. Participants in the “high and persistent suicidal ideation” group had worse scores relative to those in the “rapidly decreasing suicidal ideation” group on the Color-Word “inhibition/switching” subtest from the Delis-Kaplan Executive Function Scale,

worse attention index scores on the Repeatable Battery for the Assessment of Neuropsychological Status (RBANS) and worse total RBANS index scores.

Bramoweth AD, Renqvist JG, Germain A, Buysse DJ, Gentili A, Kochersberger G, Rodriguez E, Rossi MI, Weiner DK. Deconstructing Chronic Low Back Pain in the Older Adult: Step by Step Evidence and Expert-Based Recommendations for Evaluation and Treatment: Part VII: Insomnia. **Pain Medicine.** 2016 May;17(5):851-63.

Finding: A multi-disciplinary expert panel, based on the current evidence, developed a treatment algorithm to assist in the management of insomnia in older adults with chronic low back pain (CLBP). A modified Delphi process was used to adapt and refine the algorithm until consensus was reached by a panel of primary care providers. Behavioral/cognitive-behavioral interventions (e.g., cognitive behavioral therapy for insomnia [CBTI]) are the recommended first-line treatments of insomnia for older adults with CLBP. Medications should be considered only if CBTI outcome is suboptimal.

Sweet RA, MacDonald ML, Kirkwood CM, Ding Y, Schempf T, Jones-Laughner J, Kofler J, Ikonovic MD, Lopez OL, Garver ME, Fitz NF, Koldamova R, Yates NA. Apolipoprotein E*4 (APOE*4) Genotype Is Associated with Altered Levels of Glutamate Signaling Proteins and Synaptic Coexpression Networks in the Prefrontal Cortex in Mild to Moderate Alzheimer Disease. **Molecular & Cellular Proteomics.** 2016 Jul;15(7):2252-62. Epub 2016 Apr 21.

Finding: We conducted a state of the art targeted proteomics analysis of nearly 200 synaptic proteins in postmortem frontal cortex tissue from early and middle stage Alzheimer’s disease patients, in contrast to patients with frontotemporal lobar dementia and neuropathologically normal controls. We found, surprisingly, that the synaptic proteome was largely unchanged in Alzheimer’s disease frontal cortex, with the exception of a subgroup enriched for APOE*4 carriers in whom we observed a specific impairment of proteostasis of post-synaptic density glutamate receptors. We further observed that these glutamate signaling proteins were located at the periphery of the synaptic protein network, and thus may be possible to target therapeutically. However, our results suggest that efforts to enhance signaling at these receptors for therapeutic benefit in AD, e.g. via ampakines, metabotropic glutamate receptor agonists, or other glutamatergic agents, would have outcomes dependent on APOE*4 status of the recipients, an observation with important consideration for design and evaluation of ongoing and future therapeutic trials.

Pittsburgh Claude D. Pepper Older Americans Independence Center

Director: Susan L. Greenspan, MD

Balance disorders in older people are common, disabling, and often complex. A concentrated, multidisciplinary effort is needed to understand its causes and consequences — and to develop innovative treatments. The team of investigators at the Claude D. Pepper Older Americans Independence Center offers complementary expertise, outstanding research

productivity, and ongoing studies to address this problem. The center brings together faculty from five schools within the University of Pittsburgh: medicine, nursing, public health, allied health, and engineering.

Delitto A, Piva SR, Moore CG, Fritz JM, Wisniewski SR, Josbeno DA, Fye M, Welch WC. Surgery versus nonsurgical treatment of lumbar spinal stenosis: a randomized trial. **Annals of Internal Medicine.** 2015 Apr 7;162(7):465-73.

Finding: This study was a multisite, randomized controlled trial of 169 surgical candidates with lumbar spinal stenosis aged 50 years or older randomized to surgical decompression (n=87) or physical therapy (n=82). The primary outcome was physical function score on the Short Form-36 Health Survey at 2 years. Intention-to-treat analyses revealed no difference between groups. Sensitivity analyses accounting for the high proportion of crossovers from PT to surgery (57%) showed no significant differences in physical function between groups. The study concluded that surgical decompression yielded similar effects to a PT regimen among patients with LSS who were surgical candidates.

Perera S, Patel KV, Rosano C, Rubin SM, Satterfield S, Harris T, Ensrud K, Orwoll E, Lee CG, Chandler JM, Newman AB, Cauley JA, Guralnik JM, Ferrucci L, Studenski SA. Gait Speed Predicts Incident Disability: A Pooled Analysis. **The Journals of Gerontology. Series A, Biological Sciences and Medical Sciences** 2016 Jan;71(1):63-71.

Finding: Pooled analysis of data from seven studies of 27,220 community-dwelling older adults aged 65 or older with baseline gait speed, followed for disability and mortality were performed. Outcomes were incident inability or dependence on another person in bathing or dressing; and difficulty walking over three years or climbing 10 steps. Results showed that participants with faster baseline gait had lower rates of incident disability. Results were similar for combined disability and mortality. Effects were largely consistent across subgroups based on age, gender, race, body mass index, prior hospitalization, and selected chronic conditions. The data led to the conclusion that gait speed predicts three-year incidence of bathing or dressing dependence, mobility difficulty, and a composite outcome of disability and mortality in older adults.

Marcum ZA, Perera S, Newman AB, Thorpe JM, Switzer GE, Gray SL, Simonsick EM, Shorr RI, Bauer DC, Castle NG, Studenski SA, Hanlon JT. Health ABC Study. Antihypertensive Use and Recurrent Falls in Community-Dwelling Older Adults: Findings From the Health ABC Study. **The Journals of Gerontology. Series A, Biological Sciences and Medical Sciences.** 2015 Dec;70(12):1562-8.

Finding: Despite wide-spread use of antihypertensives in older adults, the literature is unclear about their association with incident recurrent falls over time. This study followed 2,948 well-functioning Health, Aging, and Body Composition study participants over seven

years. The main outcome was recurrent falls (U2) in the ensuing 12 months. After controlling for demographic, health status/behavior, and access to care confounders, the authors found no increase in risk of recurrent falls in antihypertensive users compared to nonusers or those taking higher standardized daily doses or for longer durations. Only those using a loop diuretic were found to have a modest increased risk of recurrent falls (AOR = 1.50; 95% CI = 1.11-2.03). Antihypertensive use overall was not statistically significantly associated with recurrent falls after adjusting for important confounders. Loop diuretic use may be associated with recurrent falls and needs further study.

Glynn NW, Santanasto AJ, Simonsick EM, Boudreau RM, Beach SR, Schulz R, Newman AB. The Pittsburgh Fatigability scale for older adults: development and validation. **Journal of the American Geriatric Society.** 2015 Jan;63(1):130-5.

Finding: This study aimed to describe the development of the Pittsburgh Fatigability Scale (PFS) and establish its reliability and concurrent and convergent validity against performance measures. In this study, 1,013 individuals aged 60 and older self-administered an initial 26-item perceived fatigability scale. Some participants also completed measures of performance fatigability, a 6-m usual-paced corridor walk, and five timed chair stands. Initial analysis reduced the 26-item scale to the 10-item PFS, which showed strong internal consistency and excellent test-retest reliability. The validation samples

adjusted for age, sex, and race, were greater for those with high performance fatigability, slow gait speed, worse physical function, and lower fitness. This analysis concluded that the 10-item PFS physical fatigability score is a valid and reliable measure of perceived fatigability in older adults and can serve as an adjunct.

University of Pittsburgh Cancer Institute

Bennett Van Houten, PhD, Leader, Molecular and Cell Biology Program

Advancing the understanding, diagnosis, and treatment of cancer through basic, translational, clinical, and population-based research programs.

Hu D, Gur M, Zhou Z, Gamper A, Hung MC, Fujita N, Lan L, Bahar I, Wan Y. Interplay between arginine methylation and ubiquitylation regulates KLF4-mediated genome stability and carcinogenesis. **Nature Communications**. 2015 Sep 30;6:8419.

Finding: KLF4 is an important transcription factor and regulator of cell-fate decision, including DNA damage response and apoptosis. We identify a novel interplay between protein modifications in regulating KLF4 function. This study showed that arginine methylation of KLF4 by the protein, PRMT5, inhibits KLF4 ubiquitylation by VHL and thereby reduces KLF4 turnover, resulting in the elevation of KLF4 protein levels concomitant with increased transcription of KLF4-dependent p21 and reduced expression of KLF4-repressed Bax. These results point to a critical role for aberrant KLF4 regulation by PRMT5 in genome stability and breast carcinogenesis.

Gaines WA, Godin SK, Kabbinavar FF, Rao T, VanDemark AP, Sung P, Bernstein KA. Promotion of presynaptic filament assembly by the ensemble of *S. cerevisiae* Rad51 paralogues with Rad52. **Nature Communications**. 2015 Jul 28;6:7834.

Finding: Recombination is a highly faithful pathway to mend DNA double-strand breaks (DDB) in human cells. DDB are caused by replication errors, reactive oxygen species and ionizing radiation. Loss of homologous recombination causes genome instability and increased rates of cancer. This study identified a key set of highly conserved proteins that help regulate the initial stages of homologous recombination, which when defective may cause cancer.

Peifer M, Hertwig F, Roels F, Drexler D, Gartlgruber M, Menon R, Krämer A, Roncaioli JL, Sand F, Heuckmann JM, Ikram F, Schmidt R, Ackermann S, Engesser A, Kahlert Y, Vogel W, Altmüller J, Nürnberg P, Thierry-Mieg J, Thierry-Mieg D, Mariappan A, Heynck S, Mariotti E, Henrich KO, Gloeckner C, Bosco G, Leuschner I, Schweiger MR, Savelyeva L, Watkins SC, Shao C, Bell E, Höfer T, Achter V, Lang U, Theissen J, Volland R, Saadati M, Eggert A, de Wilde B, Berthold F, Peng Z, Zhao C, Shi L, Ortmann M, Büttner R, Perner S, Hero B, Schramm A, Schulte JH, Herrmann C, O'Sullivan RJ, Westermann F, Thomas RK, Fischer M. Telomerase activation by genomic rearrangements in high-risk neuroblastoma. **Nature**. 2015 Oct 29;526(7575):700-4.

Finding: Cancer cells are able to proliferate indefinitely by maintaining the ends of the chromosomes which are called telomeres. As we age our telomeres shorten. Tumor cells either activate telomerase, an enzyme that helps replicate telomeres or maintain their telomeres through the alternative lengthening of telomere (ALT) pathway which involved recombination. This study showed that rearrangements in the gene encoded telomerase, TERT are associated with high-risk neuroblastoma. Another important high-risk group contains ATRX mutations and has low telomerase activity, maintaining long telomeres using the ALT pathway.

Parikh D, Fouquerel E, Murphy CT, Wang H, Opresko PL. Telomeres are partly shielded from ultraviolet-induced damage and proficient for nucleotide excision repair of photoproducts. **Nature Communications**. 2015 Sep 9;6:8214.

Finding: Ultraviolet (UV) light from sunlight is known to cause skin cancer. UV light induces DNA damage at telomeres, the ends of our chromosomes that can cause chromosome aberrations and cancer associated with aging. This study showed that telomere binding proteins reduce the amount of damage generated at telomeres and provides the first evidence that a process called nucleotide excision repair restores damaged telomeres.

Misale S, Bozic I, Tong J, Peraza-Penton A, Lallo A, Baldi F, Lin KH, Truini M, Trusolino L, Bertotti A, Di Nicolantonio F, Nowak MA, Zhang L, Wood KC, Bardelli A. Vertical

suppression of the EGFR pathway prevents onset of resistance in colorectal cancers. **Nature Communications**. 2015 Sep 22;6:8305.

Finding: Molecular targeted drugs are clinically effective anti-cancer therapies. However, tumors treated with single agents usually develop resistance. Resistance to EGFR targeted therapies in colorectal cancer (CRC) is a particularly difficult problem. This study found that CRC, which become resistant to EGFR blockade, activate RAS-MEK signaling. The use of combined EGFR-MEK therapy prevents the development of resistance.

UPMC Palliative and Supportive Institute (PSI)

Director: Robert Arnold, MD

The Supportive and Palliative Care Program at UPMC was established to improve the quality of life of patients whose diseases are no longer responsive to curative treatments. Its team of healthcare professionals offers care for patients with life-limiting illnesses, and provides comfort and support to those patients and their families. The following publications are relevant to today's trend of focusing on patients' desires for care at the end of life and the importance of communicating clearly with the patient and physician or clinician.

Schenker Y, Arnold R. The Next Era of Palliative Care. **JAMA** 2015 Oct 20;314(15):1565-6.

Finding: Initially established as a consult service at a handful of teaching hospitals in the 1990s, palliative care has witnessed tremendous growth over recent decades,

fueled in part by randomized trials demonstrating that specialty palliative care improves outcomes for seriously ill patients. However, this commentary argues that increases in palliative care services will never match vast and increasing palliative care needs. The next era of palliative care should embrace a broader focus on systems of care, measurement, and accountability for palliative care services, and national policy changes that promote universal provision of high-quality advanced illness care.

Kavalieratos D, Ernecoff NC, Keim-Malpass J, Degenholtz HB. Knowledge, Attitudes, and Preferences of Healthy Young Adults Regarding Advance Care Planning: A Focus Groups Study of University Students in Pittsburgh, USA. **BMC Public Health**. 2015 Feb 27;15:197.

Finding: The purpose of this study was to explore young adults' knowledge, attitudes, and preferences regarding advance care planning (ACP) and medical decision-making. In six focus groups comprising 56 young adults ages 18-30, participants expressed (1) heterogeneous attitudes regarding triggers to perform ACP, (2) the opinion that ACP is a marker of individuation, (3) the belief that prior exposure to illness plays a role in prompting ACP, and (4) an appreciation that ACP is flexible to changes in preferences and circumstances throughout the life-course. These data emphasize the need for strategies to increase ACP knowledge, while encouraging population-level, patient-centered, healthcare decision-making.

Leblanc TW, O'Donnell JD, Crowley-Matoka M, Rabow MW, Smith CB, White DB, Tiver GA, Arnold RM, Schenker Y. Perceptions of Palliative Care Among Hematologic Malignancy Specialists: A Mixed-Methods Study. **Journal of Oncology Practice**. 2015 Mar; 11(2):e230-8.

Finding: Patients with hematologic malignancies are less likely to receive specialist palliative care services than patients with solid tumors. This multi-site, mixed methods study sought to understand and contrast perceptions of palliative care among hematologic and solid tumor oncologists, using surveys and semi-structured interviews. Most hematologic oncologists viewed palliative care as end-of-life care, whereas most solid tumor oncologists viewed palliative care as a subspecialty that could assist with complex patient cases. Solid tumor oncologists emphasized practical barriers to palliative care referral, such as appointment availability and reimbursement issues. Hematologic oncologists emphasized philosophic concerns about palliative care referrals, including different treatment goals, responsiveness to chemotherapy, and preference for controlling even palliative aspects of patient care. Efforts to integrate palliative care into hematologic malignancy practices will require solutions that address unique barriers to palliative care referral experienced by hematologic malignancy specialists.



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