



SOWING SEEDS FOR MORE REWARDING LIVES

AGING INSTITUTE

2014 Annual Report

UPMC Senior Services & the University of Pittsburgh

UPMC Senior Services



University of Pittsburgh

“Caring for the elderly population poses a unique set of challenges ... (However), the health care workforce in general receives very little geriatric training ... Interdisciplinary models that support collaboration among multiple types of providers will be essential in improving care delivery for older adults ...

“Changes are urgently needed to provide for a sizable demographic shift that threatens to overwhelm present and future capacity.”

John W. Rowe, MD

*“Retooling for an Aging America: Building the Health Care Workforce”
Chair, Committee on the Future Health Care Workforce for Older Americans
Institute of Medicine of the National Academies, 2008*

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DIRECTOR'S LETTER

This year's Annual Report of the Aging Institute of UPMC Senior Services and the University of Pittsburgh serves as an opportunity to underscore the importance of teamwork. Our mission remains grounded in the quest to further knowledge and understanding of the aging process, the creation and dissemination of innovative education to a variety of audiences, and the development of novel approaches to address the many challenges facing older adults.

Our Workgroups continue to bring together teams of representatives throughout the academic, research, clinical, and community-based arenas. Our newest workgroup is focused on Healthy Brain Aging and seeks to explore scientific, social, and community-based approaches toward the goal of identifying the most promising intervention strategies and preventative approaches for healthier brain aging. What proves to be true is that what keeps your heart healthy also keeps your brain healthy, and this workgroup has designed projects to further examine biomarkers of resiliency, the promotion of healthy brain practices, lifestyle strategies, and the influence of physical activity to maintain cognitive fitness into the later years of life.

We recognize multidisciplinary teams of care both in the acute care and hospital setting as exemplified by programs such as the Acute Care and Transitions Program of Magee-Womens Hospital of UPMC and

the Benedum Geriatric Center. These programs are remarkable examples of inter-professional teams representing a range of disciplines working together to provide exemplary care throughout our health system.

The RAVEN team of physicians, nurse practitioners, pharmacists, educators, and other health professionals was created to execute an innovation project sponsored by the Centers for Medicare & Medicaid Services aimed at reducing the rate of unplanned hospitalizations at 19 skilled nursing facilities throughout western Pennsylvania. As this team enters year three of this initiative, we continue to see the strength and impact of this novel, multidisciplinary approach to the prevention of readmissions.

Teams of lawmakers, legislators, community leaders, and constituents came together through the Pennsylvania Alzheimer's Disease Planning Committee to develop a plan to address the needs of the more than 400,000 individuals living with Alzheimer's Disease and related disorders throughout the state. Public hearings were held throughout the Commonwealth and the voice of the caregiver was strong as many came to speak about their diversity of needs. Many of these comments, along with recommendations outlining a strategic approach to addressing the growth of the disease and related disorders throughout the state, were included in a comprehensive state plan submitted to Governor Tom Corbett. This state plan received the Governor's

approval, and the work continues to support the needs of those living and caring for those with Alzheimer's disease and related disorders.

We brought together teams of educators through our annual Advances in Geriatric Health Symposium and our INSPIRE Caregiver series to continue our work of providing education to a growing audience of frontline health care workers, caregivers, and community members galvanized by training in topics related to the aging process.

We value the guidance from our general advisory and executive boards that contain representation from UPMC and UPMC Health Plan, as well as many disciplines throughout the schools of the University of Pittsburgh. And we recognize with gratitude the team of supporters — Steven Shapiro, MD, Chief Medical and Scientific Officer; Diane Holder, President, Health Insurance Division; our continued support from the University of Pittsburgh's School of the Health Sciences; Thomas Braun, DMD, PhD, School of Dental Medicine; Clifford Brubaker, PhD, 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; Larry Davis, MA, MSW, PhD, School of Social Work — that remain strong champions of partnerships committed to improving the lives of older adults.



Charles F. Reynolds III, MD

Director, Aging Institute of UPMC Senior Services and the University of Pittsburgh

UPMC Endowed Professor in Geriatric Psychiatry

Director, NIMH Center of Excellence in Late-Life Depression Prevention and Treatment, and of the John A. Hartford Foundation Center of Excellence in Geriatric Psychiatry

University of Pittsburgh





Aging Institute Workgroups

In 2013-14, the Aging Institute's Workgroups were thematically aligned to support topics and initiatives on healthy brain aging. The Workgroups bring the insights and creativity of gifted researchers, scientists, and administrators from the University of Pittsburgh, UPMC, and beyond to consider the health, diseases, and complications of the aging brain.

More Active Lifestyles for Healthier Brain Aging

Most of us aspire to not just live longer but to age well in our later years. Yet why do some people show greater resilience in healthy brain aging than others? Most of all, how can we avoid declines in our cognitive health, which impacts our memory, attention, judgment, intuition, and language?

There is growing evidence that staying active can play a key role in brain health, particularly when combined with increases in social interaction and cognitive stimulation. Based on these and other findings, the Aging Institute's **Brain Health Workgroup** assembled a multidisciplinary team to study the impact of increased physical activity on healthy brain aging. Its members include researchers from both the University of Pittsburgh and Carnegie Mellon University with expertise in psychiatry and mood disorders, epidemiology, neuroscience, exercise physiology, and public policy.

"Our Workgroup is looking at the concept of resilience to aging from a variety of perspectives — clinically, in animal studies, and at a molecular level," says Workgroup Co-chair **Caterina Rosano, MD, MPH**, associate professor of epidemiology at the University of Pittsburgh.

"On a clinical level, we specifically want to focus on underserved populations typically excluded in research studies, with the goal of addressing gaps in our knowledge," adds Dr. Rosano. "For example, older African Americans experience higher incidences of disease and

disability, but have higher survival rates than many other groups. What can we learn from them?"

Animal studies by Workgroup Co-chair **Judy Cameron, PhD**, professor of psychiatry and director of the Science Outreach Program at the University of Pittsburgh, offer some promising indicators. "Our work with primates shows that exercise not only increases blood flow, but helps to stimulate new cells in the hippocampus, the part of the brain responsible for basic memory processes," she says. Her research also shows that even small levels of increased physical activity are beneficial. "The question becomes: how can we translate these findings to people?" notes Dr. Cameron. "What kinds and duration of exercise would most benefit our brains?"

A proof-of-concept clinical study has received funding from the Aging Institute, led by Workgroup member **John Jakicic, PhD, FACSM**, professor and chair of the Department of Health and Physical Activity (HPA) at the University of Pittsburgh's School of Education.

"Our facilities are centrally located in a community that gives us strong access to underserved African Americans," says Dr. Jakicic. "The study will focus on functional adults age 65 and older, with a particular interest in involving the 'young old,' so that we can create translational interventions that could encourage the adaptation of healthy aging practices in earlier stages of aging."

In 2014-15, the Workgroup is hoping to secure funding for a basic science study to identify non-invasive

biomarkers, such as DNA scrapings from the mouth or blood samples, as indicators of healthy brain aging. These biomarkers could someday be used as incentives to reward older adults by enabling them to actually chart the progress of their brain health.



Recognizing Delirium

Despite the frequency of occurrence, delirium often goes unrecognized. “Its symptoms are often confused with dementia,” explains Workgroup Chair Betty Robison. “But failure to diagnose delirium early on can result in the delay of treatment of the underlying cause, such as an infectious process, adverse drug reaction, or other serious complications.” Its impact can be profound, leading to prolonged hospital stays, the need for long-term care, and even death.

Signs of delirium come on quickly. They can last for days or weeks, and sometimes longer. Symptoms can change from hour to hour, but generally are worse at night.

Common symptoms include:

- Difficulty paying attention or concentrating
- Confusion about time or place
- Memory problems, especially of recent events
- Agitation
- Emotional changes, such as anxiety, sadness, or euphoria
- Seeing, hearing, or feeling things that aren't there
- Increased sleepiness or lethargy
- Confusing people or objects for something else

Treating Delirium

Treatment varies, depending upon the underlying causes. Nonpharmacological strategies include:

- Addressing sensory issues by obtaining eyeglasses and hearing aids from home
- Gentle reorientation
- Encouraging adequate hydration
- Avoiding too much or too little stimulation
- Having family present
- Protecting sleep
- Promoting comfort
- Offering continual reassurance and support

Raising Awareness of Delirium

According to the American Delirium Society, each year more than 7 million hospitalized Americans experience delirium, a state of confusion or disorientation. Astonishingly, more than 60 percent of all cases go undiagnosed.

The Aging Institute's **Delirium Workgroup** is a collaborative effort aimed at creating system-wide awareness about this serious — and often preventable — medical condition among educators, clinicians, patient care, and support staff throughout UPMC, the University of Pittsburgh, and UPMC Senior Communities.

“Delirium is a major health issue for older adults and not just among those who are hospitalized,” explains **Betty Robison, MSN, RN-BC**, Workgroup chair and geriatric educator for the Aging Institute. “Our Workgroup focused on system-wide awareness to reach everyone who works with older adults in any setting.”

The 20-member Delirium Workgroup developed a five-part education plan in 2013-14 designed to increase awareness and early identification of delirium in clinical settings. Training materials are focused on how to prevent delirium, how to identify predisposing and precipitating factors, the importance of addressing the underlying causes of delirium, such as high-risk medications specific to older adults, infections and inadequate pain control, and nonpharmacological approaches.

The Workgroup's activities included:

- **Development of a series of training videos that dramatize patients experiencing signs and symptoms of hypoactive, hyperactive, and Intensive Care Unit (ICU) delirium.** These videos, or vignettes, were posted on UPMC's intranet for easy access by staff. In the first five months, the videos were viewed more than 600 times. The videos were created in partnership with UPMC's Office of Communication; **Lalith Solai, MD**, assistant professor of psychiatry, University of Pittsburgh; **Neil Resnick, MD**, chief, Division of Geriatric Medicine, University of Pittsburgh; and staff members from Magee-Womens Hospital of UPMC, UPMC McKeesport, UPMC Passavant, UPMC Presbyterian, and UPMC Shadyside, as well as UPMC/Jefferson Regional Home Health and UPMC Senior Communities.
- In December 2013, Workgroup members also presented *Delirium: Bedside Initiatives* at **UPMC Nursing Grand Rounds** in collaboration with representatives from UPMC Shadyside, UPMC McKeesport, and Magee-Womens Hospital.



- **Posting of a detailed PowerPoint® presentation, script, and embedded videos on UPMC's online training site (uLearn).** Additionally, these materials were shared with educators in the Graduate Nurse Residency Program; faculty at UPMC schools of nursing and the University of Pittsburgh School of Nursing; and members of the UPMC Nursing Educator Committee. The Workgroup is hopeful that its Delirium Education Program will become a permanent part of the nursing curriculum, similar to the Ageless Wisdom™ and Realities of Care dementia training initiatives.
- **Posting of videotaped presentations and video vignettes on the Aging Institute's website.** Select presentations given at the Aging Institute's Advances in Geriatric Health Symposium (see page 25) in May 2014 by Lalith Solai, MD, on Delirium, and **Joseph T. Hanlon, PharmD**, professor of medicine at the University of Pittsburgh, on Medications and Delirium, have been posted on the Aging Institute's website for universal access.

Additionally, the Delirium Workgroup has started to develop educational and training materials for use with **non-clinical personnel and family members.** These audiences — who are key to early identification efforts — will be the focus of the workgroup's efforts in 2014-15.

Listening to — and Learning from — Family Caregivers of Individuals with Dementia

“It seems like you have to have gone through this to really be able to understand (what it's like to care for someone with dementia). Outsiders looking in really don't know ... how it wears on you emotionally.”

Family Caregiver
*Aging Institute Dementia Workgroup
Focus Group Participant*

The Aging Institute's **Dementia Workgroup** was created to assist UPMC in addressing its mission of providing the best possible care for patients with dementia and meaningful support for their families and caregivers.

To learn firsthand about the challenges and needs faced by family caregivers of individuals with dementia, the Workgroup conducted a series of focus groups during the summer of 2013.

Undertaken by the staff of the Qualitative Data Analysis Program (QDAP) of the University Center for Social and Urban Research at the University of Pittsburgh, the study engaged family members providing in-home care for loved ones with dementia, as well as those who made the decision to move family members to an assisted living facility for care. The study focused on assessing their need for, access to, preferences for, and knowledge of supportive resources.

A Growing Partnership: The Aging Institute and the Alzheimer's Association

In recent years, there has been a steady increase in collaborative efforts between the Aging Institute and the Alzheimer's Association, with a shared goal of achieving a cure while providing the best quality care for individuals with the disease.

In 2013-14, The Aging Institute helped to secure expert guest presenters at Alzheimer's Association conferences (including its first Diversity Forum) and provided caregiver and clinician training support statewide. Leaders of the Alzheimer's Association also participated in the Aging Institute's Dementia Workgroup.

"We also benefit greatly from leadership-level involvement of individuals associated with the Aging Institute," says Ms. Gail Roddie-Hamlin, MPH, CHES, president and CEO of the Alzheimer's Association® Greater Pennsylvania Chapter (AAGPA). They include:

William Klunk, MD, PhD, co-director of the University of Pittsburgh Alzheimer's Disease Research Center (ADRC) and distinguished professor of psychiatry at



William Klunk

the School of Medicine, is vice chair of the Alzheimer's Association's national Medical and Scientific Advisory Council, which shapes the organization's agenda.

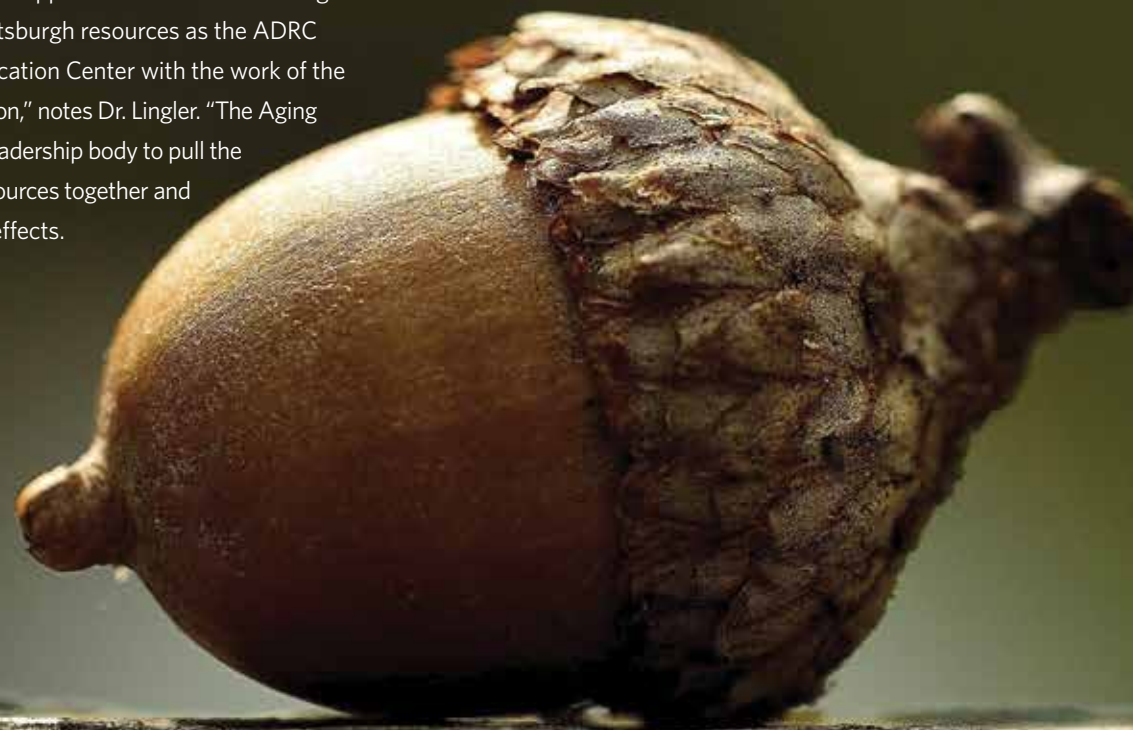
Jennifer Lingler, PhD, CRNP, is an assistant professor at the University of Pittsburgh School of Nursing and director of education and outreach at the ADRC. She serves as secretary of the board of the Alzheimer's Association® Greater Pennsylvania Chapter and chairs its programs and services committee, which provides oversight and direction to services to 50,000 Pennsylvanians annually. Dr. Lingler also is a past recipient of an Aging Institute Seed Grand award (2012) for her work on Amyloid Imaging.

"There are tremendous opportunities for us to leverage such University of Pittsburgh resources as the ADRC and the Geriatric Education Center with the work of the Alzheimer's Association," notes Dr. Lingler. "The Aging Institute serves as a leadership body to pull the strengths of these resources together and allow for synergistic effects.



Jennifer Lingler

"The sheer enormity of scale of individuals with cognitive impairment means no one group can do it all," Dr. Lingler adds. "Partnerships like these can greatly extend our collective impact."



Howard Degenholtz, PhD, associate professor at the University of Pittsburgh's Graduate School of Public Health, Department of Health Policy and Management, served as principal investigator for the study. **Laurel Person Mecca, MA**, assistant director and senior research specialist at QDAP, was the study coordinator.

Three core themes emerged from the study:

There is a real need for general education around dementia and Alzheimer's disease, both among the general public and among those directly touched by dementia. "We learned that family members often didn't seem to know what they were in for: what the disease is about, what causes it, and what to expect," says Dr. Degenholtz.

Many family members are seeking support around the legal, financial, and insurance-related paperwork for dementia care. "Whether you are poor or affluent, caring for someone with dementia is extremely difficult. Layer on top of that the legal, financial, and insurance issues of the disease and you have a whole new level of stress," notes Dr. Degenholtz. "There's a great need for help in deciphering the complex paperwork that is needed, and many families don't know where to turn for help. Even our health care system is ill-prepared to deal with the special needs of dementia patients and their families."

Many expressed frustration that others do not understand the demands of caregiving and were seeking ways to communicate better with friends and

family members. "People are not at all prepared for the 'wraparound' problems associated with dementia that affect their day-to-day quality of life," says Dr. Degenholtz. "The stress and burden of caregiving leads many to become socially isolated and estranged from their siblings and friends. These challenges are even shared by professional caregivers."

In addition to the focus group, the Workgroup continued to build a database of available services to support the needs of caregivers and promote awareness of the Aging Institute's resources, as well as develop educational materials for health professionals.

The Aging Institute's Role in Pennsylvania's Plan for Alzheimer's Disease and Related Disorders

In February 2014, the Secretary of Aging for the Commonwealth of Pennsylvania, Brian Duke, presented the Pennsylvania State Plan for Alzheimer's Disease and Related Disorders to Governor Tom Corbett on behalf of the members of the Pennsylvania Alzheimer's Disease Planning Committee.

"More than 400,000 Pennsylvanians already live with Alzheimer's disease and other related disorders. With the country's fourth oldest population, Pennsylvania greatly needs a plan of action like this to serve us now and in the years to come," says the Aging Institute's Director, **Charles F. Reynolds III, MD**, who was appointed by the governor to serve on the 23-member statewide committee. Fellow committee members

included legislators, medical professionals, and Pennsylvanians living with the disease.

The plan, which took a year to develop, features seven major recommendations and strategies to achieve them. They include:

- Improving the quality of patient care and caregiver support systems
- Building awareness and understanding of the disease
- Creating a responsive and well-prepared health care workforce to meet growing demand
- Supporting research for better treatment, prevention, and cures

The plan is currently under review by the state legislature for approval and funding.

"The recommendations deal with a wide range of issues with a focus on strategic partnerships," says Dr. Reynolds. "There will be many opportunities for UPMC, the University of Pittsburgh, and the Aging Institute to be part of the solution by helping to carry out some of the implementation efforts."

As part of his service on the committee, Dr. Reynolds chaired the Workgroup on Outreach and Prevention, which focused on:

- Methods of disseminating knowledge
- Screening in medical homes
- Strategies for healthy brain aging and physical fitness

According to Dr. Reynolds, members of the planning committee also expressed great interest in some of the new models of care being developed by the Aging Institute, including:

- The Help and Referral Line of the Aging Institute, a free resource phone line that can help individuals to identify needed resources
- The Aging Institute's models of education to "geriatricize" the health care workforce
- The collaborative efforts of the Aging Institute and UPMC Health Plan to improve member access to the services needed by caregivers and Alzheimer's patients through such initiatives as MyUPMC
- The Aging Institute's work to support individual caregivers, especially via self-help tools and training

In February, Gov. Corbett invited Dr. Reynolds to serve on the **Pennsylvania Long-Term Care Commission**, jointly chaired by the Secretary of Aging, Brian Duke, and the Secretary of Public Welfare, Beverly Mackereth. The commission is part of the Governor's Healthy Pennsylvania plan to ensure access to quality, affordable health care. Information on initiatives can be found at www.aging.state.pa.us.

Alzheimer's Disease: "A True Public Health Emergency"

Alzheimer's — the most common form of dementia — is an age-related brain disorder affecting one out of every 10 people over age 65. It gradually destroys a



Gail Roddie-Hamlin *William Klunk, CMAA*

person's ability to think, remember, learn, and perform even the simplest of tasks.

Its damage is insidious, progressing from memory loss, language, and decision-making problems in the early stages, to personality and behavioral changes, the inability to recognize family and friends, and having to depend on others for daily care in the later stages. Ultimately, Alzheimer's leads to death.

"There is no prevention, no treatment, and no cure. And Alzheimer's is growing to epidemic proportions," says **Gail Roddie-Hamlin, MPH, CHES**, president and CEO of the Alzheimer's Association® Greater Pennsylvania Chapter (AAGPA).

"Alzheimer's is a true public health emergency," says Ms. Roddie-Hamlin. "Every one of us is at some risk of acquiring the disease at some point in our lives. And the numbers will only increase."

Consider these facts:

- An estimated 5.2 million people in the United States have Alzheimer's.
- Every 67 seconds, another person is diagnosed with the disease.
- Alzheimer's is the nation's sixth-leading cause of death.
- America's first baby boomers turned 65 years old in 2011. By 2029, all boomers will be at least 65 — a group totaling an estimated 70 million people.
- By 2050, the number of Americans with Alzheimer's is expected to more than triple to 16 million.

Women are disproportionately impacted both as Alzheimer's patients and as caregivers. In Pennsylvania, approximately 669,000 caregivers provide 760 million hours of unpaid service each year caring for Alzheimer's patients. The financial burden is just as dramatic. One dollar out of every \$5 spent by Medicare and Medicaid — more than \$214 billion — goes to treat Alzheimer's.

"People think Alzheimer's is a natural extension of aging — but it is not. It is a unique and devastating brain disease with a tremendous impact on family, friends, and caregivers," Ms. Roddie-Hamlin says. "It is a looming crisis in America, and we need to keep investing in finding solutions."

The Alzheimer's Association is leading the charge across the country and globally in a four-pronged effort aimed at:

- Advancing research
- Enhancing care and support for those affected
- Educating the public about early detection and brain health
- Advocating for funding of research, prevention, and care initiatives at all levels of government

Ms. Roddie-Hamlin points out that campaigns to eradicate breast cancer, heart disease, and stroke have yielded dramatic results. "Alzheimer's has to become an equally urgent national priority," she says. "The solution lies in research."

In 2013-14, there was an unprecedented \$122 million increase for Alzheimer's research, education, outreach, and caregiver support from the federal government. The Association's Research Grants Program is a leading funder of Alzheimer's research nationally, and has been involved in every major breakthrough in Alzheimer's and related research since the 1980s.

"This year, our national association awarded its largest-ever research grant — \$8 million over four years — to expand a prevention trial," adds Ms. Roddie-Hamlin, which includes participating sites in Pennsylvania.





New Models of Care: Fostering Interprofessional Care

Health care delivery is moving toward increasingly multidisciplinary and interprofessional models of care. This shift also is guiding the education and training of health care professionals nationwide. From bench to bedside, the research and clinical partners of the Aging Institute at the University of Pittsburgh and UPMC are playing a leadership role in advancing this movement for services to older adults.

Innovations in Interprofessional Health Care

The University of Pittsburgh is one of eight institutions participating in the **National Coordinating Center for Interprofessional Education and Collaborative Practice**. Spearheading this effort is the University of Minnesota Academic Health Center, with funding from the U.S. Health Resources and Services Administration (HRSA) and several private foundations. The only organization of its kind in the country, the Center is charged with providing “national leadership in the field of interprofessional education and collaborative practice among health professionals.”

Guiding the efforts of the University of Pittsburgh and UPMC as an “innovation incubator” in the four-year initiative are **Susan M. Meyer, PhD**, associate dean for education, School of Pharmacy; **A. Everette James, JD, MBA**, professor of health policy and management, and director of the Health Policy Institute; **Tami Minnier, RN, MSN, FACHE**, UPMC chief quality officer; and **Ben Reynolds, PA-C**, director of the UPMC Office of Advanced Practice Providers.

“With labor making up a majority of health costs, we must continue to seek efficiencies and improvements in the U.S. health care workforce,” says Professor James. “Across the University of Pittsburgh and at UPMC, we’ve identified a system of feedback loops to evaluate innovations in the practice environment where interprofessional care is being employed, so these can then be integrated into our education and training

programs. Our focus is on preparing graduates to function at a higher level in an interprofessional environment — a ‘collaborative-ready’ workforce.”

Professor James cites UPMC’s RAVEN grant (see page 17) as an ideal example of the increasingly multidisciplinary collaboration needed to achieve solutions for quality patient care. “As we have in other sectors of the economy, optimizing the health care workforce will be key to achieving better care at lower costs” says Prof. James. “Because of its cutting-edge role in RAVEN and other geriatric initiatives, the Aging Institute serves as an important resource for innovation in the practice setting, as well as providing feedback to our health sciences schools.”

All Together Better Health VII Conference Pittsburgh 2014

UPMC and the University of Pittsburgh hosted the **All Together Better Health VII Conference** in June 2014, a global conference drawing more than 1,000 researchers and practitioners from 27 countries to explore the latest innovations and research on interprofessionalism and team-based care. Pittsburgh’s selection marked the first time that the conference was held in the United States.

“This was a remarkable opportunity to take stock in new models of care and the best global thinking of how we move teamwork and interprofessionalism into the practice setting,” says **A. Everette James**, who leads the Pitt Health Policy Institute. “UPMC and the University of Pittsburgh are seen as leaders in integrated delivery and

finance systems. Our selection to host this global conference recognized our strengths not only in research and health care delivery, but in workforce innovation and new models of care as well.”

The conference featured more than 40 presentations on interprofessional topics by researchers and clinicians from the University of Pittsburgh and UPMC.

“Geriatricizing” Hospitals for Better Care

Geriatric medicine at UPMC is pioneering a proactive, team-based, multidisciplinary approach for improving the care and safety of older adults in every aspect of their hospital stay — resulting in better care for all.



Since its inception in 2010, the **Acute Care and Transitions (ACT)** program at Magee-Womens Hospital of UPMC has shown that anticipating problems in older adults — and developing a patient-centered, multidisciplinary program of care to respond to those unique needs — can result in shorter hospital stays, reduced complications from hospitalization, and fewer readmissions when compared to other hospital treatment programs not tailored to geriatric patient needs.

Given these successes, the ACT program has since been extended to every area of operation, hospital wide, through its distinctive team-based approach.

Leading the effort is **Neil M. Resnick, MD**, Thomas Detre Professor of Medicine and chief of Geriatric Medicine, UPMC and University of Pittsburgh. Dr. Resnick also serves as associate director of the Aging Institute and as a member of the Innovation Advisors Program of the Centers for Medicare and Medicaid Services' (CMS) Innovation Center.

"Hospitals are structured to excel at treating acute medical problems," says Dr. Resnick. "But in older patients, an acute illness like pneumonia is layered on top of a host of pre-existing conditions — such as heart, lung, or kidney disease, and even malnutrition — not to mention the multiple medications that older adults must take to treat these problems."

An acute medical condition can often "tip over" these pre-existing conditions. "It creates a domino effect in older patients that most hospitals often don't consider," explains Dr. Resnick. "To successfully treat these patients, our focus must shift from just one problem to the multitude of problems at stake.

"By optimizing a patient's condition and disease management, hospitals can prevent pre-existing conditions from worsening and identify all the other things that need to be addressed," he continues.

"The success of this concept hinges on training a multidisciplinary team that includes every person who comes into contact with older patients at a hospital, and not just at the point of entry or on a ward."

Magee is currently training its hospital staff to look for and recognize potential problems in older adults, develop a plan of action, and intervene actively as needed.

"We're also putting formal, systems-based initiatives in place — like proactively screening for very common problems such as falls, aspiration, malnutrition, and delirium — so that we can identify issues before a patient's condition worsens," says Dr. Resnick. "For example, fewer than 2 percent of all hospitals in the United States regularly screen for delirium, even though it affects millions of hospitalized patients annually."

The goal ultimately is to train all UPMC hospitals in optimal geriatric care. "In geriatrics, the ruling philosophy is an ounce of prevention is worth a pound of cure," says Dr. Resnick. "Better care for older people through a multidisciplinary team approach translates to better care for everyone."

Being Part of a Multidisciplinary Team: A Personal Perspective

"It truly does 'take a village' to support the needs of older adults. Aging can be extremely complicated, and patients benefit immensely when a care team is able to step back and take a look at the big picture. For me, that broad-based perspective is the strength of being part of a multidisciplinary team. That approach makes a critical difference in the success of our care.

"Throughout my career in health care, I've always worked in environments that encouraged, and often demanded, a multidisciplinary approach. I believe that everyone on a team has a role to play and an important voice to share. Most of all, there's so much that we can learn from each other.

"At UPMC Benedum Geriatric Center, our team approach starts with the first call to the front desk through the appointment and check-out. Everyone who comes into contact with our patients and their families plays an important role on the treatment team to make their visit as positive and productive as possible.

"Being part of a team requires communication, education, planning, and support, plus a healthy respect for maintaining boundaries. Our patients rely not only on our doctors and nurses, but on pharmacists, podiatrists, nutritionists, social workers, support staff, and other professionals. Working together as a team, we're able to

maximize what we can — and prevent what we can — for each of our older patients, with the goal of making their quality of life as rich and fulfilling as possible."



Carol M. Leach, LCSW
*Psychiatric Social Worker,
Supportive Care Clinic
UPMC Benedum
Geriatric Center*





Innovations in Supporting Research

One of the main charges of the Aging Institute is “sowing seeds” in the area of innovative health services research. Through the Seed Grant program and other initiatives, the Aging Institute is fostering new and novel research in a variety of aging-related areas. Many of these “seed” projects have gone on to receive additional funding from external sources, expanding their reach and ability to affect positive change for seniors locally and beyond.

UPMC’s Raven Grant: Year Two

Reducing **A**voidable Hospitalizations Using **E**vidence-Based Interventions for **N**ursing Facility Residents

UPMC is one of seven organizations nationwide selected to receive an Innovation Award from the Centers for Medicare and Medicaid Services to help reduce the number of hospital readmissions among nursing home residents. Now entering its third year, the \$19 million RAVEN grant involves a broad-based collaboration between UPMC Community Provider Services, the Aging Institute, UPMC Palliative and Supportive Institute, and four community partners with 19 non-UPMC nursing facilities spanning 13 counties in western Pennsylvania.

“With the RAVEN grant, we are playing a leadership role in improving the health care and quality of life of nursing home residents in our region through community partnerships,” says **Mary Ann Sander, MHA, MBA, NHA**, vice president for Aging and Disability Services, UPMC Community Provider Services. “Our approach is a direct-care model that builds on the findings of the Aging Institute’s Unplanned Readmission Workgroup. That’s why the heart of our program is the presence of skilled and specially trained on-site enhanced care nursing staff at each facility.”

A nurse practitioner works with a facility’s nursing staff to provide preventative services, improve the assessment and management of residents’ medical conditions, and provide advance-care planning. They also support and

coordinate treatment for patients and their families who choose palliative care as end-of-life approaches. “In many ways, each nurse practitioner is an army of one,” says Ms. Sander. “Our focus is on giving them the deep resources and support they need to successfully achieve these goals.”

In 2013-14, that support included implementation of a set of communication tools such as INTERACT (**I**nterventions to **R**educe **A**cute **C**are **T**ransfers) at all facilities. This evidenced-based tool is designed to improve clinical assessment and staff communication about residents’ changing medical conditions among nursing facility staff, on-site nurse practitioners, and physicians.

Additionally, UPMC’s RAVEN initiative is distinguished by its use of telemedicine to enhance around-the-clock communication and care. Its signature feature is **mobile telemedicine carts** — dubbed “Telly” — that are now fully operational in 18 of the 19 facilities. All RAVEN staff and more than 225 nursing staff members have been trained in their use.

“UPMC is the only grant recipient to use mobile carts as part of a telemedicine program, and staff reaction has been extremely positive,” says **Steven Handler, MD, PhD, CMC**, medical director for long-term health care information technology at UPMC Senior Communities. “While we faced some initial technology hurdles, we’ve learned that the use of mobile carts has tremendous potential for broader use nationwide.

The ability to support nursing home facilities with telemedicine services can be achieved anywhere a telecommunication link can be made.”

Reducing Medication Errors in Nursing Homes

Most nursing home residents have complex medical conditions requiring multiple medications as part of their care. It’s not unusual for a resident to take 10 or more medications daily. Not surprisingly, such numbers increase the chance of drug interactions, as well as the risk of error.

To help address that problem, UPMC has integrated a strong pharmaceutical component into its RAVEN grant — the only recipient nationwide to do so. “The initiative is giving us an unprecedented opportunity to provide enhanced medication review and pharmacy engagement to nursing home facilities,” says **Paula Carlock, RPh**, executive director of RxPartners, part of UPMC Community Provider Services. “Our goal is to identify ways to actively reduce the risk of pharmacy-related complications, known as adverse drug events (ADEs).”

“Medicare requires every skilled nursing facility to have a consulting pharmacist perform monthly reviews of resident medications, with the goal of tailoring those medications to meet patient goals as established by Pennsylvania Orders for Life-Sustaining Treatment (POLST),” says **Scott Stephens, RPh**, clinical pharmacy

manager at RxPartners. “With RAVEN, we’re building on that process by focusing on specific triggers that can cause an ADE.”

In 2013-14, RAVEN’s pharmacy team collected and reviewed paper-based data on all residents’ medication requirements, lab work, goals of therapy, POLST, physicians’ orders, and basic demographics.

(Note: Because the participating 19 RAVEN nursing facilities do not share common software and computer systems, computerized data collection was not possible.)

“This process enabled us to create a retrospective of paper-based triggers of ADEs that have occurred or are occurring,” explains Dr. Stephen Handler, who first developed trigger tools at UPMC with **Joseph T. Hanlon, PharmD, MS**, professor of medicine at the University of Pittsburgh, in conjunction with the Institute of Health Information.

“Our clinical pharmacists are looking for interactions that are not typically part of pharmacy reviews, with an increased emphasis on anticipating and avoiding potential problems,” adds Ms. Carlock. “They are also making routine lab recommendations for monitoring residents with chronic conditions, which is another unique aspect of UPMC’s RAVEN program.”

Potential targeted ADEs included in the RAVEN pharmacy review include:

- Acute kidney injury
- Drug-induced anemia
- Hypokalemia
- Hyperkalemia
- Hypoglycemia
- Hyponatremia

Based on the data collected, more than 1,350 recommendations were made on patient medications in 2013-14. About 11 percent involved potential ADEs, while 44 percent requested additional lab monitoring. Approximately 6 percent involved psychoactive drugs, such as medication changes or dosage adjustments.

In 2014-15, the pharmacy team will focus more on the issues of psychoactive medications, a subject of growing public and medical scrutiny.

PCORI GRANT

On the Move: Optimizing Participation in Group Exercise to Prevent Walking Difficulty in At-Risk Older Adults



Three years ago, **Jennifer Brach, PhD, PT**, used an Aging Institute Seed Grant to develop an exercise program based on her research on the biomechanics of walking. Working with a group of residents at two UPMC Senior Communities’ independent living facilities, she put her theories to work in a twice-weekly exercise class with input from a series of focus groups with seniors.

Because walking is key to maintaining independence, On the Move focused on the timing and coordination of stepping and walking. “The exercises targeted the underlying biomechanics of walking through specifically designed stepping and walking patterns,” says Dr. Brach. “Our goal was to improve walking, which in turn would help the participants maintain their independence.”

Last year, Dr. Brach leveraged her Aging Institute project and other research support into a three-year, \$2 million project funded by the Patient-Centered Outcomes Research Institute (PCORI) — a non-governmental institute created as part of the 2010 Patient Protection and Affordable Care Act. PCORI funds research initiatives that give both patients and health care providers evidence-based information for better-informed health care decisions.

“The Aging Institute pilot project was critical to securing the PCORI grant. The data and focus group demonstrated the feasibility of recruiting participants and establishing relationships with stakeholders,” she said.

For the PCORI grant, Dr. Brach has added to the exercise program and is expanding her work to engage 560 seniors — a broad cross-section of residents from 28 independent living communities (including seven UPMC Senior Living facilities) and senior high-rises. To qualify, participants must be 65 or older, capable of walking independently a “household distance” with no more than a straight cane, and be medically stable.

Dr. Brach began recruiting participants in the spring of 2014. Over the next two years, participants will be randomly assigned to either a 12-week On the Move exercise group or a standard group exercise program. Each person’s ability to walk and carry out everyday activities will be assessed before and after the exercise program.

The project includes two Community Advisory Boards comprised of older adults and middle managers and staff who will serve as key advisors to the research project. Dr. Brach also plans to have an outside group survey the CAB members to ensure that they are being heard.

The exercise phase of the project will end in March 2015.

“On the Move gets at the heart of PCORI. You have your stakeholders — mine are older adults and UPMC Senior Communities — and you focus on getting feedback and ideas from them to improve the process. It becomes an extremely collaborative, interactive learning experience for all parties,” says Dr. Brach.

Dr. Brach hopes the project will demonstrate the value of the On The Move group exercise program and better inform patients of choices regarding participation in exercise programs. She also hopes the program can be incorporated into programming for older adults in community centers, health clubs, and senior residences across the country.



UPMC’s **Mary Ann Sander** was recently reappointed to a two-year term on the PCORI Advisory Panel on Addressing Disparities, representing the interests and concerns of patients, caregivers, and advocates. The panel serves as a resource for PCORI in setting its national priorities for research and the research agenda. Ms. Sander’s career reflects a lifetime of service to seniors and people with disabilities. In her current role at UPMC, she provides oversight of the Aging Institute of UPMC Senior Services and the University of Pittsburgh, oversees the UPMC Disabilities Resource Center, and is chair of the executive committee for the Center for Assistive Technology.



Seed Grant Awards 2014

Sowing the Seeds of Future Research

The Seed Grant Program encourages collaborative, multidisciplinary research in new areas of aging that hold the potential to attract future funding from external resources. The following 2014 awards, were made possible with generous support from all six deans of the University of Pittsburgh Schools of the Health Sciences. Launched in 2007, the Aging Institute Seed Grant Program has handed out more than \$900,000 in funding to date.

2014 Seed Grant Recipients and Co-Chair



L-r, Dr. Michael Zigmond, Dr. Peter Wipf, Dr. Judy Cameron, and Dr. John Jakicic

Project Title: Does Environmental Enrichment and Associated Exercise Promote Healthy Aging That Can Be Detected by Peripheral Biomarkers?

Principal Investigator:
Michael J. Zigmond, PhD

Project Title: Examining the contribution of physical activity to brain health and cognition in older adults

Principal Investigator:
John M. Jakicic, PhD

Project Title: Improvement of Memory Functions in Rodent Models of Accelerated Aging

Principal Investigator:
Peter Wipf, PhD

2013 Aging Institute Seed Grant Spotlight

The Role of Telomere and Mitochondria Cross-Talk in Cellular Aging

Patricia L. Opresko, PhD
*Assistant Professor of Environmental and Occupational Health
University of Pittsburgh*



Bennett Van Houten, PhD
*Professor of Pharmacology and Chemical Biology
University of Pittsburgh*



Why do we get old? If cells can make repairs and divide to make new copies, then why do the cells in our bodies wear out? Two researchers at the University of Pittsburgh are working to help unlock the key to cellular aging, and understand its impact on disease and organ failure support.

With funding from an Aging Institute Seed Grant, **Dr. Patricia Opresko** and **Dr. Bennett Van Houten** engaged in a proof-of-concept project in 2013-14 targeting the relationship between telomeres and mitochondria in cells.

“We are using KillerRed — a photosensitive protein — as a precision bomb to deliver a strike, or damage, to a specific part of the nucleus,” says Dr. Van Houten. “By damaging part of the mitochondria, we can then see the impact on telomeres. We can also reverse the process by damaging the telomeres to see if the mitochondria become damaged, or sick.”

Why is this important? Dr. Van Houten explains that mitochondria are a power source for cells. For us to thrive, mitochondria must work well in order to generate the energy our cells need to survive. Problems with the mitochondria can lead to cancer, mitochondrial DNA disorders, and many degenerative diseases associated with aging.

Maintenance of the genome — the genes present in a cell — also is critical for the survival and health of an organism. Telomeres — little stretches of DNA on the end of chromosomes — are a region of the genome that profoundly influences life span, human disease, and genome integrity, says Dr. Opresko. “They are like plastic tips at the end of shoelaces,” she explains. “They keep the ends of the chromosomes from fraying.”

Telomeres allow cells to divide without losing genes, which is necessary for growing new skin, blood, bone,

and other cells. But, each time a cell divides or is stressed, the telomeres get shorter — a process associated with aging, cancer, and death — due to insufficient telomerase.

The two researchers came together to explore the link between the telomere and mitochondrial mechanisms, and how damage to each contributes to organ decline and disease with aging.

Dr. Van Houten's lab, which studies the formation and repair of DNA damage in nuclear and mitochondrial genomes, showed that the protein subunit of telomerase also travels into the mitochondria. Dr. Opresko's lab has been investigating the mechanisms of genomic instability associated with aging and diseases related to aging.

Working together, they developed the new KillerRed targeting approach. For the first time ever, it is allowing them to selectively damage the telomeres or the mitochondrial DNA to study the cause and effect of cross-talk in cellular aging. The cellular study will lay the foundation for further testing in animal models, such as *C. elegans* or zebrafish.

"It's a revolutionary process that could help us to determine if there is a correlation between these two pieces of cell. Our goal is to understand how mitochondria and telomeres 'talk' to each other. If one gets sick, will the other get sick, and vice versa?" says Dr. Opresko.



"By understanding the conversation between the two, we can get a better idea of the impact on aging."

Research Day 2014

A core tenant of the Aging Institute is its commitment to promoting innovative research on aging. One expression of that commitment is its Research Day, which provides a forum for researchers at UPMC, the University of Pittsburgh, and Carnegie Mellon University to network and view posters that showcase the latest in aging research. The eighth annual Aging Institute Research Day took place on April, 10, 2014.

The poster session included more than 50 presentations by clinicians and researchers on an array of topics and research areas. Awards were given to exemplary submissions from students, post-doctoral candidates, junior faculty, and clinicians. Following the poster session, this year's event featured presentations and a panel discussion on the topic of Healthy Brain Aging:

Resiliency, Prevention, Interventions, and Lifestyle Strategies. Featured guest speakers included:

Judy L. Cameron, PhD, Professor of Psychiatry, Director of Science Outreach, Department of Psychiatry, University of Pittsburgh. Healthy Brain Aging! What Research in Monkeys Tells Us

Kirk I. Erickson, PhD, Assistant Professor, Department of Psychology, University of Pittsburgh. Aging, Exercise and Cognition: A brief overview.

Caterina Rosano, MD, MPH, Associate Professor, Department of Epidemiology, University of Pittsburgh. Resilience to Aging.

"Professors Judy Cameron, Caterina Rosano, and Kirk Erickson offered a splendid panel on how physical activity promotes healthy brain aging and cognitive fitness into the later years of life," says Charles F. Reynolds III, MD, Director of the Aging Institute.



2014 Research Day Awards: First Place Winners

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

First Place

Patricia Griffin, Department of Immunology, University of Pittsburgh
NK-like T cells and BDNF comprise a signature of successful aging: The Pittsburgh Pepper Immune Cohort

Post-Doctoral Students Category

First Place

Juleen Rodakowski, OTD, OTR/L, School of Health and Rehabilitation Science, University of Pittsburgh
Predicting conversion to dementia for older adults at-risk for progressing

Junior Faculty Category

First Place

Juliann Jaumotte, PhD, Department of Neurology, University of Pittsburgh
An age-related decline in ERK5 in the basal ganglia may help to explain why age is a risk factor in Parkinson's disease.

Clinical Practitioners Doing Quality or Practice Improvement Category

First Place

Tracy Polak, CRNP, MSN, UPMC Health Plan Supportive Services



Educational Initiatives in Aging Services

In hospitals and homes, from clinicians to caregivers, there is an ever-increasing need for geriatric training and education to deal with the immense physical, mental, and social challenges posed by an aging population. Every year, the Aging Institute's expanding portfolio of educational services and programs helps to enrich the direct care and treatment of thousands of older adults — locally, regionally, and nationally.

Advances in Geriatric Health Symposium

In May 2014, the Aging Institute hosted a two-day symposium at Magee-Womens Hospital of UPMC that featured presentations by leading geriatric researchers, clinicians, and other professionals from UPMC and the University of Pittsburgh.

Formerly offered as the Aging Institute's annual Gerontological Nurse Certification Review, the new symposium was expanded to meet a variety of professional training interests. More than 185 participants attended, including physicians, nurses, physical therapists, dietitians, social workers, and nursing home administrators and staff. Professional continuing education units were offered in several areas.

Topics covered included:

- Delirium
- Late-life depression, complicated grief, and insomnia
- Managing disabilities at home
- Family caregiving
- Geriatric assessment
- Hospital Elder Life Program
- Fall prevention
- Oral health issues of older adults
- Medications and delirium
- Pre and postoperative care of older adults
- Assessment of the older adult driver

Joint Powerful Tools for Caregivers/INSPIRE Program

Last year, the Aging Institute piloted **INSPIRE** (Inspiring **N**ew **S**olutions and **P**roviding **I**ndividualized **R**esources and **E**ducation), its new six-week-long advanced program for caregivers primarily designed for those caring for older adults with dementia. "The response was extremely positive and our participants expressed a desire for even more learning opportunities," says Betty Robison, MSN, RN-BC, geriatric educator for the Aging Institute.

In response, the Aging Institute piloted a dual 12-week program in spring of 2014 that combined two educational programs.

The first six weeks featured the UPMC Health Plan's **Powerful Tools for Caregivers**, a self-care program for caregivers that covers such topics as:

- Reducing personal stress
- Communicating to family members, and health care or service providers
- Dealing with difficult feelings
- Making tough care-giving decisions

The second six weeks focused on the **INSPIRE** program, which includes both individualized support as well as in-depth dementia education on:

- Managing the disease's progression
- Identifying and responding to behavioral issues
- Dealing with depression
- Crisis resolution

Based on feedback provided during the original pilot, the final session of INSPIRE also was redesigned to provide each participant with one-on-one time to discuss specific personal issues.

"We were especially pleased to learn that the 12-week format helped to forge permanent bonds among participants," notes Ms. Robison, adding that many group members plan to continue meeting regularly in the community.

The program was featured on *Pittsburgh Today*, a morning show on KDKA-TV, a local CBS affiliate. The 2014 program was offered at the Mt. Lebanon Public Library, with plans to move to a new community in 2014-15.



When Illness Turns Life Upside Down: Caring for the Caregivers

Frank and Audrey Wadsworth were in their 20s when they met and fell in love at the Linden Grove Dance Hall in Castle Shannon. After a quarter century of marriage, the couple decided to again “give dance a chance.” A few introductory classes led to regular dance lessons, then competitive ballroom dancing. It became a passion that took the award-winning duo across the country and abroad for competitions; the rumba and the cha cha were among their specialties.

The dancing ended when Audrey developed painful spinal stenosis. In June of 2013, she underwent a hip replacement; on Labor Day, she suffered a stroke. On their 50th wedding anniversary last September, a physical therapist at UPMC Mercy helped to clear Audrey’s hospital room so the couple could dance to the *Tennessee Waltz*. Once again, they heard applause as doctors, nurses, and hospital staff cheered them on in celebration of Audrey’s halting steps.

When Audrey returned to their Upper St. Clair home, Frank took on the role of primary caregiver. “She’s an amazing, focused person, and that has sustained her through her recovery,” he says. “I still see the girl I fell in love with at the dance.”

Still, it was a relief when Frank learned about the Aging Institute’s joint **Powerful Tools** and **INSPIRE** program. Frank says the program has given him the opportunity to come together and talk with others who are caring for loved ones. “It’s an incredible source of positive

reinforcement for me,” says Frank. “Our discussions validate what I’ve been doing.”

Frank says he learned to take care of himself and to stay active. A man of strong faith, he attends St. Thomas More Catholic Church and meets weekly with “More’s Men” to discuss scripture.

But the biggest lesson he has learned through **INSPIRE** is patience. “I’ve learned new ways to be more patient with myself. That has been a real blessing,” he says.

Inspiring the Next Generation of Geriatric Professionals



The Aging Institute is deeply committed to encouraging young people to enter the geriatrics field. One important expression of that commitment is the Aging Institute’s involvement in the **University of Pittsburgh’s Health Career Scholars Academy**.

For more than two decades, this unique, four-week summer program has brought talented teenagers to

Pittsburgh to examine issues and careers in health care. Offered to rising high school juniors and seniors, the highly competitive program follows a rigorous schedule of core courses, concentration courses, discussion groups, team projects, job shadowing, guest speakers, and site visits.

“It’s an incredible immersion experience, with classes, field experiences, and assignments running seven days a week,” says **Academy Director Karen D. Narkevic**. “These bright students are getting an inside view into one of the nation’s leading medical centers. And they are learning from the best of the best.”

According to Ms. Narkevic, the program has inspired countless students to pursue careers as doctors, nurses, dentists, radiologists, pharmacists, and other health care professionals, including geriatrics. “Each year, we’re seeing more and more students express an interest in the Academy’s geriatric track,” she says.

That concentration offers students an in-depth look at geriatrics and aging from staff members of the Aging Institute and the Division of Geriatric Medicine at the University of Pittsburgh. Students explore aging issues such as chronic pain and mood disorders, balance disorders, falls and difficulty walking, memory problems and dementia, and other complex health problems affecting older adults. Students also participate in sensitivity training that demonstrates the challenges of vision and hearing loss, arthritis, and other physical effects of aging.

Ongoing Programs

The Aging Institute continues to offer a wide range of educational and training opportunities for physicians, nurses, other health care professionals, health care educators, caregivers, and the general public. They include:

- Ageless Wisdom™
- Ageless Wisdom™ Train the Trainer
- Gerontology Certificate
- Graduate Gerontology Certificate
- Geriatric Resource Nurse (GRN) Program
- I AM HERE: Interventions for Assessment of Mental Health in Elders with Resources and Education
- Finding Your GPS (Goals, Passion, Support)
- Senior Living LGBT Sexuality Training
- Realities of Care Dementia Training

Details on these programs can be found on the Aging Institute’s website, Aging.UPMC.com.





Connecting to the Community

Engaging with the community and providing resources to those in need are central to the mission of the Aging Institute. Taking the help directly into communities that need it the most is proving to be one of the best ways to extend the reach and assistance the Aging Institute can provide.

Getting Answers Any Time, Any Place

Day and night, the Aging Institute's newly designed website and its Information and Referral Line are available to offer older adults, their caregivers, and families fingertip access to support services and advice.

The **Information and Referral Line** is a free, one-stop service linking callers to a wealth of community-based information, assistance, and resources. Two staff members help to research specific requests ranging from "How can I reduce the costs of my medication?" to "Are there any senior centers close to my home?"

Aging.UPMC.com

The Aging Institute's newly redesigned website, Aging.UPMC.com, is the communications hub for the work and resources of the Aging Institute. Redesigned from the ground up, the site has easy-to-navigate sections for the varied audiences the Aging Institute serves — health care professionals, students, researchers, and the community at large. With an expanded section of resources for caregivers, and an in-depth section on how the Aging Institute's Help and Referral line can aid older adults and caregivers in need, the new site is positioned to expand and evolve to serve the ever-growing and changing needs of the community.

Resources for Caregivers

There is no denying the fact that the work caregivers perform has immeasurable benefit to those being cared for and the community at large. But the burdens of

being a caregiver can be great, and finding help or answers to questions can be difficult and time consuming. The website's Resource for Caregivers section is an ever-expanding resource for caregivers in need of support or guidance. The section includes areas on Advance Planning, Understanding Medicare, Self-Health Management, Social and Emotional Support, and many others. The section was designed to be easy to navigate and written in clear, simple language, with many helpful links, phone numbers, and other resource information for those in need.

Partnerships and Collaborations

The Aging Institute's website houses a collection of microsites for Aging Institute partners and collaborative efforts. The site is the state-wide repository for information and resources for POLST (Pennsylvania Orders for Life Sustaining Treatment). The site also houses information and resources for the PA Partnership to Improve Dementia Care project, a Centers for Medicare and Medicaid-sponsored initiative to help reduce antipsychotic medication use in skilled nursing facilities. **David Nace, MD, MPH, CMD**, Division of Geriatric Medicine at UPMC and Chief of Medical Affairs at UPMC Senior Communities, was selected by a group of stakeholders to lead the PA Partnership. Additionally the website includes links and overview information for other areas at UPMC and the University of Pittsburgh that the Aging Institute collaborates with, including the Geriatric Education Center, Disabilities Resource Center, and Palliative and Supportive Institute.

"Nearly one in four adults in the United States is a long-term caregiver for an older spouse, relative, or friend."

News and Events

The Aging Institute of UPMC Senior Services and the University of Pittsburgh offers a wide variety of educational offerings, training classes, and other events for health care professionals and the community. Many of the events are free and open to the public. The News and Events section is updated continually with new offerings from not only the Aging Institute, UPMC, and the University of Pittsburgh, but also offerings from community partners and organizations that would be of interest to the many audiences the Aging Institute serves.

Connecting Across Generations

To introduce youngsters to the challenges faced by older adults, the Aging Institute has developed **LINKS: Lessons to Inspire Networking with Kids and Seniors**. Based on Ageless Wisdom™, the Aging Institute's experiential sensitivity training program for adults, LINKS was piloted in 2014 with students in fourth through eighth grade at Pittsburgh's Pace School, which serves students with emotional challenges or autism. Following a one-hour training class, students then visited seniors at nearby UPMC Seneca Place senior

community. “Programs that promote intergenerational understanding offer the potential to enrich the lives of both students and older adults,” says **Kelly Covone-Henning, MA, ACC**, aging educator and community resource coordinator for the Aging Institute. “We hope to expand on this successful first start in this area.”

Meeting the Needs of an Aging Community: The Aging Institute at UPMC McKeesport

The McKeesport area is home to one of the oldest populations in the state. As its residents age, having the right resources available to meet their growing needs is critical.

In April 2014, **The Aging Institute at UPMC McKeesport** — in collaboration with the McKeesport Hospital Foundation — opened as a free resource center to provide seniors, their caregivers, and the entire community with the help they need for healthy aging.



Patrick Fisher, Volunteer Coordinator, UPMC McKeesport, with open house attendee



“Many of our community’s older residents are aging in place at home, and they often do not have relatives nearby,” said **Cindy Dorundo**, hospital president. “Particularly after a hospital stay, it’s important for us to provide comprehensive resources for our geriatric patients and their families.”

Ms. Dorundo said the resource center grew out of a community health needs assessment conducted by the hospital, where three out of every five patients admitted is age 65 or older — and one in five is over 85.

In 2012, that assessment led UPMC McKeesport to become the first western Pennsylvania hospital to receive designation as a **Nurses Improving Care for Healthsystem Elders (NICHE)** facility — a nurse-driven program to help hospitals improve the care of older adults. The Aging Institute played a key role in helping the hospital pursue NICHE status, including providing extensive geriatric training for the nursing staff.

“It was a natural evolution to bring UPMC McKeesport together with the resources of the Aging Institute,” says Ms. Dorundo. “This resource center puts a community face on the work of the Aging Institute.”

Deborah S. Brodine, MHA, MBA, President of UPMC Community Provider Services, says the McKeesport center extends the mission of the Aging Institute. “Having an actual physical presence in McKeesport will give us great insight into how we can be of greater service to older adults and their families throughout the UPMC system.”

The Aging Institute at UPMC McKeesport is staffed by trained health care professionals to provide area seniors and their caregivers with the help and resources they need. Its no-cost services also include educational and training programs.



Bill McCall, MPT, facility director, UPMC Centers for Rehab Services, demonstrates balance assessment tool

Celebrating Senior Champions

Each year, UPMC Senior Services and the Aging Institute honor individuals and organizations that give immeasurable amounts of resources, time, and commitment to advancing the causes of seniors regionally, and beyond.

2013 Champions

2013 saw the sixth annual dinner and auction, hosted on October 2 at the Omni William Penn Hotel in Pittsburgh. Proceeds from the event, totaling over \$150,000, help to support the UPMC Senior Communities Benevolent Care Fund. The event, attended by nearly 350 guests, celebrated and paid tribute to:



Paul Winkler, President and CEO, Presbyterian SeniorCare - Grand Champion



Alzheimer's Association Greater Pennsylvania Chapter, accepted by Gail Roddie-Hamlin, MPH, - Community Champion



Edmund Ricci, PhD, University of Pittsburgh Graduate School of Public Health - Caregiver Champion

2014 Champions

The 2014 Celebrating Senior Champions event will be held on October 23, 2014. Honorees for the event include:



Grand Champions
G. Nicholas Beckwith, III and Dorothy Boyles Beckwith



Community Champion
Family Hospice and Palliative Care, accepted by Barbara Ivanko, President and CEO



Caregiver Champion
Margaret Mary Kimmel, PhD - to be honored posthumously

For more information about Celebrating Senior Champions, and the Benevolent Care Fund, visit UPMC.com/CelebratingSeniorChampions.



Our Partners

At its core, the Aging Institute is a collaborative entity, partnering with organizations inside the University of Pittsburgh and UPMC, and externally across the country and beyond. These partnerships expand the reach and resources of the Aging Institute, and forge relationships that foster creative and mutually rewarding collaborations.

Partnering With the John A. Hartford Foundation

As the nation's first and only academic medical center to be designated as a Hartford Center of Excellence in both Geriatric Medicine and Geriatric Psychiatry, the University of Pittsburgh has recruited and trained scores of clinicians, educators, and researchers for careers in geriatrics. Other Hartford-funded geriatric programs in nursing and social work have helped to prepare hundreds of student-scholars at the University of Pittsburgh to go on to assume innovative and leadership roles in their professions.

The Hartford Commitment

Since its founding in 1929, The John A. Hartford Foundation has worked to improve the health of Americans. By the early 1980s, its leaders took a hard look at the nation's demographics and realized a tidal wave of change was coming in the new millennium. It has been preparing for the future ever since, dedicating its mission to improving the health and independence of older adults.

"With 10,000 baby boomers turning 65 every day, aging is now a 'front and center' issue in our country," says Hartford Foundation Program Director **Christopher Langston, PhD.**



"Unfortunately, the vast majority of our health care system remains unprepared for the demand."

Since 1982, the Hartford Foundation has awarded more than \$450 million in grants to strengthen the nation's capacity to provide effective, affordable care to our rapidly growing older population. It is a champion of research and education in geriatric medicine, nursing, and social work, providing a network of critical support and resources for those who share its vision.

Recently, the Foundation expanded its focus to pursue opportunities that will put geriatric expertise to work in all health care settings — from advancing practice change and innovation, and supporting team-based care through interdisciplinary education of all health care providers, to developing and disseminating new, evidence-based models that deliver better and more cost-effective health care.

"There's a tremendous need to reinvent our health care system to promote wellness, manage the chronically ill, and support people at the end of life with the greatest possible dignity and respect," says Dr. Langston. "The Hartford Centers of Excellence in Pittsburgh are very important because they are responding to real social change with innovation, developing scalable solutions that can be adopted as models throughout the country."

Hartford Funding in Action

Psychiatry

James D. Tew Jr, MD

Assistant Professor of Psychiatry and Advisory Dean

University of Pittsburgh School of Medicine

Medical Director

Inpatient Geropsychiatry

Collaboration Care Management Program

Clinician Educator Faculty Development Program

Western Psychiatric Institute and Clinic of UPMC

Hartford Foundation, Clinician Educator Fellow (2006-2007)

Hartford Foundation, Practice Change Fellow (2008-2010)

Hartford/PCORI CaReAlign Expert Advisory Panel (2014-present)

Dr. James Tew entered medical school at the University of Pittsburgh knowing he wanted to be a medical geriatric psychiatrist.

Since then, his career path has been shaped through his involvement with the Hartford Foundation. While working as an attending psychiatrist at Western Psychiatric Institute and Clinic of UPMC in 2006, Dr. Tew was named a Hartford **Clinician Educator (CE) Fellow**. "The focus of my CE fellowship was to address a concern I developed in residency: reducing the risk that our older



adults would ‘fall through the cracks’ of a complex health care system as they were discharged from our hospital.”

In 2008, as an attending physician in the inpatient geropsychiatry unit of Western Psychiatric, Dr. Tew was awarded a prestigious **Practice Change Fellowship (PCF)** sponsored by the Hartford Foundation and Atlantic Philanthropies — a two-year program supporting future leaders in geriatric care with education, mentors, and financial support to implement innovative programs for older adults. Each year, 10 Fellows are chosen nationwide from the fields of medicine, nursing, and social work. At Western Psychiatric, Dr. Tew implemented a program inspired by the innovative Care Transitions Intervention developed by geriatrician Eric Coleman, MD. He hired and trained a care transitions nurse to improve bi-directional communication between the hospital and area nursing homes, and to enhance his patients’ discharge preparedness.

“That experience was humbling. Care Transitions are tough, but also transformative,” says Dr. Tew. “Meeting with senior mentors from both the provider and the

payer side helped me to abandon some of my ‘siloes’ thinking. I began to feel more accountable not just for quality, but cost and access issues, too. Seeing role models in important administrative roles tackling very tough systems challenges got me thinking, for the first time, that perhaps I could aspire to become an effective administrator and change agent.” In 2010, encouraged by his PCF experience, he joined the Care Management Strategies committee for Western Psychiatric, and sought out mentors at the intersection between clinical and finance. Among them was **Beth Fulena, MSW, LSW**, WPIC’s director of care management.

In January 2012, Dr. Tew was hired as medical director for care management and lead physician advisor for Western Psychiatric. His first care management collaboration with Ms. Fulena was to transform Western Psychiatric’s “perpetually full” geropsychiatric unit into a more efficient service.

“In the three years leading up to our efficiency initiative, our unit lengths of stay had become longer and longer, and wait times for admission had become unacceptable. We engaged everyone on our interdisciplinary care team — social workers, psychiatrists, nurses, and therapists — to help develop creative solutions to address the urgent challenges we face. Our emphasis was on providing better and more efficient care within the constraints of existing capacity,” says Dr. Tew.

Instrumental to the success of the intervention was the support of former Hartford Clinician Educator Fellow **Lalith Solai, MD**, of UPMC. “Improving our efficiency

was an inspiring, but also taxing, endeavor. We had to work through a lot of growing pains as a staff to provide a higher level of service. As medical director (and now chief) of the geriatric service line, Dr. Solai was a steadying voice, encouraging staff who might have rebelled to see the changes through.”

Now that the initiative has become “the new normal,” Dr. Tew has been invited by UPMC to submit the endeavor for a Hospital Association of Pennsylvania (HAP) Award for Operational Excellence. He is also enlisting the help of a member of the clinical research faculty of the University of Pittsburgh School of Nursing, **Mijung Park, PhD, MSN, MPH, RN**, assistant professor of health and community systems, and 2013 Seed Grant recipient, to help him prepare the manuscript for publication.

Dr. Tew’s relationship with the Hartford Foundation continues today. In April 2014, he was invited to serve on the expert panel for the Hartford/PCORI Collaboration **CaReAlign** project, to develop innovative models and best practices for interprofessional communication around our health care systems serving the most complex older adults.

Dr. Tew also enjoys teaching, and in 2014 was inducted into the University of Pittsburgh’s Alpha Omega Alpha Honor Society. The award is given in recognition of a faculty member who consistently goes above and beyond the role of medical educator and sets an example in quality patient care.

Social Work



Brenna Garda, MSW
Social Worker, Senior LIFE

*Hartford Partnership Program MSW Fellow
Class of 2014*

Brenna Garda’s path toward a career in gerontology began at age 4 when she accompanied her grandfather, a Methodist minister, on visits to a local nursing home. “That experience helped to shape who I am today,” says Ms. Garda.

As a college student, she saw hospice in action as her mother cared for her grandparents. She started volunteering at an adult day care center for patients with dementia and Alzheimer’s, which cemented her future. “I realized that this was what I wanted to do with my life,” she says. “Too many older adults are written off. I want to help people see their value.”

After earning her bachelor’s degree at Geneva College, Ms. Garda began working toward her master’s in social work at the University of Pittsburgh. Knowing of her interest in gerontology, her advisor urged her to apply

for a **Hartford Partnership Program MSW Fellowship**. Through the program’s guaranteed internships in aging-related fields, she interned at AgeWell Pittsburgh and at Magee-Womens Hospital’s Supportive and Palliative Care Program.

As part of the fellowship’s requirements, Ms. Garda joined other MSW Hartford Fellows in designing a community enhancement project — Activities and Complementary Services (ACS) for Elders. The project was aimed at improving the quality of life for older adults by recruiting a network of volunteers who could introduce them to various activities and alternative therapies — from art and music to pet therapy and massage.

As part of the project’s education component, her group took the Aging Institute’s Ageless Wisdom™ program to facilities in the community to educate volunteers and therapists on the challenges faced by older adults. “I can’t say enough about how much better prepared these volunteers felt after going through that training,” she says.

Ms. Garda earned a graduate certificate in gerontology along with her master’s degree in social work. In addition, she earned a second gerontology certificate in general geriatric studies through the University Center for Social and Urban Research at the University of Pittsburgh. Shortly before graduation in May 2014, Ms. Garda was offered a job at Senior LIFE in Ebensburg, Pennsylvania, which offers older adults comprehensive support and services to help them stay at home and remain as independent as possible.

Each year entities within the UPMC Community Provider Services division support internships for social work students at the University of Pittsburgh School of Social Work. In the past year, nine interns took on assignments within UPMC Senior Communities skilled nursing facilities, Living-at-Home/Staying-at-Home programs, the Aging Institute, UPMC St. Margaret, and UPMC Palliative and Supportive Institute, among others. Interns receive first-hand, real-world experience and training with the specific issues and complex needs of a geriatric population across the care continuum.

Nursing



Marci Lee Nilsen, RN, MSN, PhD

Postdoctoral Fellow

University of Pittsburgh School of Nursing

Hartford Foundation, Building Academic Geriatric Nursing Capacity Scholar (2007-2009)

Hartford Foundation, Claire M. Fagin Postdoctoral Fellow (2014-2016)

Dr. Marci Lee Nilsen's interest in geriatric nursing began while working as a nurse at UPMC in a neurological step-down unit. As she cared for stroke patients who had difficulty communicating, she saw how frustrating it was for both patients and nurses.

"I wanted to improve communication so we could better assess patients, manage their pain, and meet their needs," says Dr. Nilsen. "It's especially important for older adults, who are also dealing with vision and speech changes that compound communication difficulties."

Dr. Nilsen, who had earned her bachelor's degree from the University of Pittsburgh, decided to continue her graduate studies at the University. In 2007, she received her first Hartford scholarship — a **Building Academic Geriatric Nursing Capacity (BAGNC)** award.

As a BAGNC Scholar, she was able to immerse herself in her doctoral studies as a graduate student researcher in gerontological nursing. That led to a predoctoral fellowship from the National Institute of Nursing Research. She also coauthored several papers relating to her research in communicating with older patients.

Dr. Nilsen, who earned her PhD in nursing in 2013, recently received her second Hartford scholarship — the prestigious **Claire M. Fagin Postdoctoral Fellowship**. This two-year fellowship for advanced research training supports doctoral prepared nurses who are committed to faculty careers in gerontological nursing.

"I'm so grateful for the scholarship support I received from the Hartford Foundation. It allowed me to focus on geriatrics and pursue my dream of becoming a researcher and an educator," says Dr. Nilsen. "When I teach undergraduate nurses, I want to convey my passion for caring about older adults. I want them to understand this is a population that is growing and needs care."

Geriatric Medicine



Rollin M. Wright, MD, MA, MPH

Assistant Professor, Division of Geriatric Medicine

University of Pittsburgh School of Medicine

Geriatric Track Program Director, Internal Medicine Residency Program

Dr. Rollin Wright already had a long list of credentials when she joined the faculty of the University of Pittsburgh School of Medicine in 2005. After earning her medical degree from Albany Medical College, she completed her residency in internal medicine at Brown University in 2002 and continued on as a fellow in geriatric medicine at the Brown University Center for Gerontology and Healthcare Research, where she also earned a master's degree in public health.

It was during her fellowship that she realized how much she enjoyed working with "very physically frail and cognitively frail older adults," says Dr. Wright. "My mentors were engrossed in long-term care and quality improvement. I was drawn into their world."

She came to Pittsburgh to practice geriatric medicine with plans to continue her geriatric research and pursue additional educational opportunities. At the University of Pittsburgh's Division of Geriatric Medicine, faculty mentors encouraged her to apply for a Hartford Scholarship. "They saw my potential as a clinician educator and they guided me through the application process," says Dr. Wright. "Their support was transformational."

In 2008, she was named a **Hartford Teacher Scholar**, which enabled her to earn a master's degree in medical education at the School of Medicine in 2012. It also opened the door for another prestigious award — the **Geriatric Academic Career Award (GACA)**, a five-year grant designed to encourage junior faculty to pursue academic careers in geriatrics by the Health Services Research Administration.

"The Hartford Award was a huge opportunity for me," says Dr. Wright. "I was able to study with master clinician educators and fully dedicate my time to my studies. I learned so much about adult learning and theory, as well as how to develop educational products and activities that could be applied in the curriculum for medical students and fellows."



Today, Dr. Wright is a key clinician educator in the University of Pittsburgh School of Medicine's internal residency program, where she serves as director of the residency's Geriatrics Track. Through the support of her GACA grant, she designed several interprofessional education activities for nearly 200 third- and fourth-year health professions students participating in the annual IP-MACY (interprofessional modeling and caring for the elderly) Geriatrics Course, as well as for internal medicine residents, all of whom spend at least a month in geriatrics.

While redesigning the curriculum, Dr. Wright created the "Roadmap to the Geriatrics Rotation" for residents and medical students. In addition, she designed four advanced geriatrics electives for geriatrics track residents, including Geriatric End of Life and Palliative Care and The Aging Brain — courses that have become increasingly sought-after by non-geriatric track residents. She currently is exploring the potential for a geriatric cardiology elective. During the grant's final year, she will incorporate authentic interprofessional team experiences into all of the geriatrics rotations.

Dr. Wright is a long-term care physician who works almost exclusively with frail elderly patients undergoing skilled rehabilitation and with patients who are severely cognitively impaired. She also serves as a geriatrics hospitalist with the Acute Care of the Elderly (ACE) program at Magee-Womens Hospital of UPMC.

Expanding Futures: Graduate Certificate in Gerontology Program

The spirit of multidisciplinary learning is infused throughout the curriculum of the University of Pittsburgh's **Graduate Certificate in Gerontology**. The program serves both students and professionals from diverse disciplines and endeavors who are interested in acquiring basic knowledge about gerontology and geriatrics, and specialized knowledge of aging and aging processes.



Jason Flatt, PhD, MPH

Postdoctoral Fellow, Neuroepidemiology

University of Pittsburgh

At the Graduate School of Public Health, where he earned a doctorate in Behavioral and Community Health Sciences, Dr. Jason Flatt explores the relationship between brain aging and the social environment of older adults.

Through his current research with **Caterina Rosano, MD, MPH**, associate professor of epidemiology at the University of Pittsburgh, Dr. Flatt is examining the impact of lifestyle and social relationships on brain function and quality of life. He is particularly interested in learning more about how social relationships impact brain aging and aging health. "I wanted to expand my knowledge in this area," he says. "As our population ages, understanding the importance of lifestyle and social interactions on brain health will be key to future advances in research and improving our populations' health."

Dr. Flatt contacted **Richard Schulz, PhD**, associate director of education for the Aging Institute, who encouraged him to pursue a **Graduate Gerontology Certificate**. Through the program, Dr. Flatt was able to customize his studies with a specialization track in mental health, as well as the multidisciplinary prevention and healthy aging. "It was a perfect fit for my goals," he says. "Being able to customize the curriculum allowed me to zero in on my areas of interest."

The flexibility of the program also allowed Dr. Flatt to complete his certificate studies while working fulltime and pursuing postdoctoral studies. He says it was also beneficial working with diverse faculty and an interdisciplinary group of classmates — who included social workers, nurses, and professionals from within the field. "We were able to share real-world experiences and insights," says Dr. Flatt. "It was an invaluable opportunity that expanded my horizons."



Jamie Ferguson-Rome, MHA

*Faculty Instructor, Graduate School of Public Health
Project Director/Research Analyst, Department of Health
Policy and Management
University of Pittsburgh*

While working toward her master's in health administration at the University of Pittsburgh, Jamie Ferguson-Rome's plan was to pursue a career in pediatrics as a health administrator. But all of that

changed while doing field research in senior high-rises. "I found a new path," says Ms. Ferguson-Rome. "I realized I wanted to do more with the aging population."

After earning her master's in 2008, Ms. Ferguson-Rome joined the University of Pittsburgh's Department of Health Policy and Management as a research analyst. She began working with **Nicholas Castle, MHA, PhD**, professor of health policy and management, whose research interests focus on long-term care and nursing home quality. Since then, she has helped to manage Dr. Castle's grants and conduct national surveys, as well as co-author more than a dozen publications with him.

Her first-hand experience in the field and her research inspired Ms. Ferguson-Rome to pursue the Graduate Gerontology Certificate. "I wanted to fill the knowledge gaps in my areas of interest," says Ms. Ferguson-Rome.

Her studies in the program included coursework in dementia. She also developed an interest in environmental gerontology and its impact on the quality of life among older adults. Ms. Ferguson-Rome, who also earned certification as a personal care home administrator, says, "It's so important to understand aging and what is needed to ensure the best quality of life, as well as the best quality of care, in long-term care settings." It's the wave of the future."





Three Decades of Aging Research at the University of Pittsburgh

This section provides a brief history and sampling of the organizational accomplishments that have led the Aging Institute to its present station, positioning it for ongoing and future endeavors.

Richard Schulz, PhD, associate director of the Aging Institute of UPMC Senior Services and the University of Pittsburgh, joined the University in the 1980s as its first director of gerontology. His charge was to stimulate the development of aging research.

Over the last 30 years, more than \$1 billion in funding has been secured for aging research at the University of Pittsburgh, engaging nearly every academic unit and attracting many of the country's top aging researchers, scientists, and clinicians to its programs.

In the fall of 2013, Dr. Schulz — who also is a professor of psychiatry, director of the University Center for Social and Urban Research, and director of gerontology — was appointed the **University of Pittsburgh's Distinguished Service Professor of Psychiatry, School of Medicine**.

During his acceptance address, Dr. Schulz traced the history of aging research at the University of Pittsburgh and the tremendous impact its dedicated scientists and clinicians have had on the field worldwide — and in enhancing the daily lives of older adults everywhere.

"The wealth of aging research taking place at the University of Pittsburgh today can trace its roots to three disciplines — psychiatry, epidemiology, and neurology," says Dr. Schulz. "The visionary efforts of four individuals — the late **Thomas P. Detre, MD**, and **David J. Kupfer, MD**, in psychiatry; **Lewis Kuller, MD, DrPH**, in epidemiology; and **Steven T. DeKosky, MD**, in neurology — were key in securing the University of Pittsburgh's reputation as a major center of aging research."

"The great record of accomplishments here has been made possible through a culture of cooperation and interdisciplinary work," adds Dr. Schulz. "It's been an honor to help establish such a robust and innovative program."

According to Dr. Schulz, the Aging Institute plays an important role in advancing aging research at both UPMC and the University of Pittsburgh by creating an open flow of communication and dialogue among researchers, providing coordination and organizational support, and developing new lines of research opportunities.

Dr. Schulz cautions that aging research faces significant challenges in the current environment. "The levels of external funding that once supported large-scale national and even international studies are dwindling, especially in fields such as epidemiology," he says. "We are learning to shift priorities as we move forward to adapt to emerging trends, such as an increased focus on basic biology. Our ultimate goal, however, remains the same: to help people live long and healthy lives."

A Timeline of Aging Research Highlights at the University of Pittsburgh

1980s

Organizational Initiatives

- Benedum Geriatric Center created
- Social Gerontology Program launched in the University Center for Social and Urban Research, University of Pittsburgh

- Alzheimer's Disease Research Center created
- Geriatric Education Center of Pennsylvania established

Major Externally Funded Research Initiatives

- Study of Osteoporotic Fractures
- Systolic Hypertension in the Elderly
- Cardiovascular Health Study

1990s

Organizational Initiatives

- Late-Life Depression and Prevention Research Center established
- VA Geriatric Research Education and Clinical Center (GRECC) created
- Post-Doctoral Training Programs in Psychiatry and Epidemiology launched
- Council on Aging (precursor of the Institute on Aging and Aging Institute) formed

Major Externally Funded Research Initiatives

- Caregiver Health Effects Study
- National Caregiver Intervention Trial (REACH)
- Sleep in the Elderly
- Osteoporosis in Men
- Women's Health Initiative
- Healthy Aging and Body Composition Study
- Dementia Epidemiology
- Depression Treatment in the Elderly studies

2000s

Organizational Initiatives

- Institute on Aging (now the Aging Institute) created
- Graduate Certificate in Gerontology launched — Pennsylvania's first multidisciplinary training program in aging that encompassed all health professions
- Pittsburgh Claude D. Pepper Older Americans Independence Center established
- Center for Aging and Population Health formed
- Quality of Life Technology Engineering Research Center, launched as a joint research initiative with Carnegie Mellon University
- Hartford Centers of Excellence
- Pittsburgh Mind-Body Center established

Major Externally Funded Research Initiatives

- Ginkgo Biloba Trial
- Healthy Brain Project
- Aspirin Trial — Prolonging Healthy Life
- Physical Activity Trial for Elderly
- Long Life Family Study (genetic and environmental determinants of longevity)
- Testosterone Trial
- Basic Biology of Aging studies

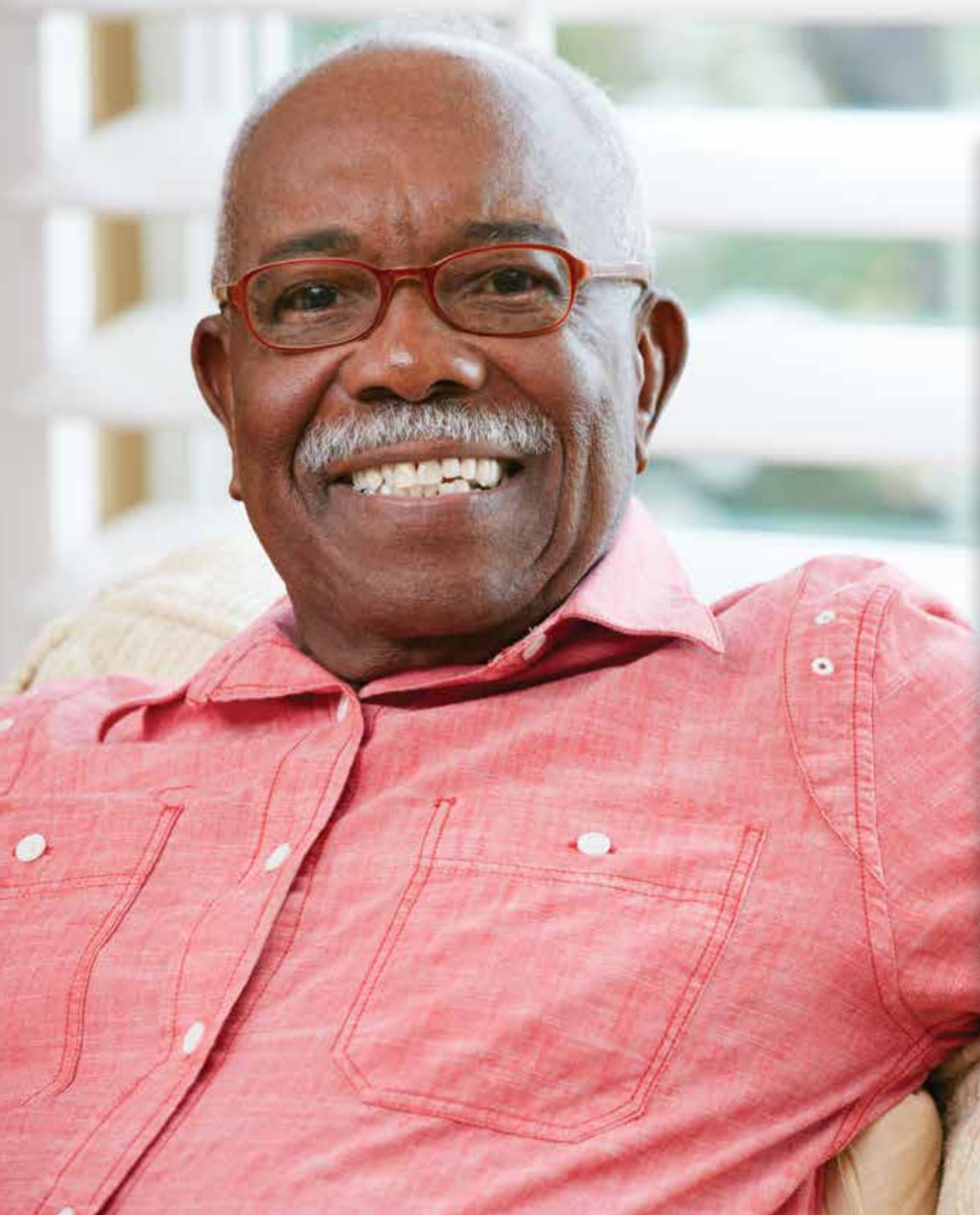
Research Highlights

The following is a sampling of key aging research highlights during the course of the last three decades at the University of Pittsburgh.

- Amyloid deposition (AD marker) can be detected with Pittsburgh compound B (Klunk, Mathis)
- Normal elderly with minimal amyloid deposition or WMH still demonstrate major decrements in processing resources and inhibitory efficiency compared to young (Nebes)
- Ginkgo Biloba does not prevent Alzheimer's disease (DeKosky)
- Hormonal therapy for post-menopausal women increases risk of breast cancer and stroke (Kuller)
- Loss of muscle mass and function is common with aging (Studenski)
- Fat infiltrates muscle tissue with aging, predicting disability (Newman)
- Walking speed predicts survival in older adults (Studenski)
- High blood pressure accelerates gait slowing in well-functioning older adults (Rosano)

- Exercise training increases size of hippocampus and improves memory (Erickson)
- Combined treatments (medication and psychotherapy) are more effective for depressed older adults (Reynolds)
- Depression is a risk factor for mortality (Schulz) and depression care management lowers risk by 24 percent over eight years (Reynolds)
- Being a stressed family caregiver is a risk factor for mortality (Schulz)
- Physicians can and need to be taught how to engage more effectively in difficult conversations with patients — share bad news, explain advance directives, informed consent (Arnold)
- Inappropriate prescribing to older adults is a major problem; high-risk medications identified (Hanlon)
- Simple urine test can indicate a premenopausal woman's risk of suffering bone fractures (Cauley)
- Urinary incontinence (UI) varies by racial/ethnic groups: white > Asian > black; long-term caffeine intake not associated with risk of UI progression over two years among women with moderate incontinence (Resnick)





Research of Aging Institute Partners

The scope, depth, and continuity of work conducted by the Aging Institute's partners at the University of Pittsburgh position it among the nation's leading resources of aging-related research.

Centers of Excellence Research Publications Highlights

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.

Reynolds CF III, Thomas SB, Morse J, Anderson SJ, Albert SM, Dew MA, Begley AE, Karp JF, Gildengers A, Butters MA, Stack JA, Kasckow J, Miller M, Quinn S. Early intervention to preempt major depression among older black and white adults. *Psychiatric Services*, (In Press). PMID:PMC Journal in process.

Finding: PST-PC and diet did not differ significantly in time to major depressive episodes. Incidence of such episodes was low (blacks: 9%; whites: 8%) compared with published rates of 20-25% over one year in care as usual. Both treatments showed decrease in depressive symptoms, sustained over two years. Despite greater burden of depression risk factors among blacks, no significant differences with whites were found in the primary outcomes.

Gallo JJ, Morales KH, Bogner HR, Raue PJ, Zee J, Bruce ML, and Reynolds CF III. Long-term effect of depression care management on mortality in older adults: A cluster randomized clinical trial in primary care. *British Medical Journal*, 2013 Jun 05 [Epub]. PMID:PMC3673762.

Finding: Older adults with major depression in practices provided with additional resources to intensively manage depression had mortality risk lower than observed in usual care and similar to older adults without depression.

Sibille E. Molecular aging of the brain, neuroplasticity, and vulnerability to depression and other brain-related disorders. *Dialogues in Clinical Neuroscience*, 2013 Mar;15(1):53-65. PMID:PMC3622469.

Finding: A review showing that aging of the human brain engages a specific and restricted set of biological pathways and age-related gene changes are continuous throughout adult life and into old age. The same genes that are associated with normal brain aging are also frequently and similarly implicated in depression and other brain-related disorders. Findings suggest a model of age-by-disease biological interactions, in which brain aging promotes biological changes associated with diseases, including late life mood disorders. These findings provide molecular evidence for the well-known clinical and epidemiological facts linking chronological age and brain-related disorders, including depression.

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. Its research centers around the areas of genetics, neuroimaging, neuropathology, and minority outreach. A major focus is matching participating patients and family members with volunteer opportunities for AD-related studies.

Lopez OL, Becker JT, Chang YF, Sweet RA, Aizenstein H, Snitz B, Saxton J, McDade E, Kamboh MI, DeKosky ST, Reynolds CF III and Klunk WE. The long-term effects of conventional and atypical antipsychotics in patients with probable Alzheimer's disease. *Am J Psychiatry* 2013; 170(9): 1051-1058. PMID: PMC3990263.

Finding: We reported a critical, longitudinal observational study of 957 Probable AD patients, 241 (25%) of whom were treated with antipsychotic medications during their illness. In a multivariate model controlled for age, gender, education, dementia severity, hypertension, diabetes mellitus, heart disease, extrapyramidal signs, depression, psychosis, aggression, agitation, and dementia medication use, we found the use of antipsychotic medications, both conventional and atypical, was not associated with either time to nursing

home admission or time to death. Instead, it was the presence of psychiatric symptoms, psychosis and agitation, alone that were linked to these adverse outcomes after adjustment for exposure to antipsychotics.

Hughes TM, Kuller LH, Barinas-Mitchell EJM, Mackey RH, McDade EM, Klunk WE, Mathis CA, DeKosky ST, Lopez OL. Arterial pulse wave velocity is associated with white matter hyperintensities and in vivo amyloid deposition in very elderly subjects. *Neurology* 2013; 81: 1711-1718. PMID:PMC3812104.

Finding: We examined the relationship between amyloid deposition in the brain and arterial stiffness by pulse wave velocity (PWV) in the central (e.g., heart-femoral PWV), peripheral (e.g., femoral-ankle PWV), and mixed (e.g., brachial ankle PWV (baPWV)) vascular beds, using a noninvasive and automated waveform analyzer in non-demented individuals. A β deposition was associated with mixed PWV. By contrast, high white matter lesions (WML) burden was associated with increased central PWV. Compared to A β -negative individuals with low WML burden, each SD increase in PWV was associated with a 2-4 fold increase in the odds of being both A β -positive and having high WML. This study showed that arterial stiffness was associated with A β plaque deposition in the brain. The associations differed by type of brain abnormality and vascular bed measure (e.g. WMLs with central stiffness and A β deposition and mixed stiffness). Arterial stiffness was highest in individuals with both high A β deposition and WML, which has

been suggested to be a “double-hit” contributing to the development of incident dementia.

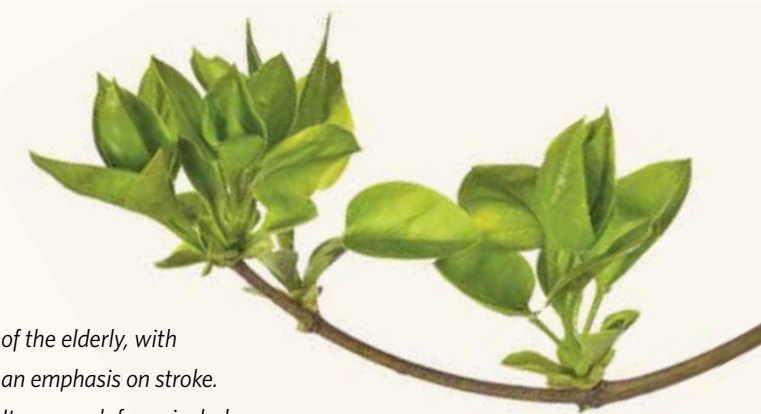
Nebes RD, Snitz BE, Cohen AD, Aizenstein H, Saxton JA, Halligan EM, Mathis CA, Price JC, Kamboh MI, Weissfeld LA, Klunk WE. Cognitive aging in persons with minimal amyloid-beta and white matter hyperintensities. *Neuropsychologia* 2013;51:2202-2209. (PubMed ID: 23911776); (PMCID:PM3807130)

Finding: Within what is considered “normal aging” there can be substantial variation in cognitive performance. This study shows that this variability cannot be explained by amyloid-beta deposition or white matter changes (presumably due to vascular changes) alone or in combination. Among those who maintain normal cognition, the effect of aging on cognition — even in the absence of these pathologies — is far greater than the effect of these pathologies on cognition. However, this study excludes those most vulnerable to amyloid-beta and white matter changes, because their cognition would have been too impaired to qualify for a “normal aging” study.

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.

Gellad WF, Aspinall SL, Handler SM, Stone RA, Castle N, Semla TP, Good CB, Fine MJ, Dysken M, Hanlon JT. Use of antipsychotics among older residents in VA nursing homes. *Med Care* 2012 Nov; 50(11):954-60.

Finding: This study describes the use of antipsychotic medications by VA nursing home residents. Of the 3692 patients studied, 25.7% received antipsychotics. Of those, 59.3% had an evidence-based indication for use. Patients were more likely to receive antipsychotics if they had aggressive behavior, used certain other medications, or resided in dementia special care units. Results suggested that antipsychotics might be inappropriately prescribed, particularly in veterans with dementia without psychosis.

Scheff SW, Price DA, Schmitt FA, Roberts KN, Ikonovic MD, Mufson EJ. Synapse stability in the precuneus early in the progression of Alzheimer's disease. *J Alzheimers Dis* 2013;35:599-609.

Finding: This study examined the number of neuron

connections in a particular ridge of the brain called the precuneus region in patients who died at different stages of Alzheimer's disease. Although plaque buildup was found in the brains of patients in the early stages of AD, changes in connectivity were not yet present. Reduced connectivity in the precuneus region did not correspond to cognitive decline during the progression of the disease.

Buckalew N, Haut MW, Aizenstein H, Rosano C, Dunfee Edelman K, Perera S, Morrow L, Tadic S, Harris T, Venkatraman V, Hicks G, Kritchevsky S, Yaffe K, Weiner DK. White matter hyperintensity burden and disability in older adults: Is chronic pain a contributor? *PM R* 2013; 5: 471-80.

Finding: The purpose of this study was to explore whether chronic lower back pain might contribute to perceived disability and brain white matter changes/lesions called white matter hyperintensities (WMHs) in older adults. Results indicated that WMHs are associated with slower walking in patients with chronic pain, and that these lesions might be accelerated by chronic pain, particularly in patients who perceive themselves as more disabled.

Division of Geriatric Medicine

Director: Neil M. 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.

Exercise: Pahor M, Guralnik JM, Ambrosius WT, Newman AB, and LIFE study investigators. Effect of structured physical activity on prevention of major mobility disability in older adults: the LIFE study randomized clinical trial. *JAMA* 2014; 311:2387-96.

Finding: This landmark clinical trial, conducted at eight centers including Pittsburgh, showed that mobility disability can be prevented in older, high-risk adults through a program of walking, strength, and balance training sustained over 2.6 years.

Sarcopenia: Sarcopenia, the decline in muscle mass and function that occurs with age, contributes to functional decline and dependence. Unfortunately, its causes are largely unknown and the lack of normative data, as well as a consensus on its definition, has hampered research and also precluded FDA approval of any medication to treat it. Dr. Stephanie Studenski led an international effort to pool data from multiple longitudinal studies to develop evidence-based criteria for the condition. Their analyses of data from 26,000 older adults identified criteria that discriminate a population at high risk of functional limitations, both cross-sectionally and longitudinally. Published as a series of five articles. *Journal of Gerontology A: Biol Sci Med Sci* (2014; 69: 547-58, 559-66, 567-75, 576-83, 584-90).

Urge Incontinence Mechanisms in Seniors: Resnick NM et al. What predicts and what mediates response

of urge urinary incontinence to biofeedback? *Neurourology* 2013; 32:408-15.

Finding: Although urge incontinence is common, morbid, and costly, its treatment has improved little for nearly 50 years, owing to the lack of understanding of its causes and perhaps because the focus of investigation has been on the lower urinary tract itself. Using biofeedback as a physiological probe to elucidate the causes of urge incontinence, Dr. Resnick's lab found that therapeutic response failed to correlate with any of the primary physiological domains or parameters at the level of the bladder or urethra. These results point to the brain as the primary etiology of urge incontinence and provide the rationale for their newly funded investigation.

Medicare Part-D and lipid control: Hanlon JT, Boudreau RM, Perera S, Strotmeyer ES, Newman AB, et al. Racial differences in anti-lipemic use and lipid control in high-risk older adults: post-Medicare Part D. *Am Heart J* 2013; 166:792-7.

Finding: To determine the impact of Medicare Part D on racial differences in the management of hypercholesterolemia, the study examined the use of anti-lipemic agents in patients with heart disease or diabetes. They found that use of such agents increased



after Medicare Part D but the racial disparity in either treatment or lipid control did not decrease.

Nace DA, Drinka PJ, Crnich CJ. Clinical uncertainties in the approach to long term care residents with possible urinary tract infection. *J Am Med Dir Assoc* 2014;15:133-9.

Finding: The high prevalence, morbidity, and mortality associated with UTI, especially in the long-term care setting, mandates accurate diagnosis and therapy. Yet strategies to assure this are frustrated by logistical impediments and the atypical presentation of UTI in the long-term care setting. The result is overtreatment, with considerable adverse consequences to patients and society. This review is a key component of the American Medical Directors Association's national effort to improve care, reduce antimicrobial resistance, and enhance antimicrobial stewardship.

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.

Lormand JD, Buncher N, Murphy CT, Kaur P, Lee MY, Burgers P, Wang H, Kunkel TA, Opresko PL. DNA polymerase δ stalls on telomeric lagging strand templates independently from G quadruplex formation. *Nucleic Acids Res* 2013 Dec;41(22):10323-33. doi: 10.1093/nar/gkt813. Epub 2013 Sep 13. PubMed PMID: 24038470; PubMed Central PMCID:PMC3905856.

Finding: Telomeres are specialized structures at the ends of our chromosomes and their shortening is associated with aging. This paper describes how the normal replication machinery stalls during replication of telomeric sequences.

Lan L, Nakajima S, Wei L, Sun L, Hsieh CL, Sobol RW, Bruchez M, Van Houten B, Yasui A, Levine AS. Novel method for site-specific induction of oxidative DNA damage reveals differences in recruitment of repair proteins to heterochromatin and euchromatin. *Nucleic Acids Res* 2014 Feb;42(4):2330-45. doi: 10.1093/nar/gkt1233. Epub 2013 Nov 29. PubMed PMID: 24293652; PubMed Central PMCID:PMC3936713.

Finding: Reactive oxygen species (ROS) and DNA damage have been suggested to play an important role in the aging process. This work represents work of a collaborative team and demonstrates a new approach to produce ROS DNA damage at specific sites within the human genome in living cells. Loss of repair has been suggested to occur with aging and this new approach will allow a test of this hypothesis.

Sanders LH, McCoy J, Hu X, Mastroberardino PG, Dickinson BC, Chang CJ, Chu CT, Van Houten B, Greenamyre JT. Mitochondrial DNA damage: Molecular marker of vulnerable nigral neurons in Parkinson's disease. *Neurobiol Dis*. 2014 Jun 27;70C:214-223. doi: 10.1016/j.nbd.2014.06.014. [Epub ahead of print] PubMed PMID: 24981012.

Finding: Most cases of Parkinson's disease are associated with environmental exposure in a vulnerable population. Chronic exposure to pesticides and other environmental pollutants are believed to cause a loss of substantia nigral neurons with age and subsequent disease progression. In this collaborative study, the authors have found that accumulation of mtDNA damage is a molecule marker of disease progression.

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 health care professionals offers care for patients with life-limiting illnesses, and provides comfort and support to those patients and their families.

Vater LB, Donohue JM, Arnold R, White DB, Chu E, Schenker Y. What are cancer centers advertising to the public?: A content analysis. *Ann Intern Med* 2014 May 27. doi: 10.7326/M14-0500. [Epub ahead of print]

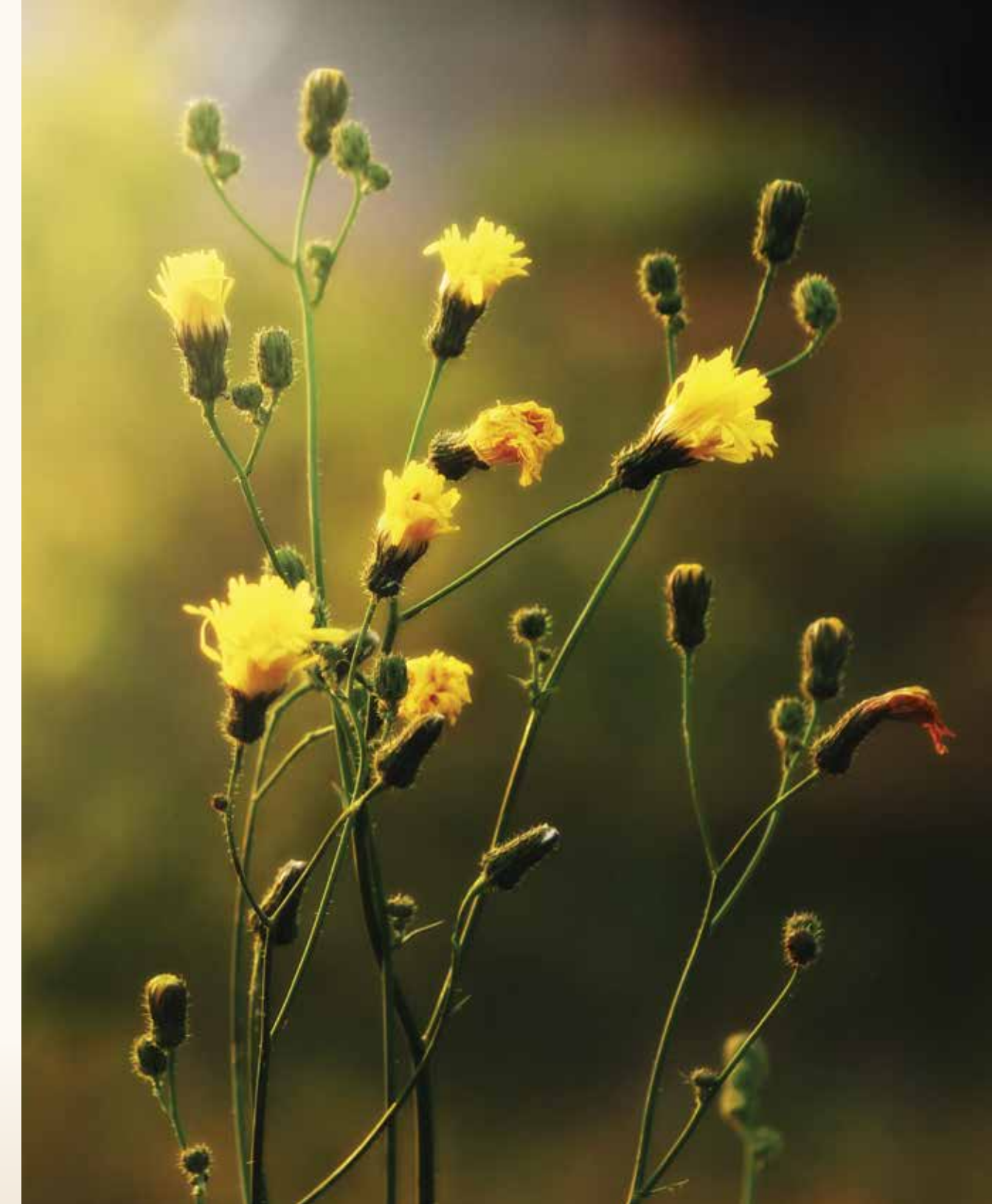
Finding: Although critics have expressed concerns about cancer center advertising, analyses of the content of these advertisements are lacking. We undertook a systematic content analysis of cancer center advertisements for clinical services in top U.S. consumer magazines and TV markets to characterize informational and emotional content.

Schenker Y, Dew MA, Reynolds CF, Arnold RM, Tiver GA, Barnato AE. Development of a post-intensive care unit storytelling intervention for surrogates involved in decisions to limit life-sustaining treatment. *Palliat Support Care* 2014 Feb 13:1-13. [Epub ahead of print]

Finding: Surrogates involved in decisions to limit life-sustaining treatment for a loved one in the intensive care unit (ICU) are at increased risk for adverse psychological outcomes that can last for months to years after the ICU experience. Post-ICU interventions to reduce surrogate distress have not yet been developed. We sought to (1) describe a conceptual framework underlying the beneficial mental health effects of storytelling, and (2) present formative work developing a storytelling intervention to reduce distress for recently bereaved surrogates.

Schenker Y, Crowley-Matoka M, Dohan D, Rabow MW, Smith CB, White DB, Chu E, Tiver GA, Einhorn S, Arnold RM. Oncologist factors that influence referrals to subspecialty palliative care clinics. *J Oncol Pract*

Finding: Recent research and professional guidelines support expanded use of outpatient subspecialty palliative care in oncology, but provider referral practices vary widely. This multi-site qualitative interview study explored oncologist factors that influence referrals to outpatient palliative care.



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 VA's response to meeting the mental health needs of veterans.

Kasckow J, Golshan S, Zisook S. Does age moderate the relationship between depressive symptoms and suicidal ideation in middle-aged and older patients with schizophrenia and subthreshold depression? *Am J Geriatr Psychiatry* 2014 May; 22(5):437-41. doi: 10.1016/j.jagp.2013.01.039. Epub 2013 Feb 6. PMID: 23567374. PMID: PMC3530621

Finding: Two-hundred and thirteen (213) middle aged and older patients with schizophrenia and subsyndromal depression with varying degrees of suicidal ideation were examined to determine whether there were any age-related associations between depressive symptoms and suicidal ideation. Using regression, it was determined that age does not appear to moderate the relationship between depressive symptoms and suicidal behavior. The findings suggest that assessing depressive symptoms as a risk factor for suicide is important at all ages in this population.

Kasckow JW, Karp JF, Whyte E, Butters M, Brown C, Begley A, Bensasi S, Reynolds CF. Subsyndromal depression and anxiety in older adults: Health related,

functional, cognitive, and diagnostic implications. *Journal of Psychiatric Research* 47, 599-603. doi: 10.1016/j.jpsychires.2013.01.017

Finding: Patients 50 and older presenting for a depression prevention intervention with subsyndromal depression and no major depression within the past year were screened for comorbid anxiety disorders. Thirty-four percent (34%) had an anxiety diagnosis, which was a much higher rate than seen in community samples of older adults with subsyndromal depression (i.e., 4%). There were no differences between those with anxiety vs. those without anxiety with regard to quality of life, disability, medical comorbidity, and cognitive status.

Murray PS, Kumar S, Demichele-Sweet MA, Sweet RA. Psychosis in Alzheimer's disease. *Biol Psychiatry* 2014 Apr 1;75(7):542-52. doi: 10.1016/j.biopsych.2013.08.020. Epub 2013 Oct 6. PMID: 24103379 PMID: PMC4036443

Finding: This review paper summarizes the current literature addressing the neurobiology of psychosis in Alzheimer's disease. Neuroimaging studies of AD subjects with psychosis demonstrate greater impairments across neocortical regions of gray matter volume, regional blood flow, and regional glucose metabolism than AD subjects without psychosis. Neuropathologic studies provide consistent evidence of accelerated accumulation of hyperphosphorylated microtubule associated protein tau in AD subjects with psychosis relative to AD subjects without psychosis. Finally,

studies of the familial aggregation of psychosis in AD have established that the risk for these alterations psychosis in AD is, in part, genetically mediated.

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.

Perera S, Studenski S, Newman A, Simonsick E, Harris T, Schwartz A, et al. Are Estimates of Meaningful Decline in Mobility Performance Consistent among Clinically Important Subgroups? (Health Abc Study). *J Gerontol A Biol Sci Med Sci*. 2014. PubMed Central PMID: PMCID In Progress.

Finding: Meaningful change criteria help determine if function has improved or declined, but their magnitudes may vary across clinically relevant subgroups. This study estimated meaningful decline in four common measures of physical performance in subgroups of older adults based on initial performance, demographics, chronic conditions, and health status.

Studenski SA, Peters KW, Alley DE, Cawthon PM, McLean RR, Harris TB, Ferrucci L, Guralnik JM, Fragala MS, Kenny AM, Kiel DP, Kritchevsky SB, Shardell MD, Dam TT, Vassileva MT. The FNIH sarcopenia project: rationale, study description, conference recommendations, and final estimates. *J Gerontol A Biol Sci Med Sci*. 2014 May;69(5):547-58. PubMed Central PMID: PMC3991146.

Finding: Low muscle mass and weakness are common and potentially disabling in older adults, but in order to become recognized as a clinical condition, criteria for diagnosis should be based on clinically relevant thresholds and independently validated. The Foundation for the National Institutes of Health Biomarkers Consortium Sarcopenia Project used an evidence-based approach to develop these criteria. Initial findings were presented at a conference in May 2012, which generated recommendations that guided additional analyses to determine final recommended criteria. Details of the Project and its findings are presented in four accompanying manuscripts.

Albert SM, King J, Boudreau R, Prasad T, Lin CJ, Newman AB. Primary Prevention of Falls: Effectiveness of a Statewide Program. *Am J Public Health*. 2014;104(5):e77-84. PubMed Central PMID: PMCID In Progress.

Finding: This study examined a population-wide program, Pennsylvania's Healthy Steps for Older Adults (HSOA), designed to reduce the incidence of falls among older adults. Older adults completing HSOA are screened

and educated regarding fall risk, and those identified as being at high risk are referred to primary care providers and home safety resources.

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.

Cauley JA, Chalhoub D, Kassem A M, Fuleihan GEH. Geographic and ethnic disparities in osteoporotic fractures. *Nature Reviews Endocrinology*

Finding: This review provides a comprehensive update of the geographic and ethnic disparities in osteoporotic fracture and explores factors that may contribute to the 200+ fold difference in hip fracture rates across the globe.

Sanders JL, Ding V, Arnold AM, Kaplan RC, Cappola AR, Kizer JR, Newman AB (2014). Do changes in circulating biomarkers track with each other and with functional changes in older adults? *The Journals of Gerontology Series A: Biological Sciences and Medical Sciences* 69(2), 174-181.

Finding: Over nine years, increasing IL-6 and decreasing DHEAS, among biomarkers examined, tracked most closely with declines in measured physical and cognitive functioning.

Pahor, M, et al. Effect of structured physical activity on prevention of major mobility disability in older adults: The LIFE study randomized clinical trial. *JAMA* (2014).

Finding: This landmark clinical trial, conducted at eight centers, including Pittsburgh, showed that mobility disability can be prevented in older, high-risk adults by a program of walking, strength, and balance training sustained over 2.6 years.





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The Aging Institute is led by a distinguished and multidisciplinary group of individuals, all committed to furthering the mission and vision of the Institute.

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