



Paul B. Beeson  
Career Development Awards  
In Aging Research Program

2008 Report  
Featuring the 2006 Scholars

# The Paul B. Beeson Career Development Awards in Aging Research Program

Since 1995, the Paul B. Beeson Career Development Awards in Aging Research Program (formerly the Beeson Physician Faculty Scholars Program) has supported 139 Beeson Scholars from 39 of the nation's top medical schools and research institutions. Today, the Beeson Program continues to foster the independent research careers of clinically trained investigators — a growing cadre of talented physician-scientists — whose research and leadership are enhancing the health and quality of life of Americans, particularly older people.

## About Paul B. Beeson, MD



The Paul B. Beeson Career Development Awards in Aging Research program is named after a distinguished leader in medicine who, accomplished in the art of healing and treating disease, exemplified the word “physician.” Awarded the title of professor emeritus of medicine at the University of Washington, Dr. Beeson remained active in the field and participated in several of this program’s annual meetings until his death in 2006.

Throughout his career, he profoundly influenced the career

paths of many young physicians, who today form the core leadership in geriatric medicine. His own career of unstinting service to medicine and unwavering commitment to geriatrics and aging research remains an inspiration to all of us.

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## A Letter from AFAR's Executive Director

A Message from Stephanie Lederman



Stephanie  
Lederman

This report celebrates our 13th year of support for pioneering scientific inquiry and leadership development under the banner of the **Paul B. Beeson Career Development Awards in Aging Research Program**. The 2006 group of Scholars is already creating a stir throughout the national medical community with discoveries and innovations that span the entire spectrum of geriatrics and gerontology, from the laboratory bench to the healthcare delivery system.

In the lab, Scholars are investigating genes that may control aging cells' ability to reproduce, the chemical processes of neurodegeneration, the potential of vitamin D to help stop and even reverse cognitive impairment, and ways in which the immune system might utilize vaccines more effectively to prevent infection. In clinical settings, Beeson Scholars are developing more effective systems for delivering particular medications and performing procedures on older adults. Beyond the clinic, they are discovering new ways in which to help older adults gain access to the care they need— both by testing novel screening methods and helping them navigate through the morass of private insurance, Medicare, and Medicaid.

The Beeson program takes particular pride in the role it continues to play in helping this diverse group of early-career scientists conduct high quality science in the pursuit of breakthrough discoveries. We take satisfaction in their evolution as leaders, just as we have with previous groups who are now assuming top positions in the medical and scientific communities, whose influence now reaches from the halls of academia to the halls of Congress.

We also take pride in our increasingly productive partnership with the National Institute on Aging (NIA), now in its fourth year, and with our private sponsors for their help in discovering and nurturing the very best talent in geriatrics and aging research.

A handwritten signature in black ink that reads "Stephanie Lederman". The signature is fluid and cursive.

Stephanie Lederman

### Developing Leaders in Aging Research Teaching & Practice

"126 Beeson Scholars from 39 of the nations top medical schools and research institutions."

## Broadening Our Scope

With support from the National Institute on Aging, the NIH Office of Dietary Supplements, private foundations, and an anonymous donor, the Beeson Program provides significant financial backing to outstanding junior faculty conducting research in aging-related medicine. Today, the awards are worth between \$600,000 and \$800,000 over three to five years. The benefits of the award for Beeson Scholars are numerous and in many cases career changing. They include:

- Flexible, generous funding with ample resources to pursue an innovative research program.
- Protected time for research.
- An outstanding support system. Senior faculty in each Scholar's institution agree to serve as mentors, and Scholars are also matched with senior leaders in the field, who serve as members of the Beeson Program Advisory Committee.
- Extensive networking opportunities.
- Alumni participation through continued attendance at the annual meetings, where they can assume leadership roles in the program and even become mentors to other Beeson Scholars, offering guidance to the next generation of leaders.

The long-term goal of the program goes beyond supporting the Scholars' careers. It is to develop strong, new leadership throughout the field of aging-related medicine. "We want to take academic stars who are conducting research relevant to aging and firmly ground their careers in geriatrics, so that as they advance through the system and become department chairs, deans, and university presidents, they will remain supportive of geriatrics," says Brian Hofland, director of the Ageing Programme at The Atlantic Philanthropies, one of the program's original private foundation partners. "Ultimately, that's how the field will gain credibility and grow."

"We want to provide an opportunity for talented early-career scientists to work in an area of increasing importance because of our rapidly aging population," says Florence

Davis, executive director of The Starr Foundation, a program partner. "The Beeson Program permits scientists to explore problems that previously have been neglected for lack of funding, but more important, the program may encourage more scientists to pursue careers in geriatrics and gerontology."

Perhaps one of the program's greatest benefits is the opportunity it provides for Scholars to make contributions beyond individual research projects. "When you have a body of top Scholars, they make an immeasurable impact on the institutions in which they are teaching and conducting research," explains Corinne Rieder, executive director of the John A. Hartford Foundation. "Our earlier Scholars are now becoming mentors to younger investigators. They're very bright and passionate about what they're doing, and they're making a difference."

The program's success is evident in the numbers: according to a 2005 survey, 80 percent of Beeson alumni have received competitive grants funding; 66 percent have received promotions; 79 percent have taken on increased responsibilities such as serving on local and national committees and assuming leadership in divisions and centers on aging; and 63 percent are faculty members in a gerontology division or aging research program.

### Beeson Goes "Global"

With funding from The Atlantic Philanthropies, the Beeson program built on its considerable record of success in the United States this year by extending beyond the shores of the United States to the Island of Ireland. This initiative provides funding to outstanding junior physician faculty on the Island of Ireland, who like their colleagues in the United States, are committed to pursuing academic careers in aging-related research, teaching, and practice. "We want to provide an opportunity for talented early-career scientists to work in area of increasing importance both in America and in other countries with rapidly aging populations," says Brian Hofland, director of the Ageing Programme at The Atlantic Philanthropies.

## Letter from Mary Tinetti, MD

Chair of the Program Advisory Committee



Mary Tinetti

Since the program's founding in 1994, the weight of our support has often shifted subtly between laboratory and clinical research. With maturity, however, we believe we have now achieved a balance of both. In contrast to much of the work being done in a generally austere funding environment, our Beeson Scholars continue the kind of bold, innovative science that is so necessary to make progress in gerontology and all its related fields.

In addition to funding research that may dramatically improve health and quality of life for older adults, the Beeson Program identifies and supports future leaders in the aging field. It is important that we bring together early-career investigators from a broad range of disciplines to tackle the spectrum of health problems facing an aging population. This year, we have Scholars addressing cellular senescence, neuroimaging of mobility impairment, functional outcomes after surgery, and end-of-life care for seriously ill latinos—to name just a few.

We look forward to seeing collaborations develop among these Scholars over the coming years. To support their working together, we are continuing to offer the opportu-

nity to exchange ideas at the annual Beeson meetings, and provide financial support through the Hartford/AFAR Collaborative Research Award, which was a one-time opportunity available only to Beeson Scholars. In the future, we hope to see the cross-pollination of ideas among Scholars lead to novel insights, understanding, and breakthroughs.

Now in its fourth year, the partnership between our private and public partners remains a model of cooperation for the scientific research community. The program strongly benefits both from the strength of the NIA alliance, with its rigorous scientific review process, and from the foundations' ongoing support for the Scholars in their work and career development, as well as for convening scholarly meetings and putting new programs together.

As a result of the program, many Beeson Scholars have already begun to move into leadership positions in science and academia, from which they can both encourage and support serious research in gerontology and its related fields. We look forward to the time when they bring the field to the very forefront of the medical research community.

Mary Tinetti

## Program Advisory Committee

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## Collaboration Counts

As the number of older adults in the United States continues to grow, the scale and complexity of today's medical research issues increasingly demands that investigators move beyond the confines of their own discipline and explore new models of interdisciplinary research teams. This is particularly the case for research on aging, where the complexity and broad spectrum of issues involved requires input from various fields. Advances in understanding aging processes at all levels, from disease mechanisms to issues in clinical management to systems of care, require novel multidisciplinary approaches and greater interaction within the numerous disciplines contributing to the field.

The Hartford/AFAR Collaborative Research Awards foster and stimulate interdisciplinary research amongst Beeson Scholars who already have a proven track record in aging research. By supporting research that will cross disciplines and institutions, this initiative builds on the current strength of the Beeson program and provides opportunities to develop new research directions.

As physician-scientists, the Beeson Scholars are uniquely positioned to play a crucial role in the transfer of findings and can transform scientific knowledge and institute changes in medical research necessary to improve the health care and independence of older Americans.

"There are major opportunities and gaps in research on aging that no single investigator could tackle alone," says Corinne Rieder, executive director of the John A. Hartford Foundation. "Research on aging has multiple influences at play from the cellular to societal, requiring novel approaches and greater interactions among disciplines. Our Beeson Scholars are the top scientists in the nation—a brain trust to help tackle the many research

and clinical challenges of geriatric medicine. We are very excited about the prospects for this collaborative research model."

In 2007, five research teams received \$400,000 each to support translational and multidisciplinary research on aging. The teams included:

- Wes Ely, MD, Vanderbilt University School of Medicine, and Helen Hoenig, MD, Duke University Medical Center for *The Cognitive and Physical Rehabilitation of Survivors of Critical Illness: A Randomized Clinical Trial of In-home Rehabilitation*
- Martin Sadowski, MD, New York University School of Medicine, and David Holtzman, MD, Washington University School of Medicine for *Peptide Mimetic Therapeutic Agents for Blocking the Apolipoprotein E/Aβ Interaction*
- Scott Small, MD, Columbia University College of Physicians and Surgeons, and Frank Longo, MD, PhD, Stanford University Medical Center for *Ameliorating Age-related Memory Decline*
- Laura Dugan, MD, University of California, San Diego, and Jeremy Walston, MD, Johns Hopkins University School of Medicine for *Systemic Inflammation and Central Nervous System Dysfunction: A Mechanistic and Translational Pilot*
- Joshua Hare, MD, University of Miami Miller School of Medicine, and Michael Schwarzschild, MD, PhD, Harvard Medical School for *A Unified Hypothesis on the Protective Potential of Urate in Aging Hearts and Brains.*

**Katrin F. Chua MD, PhD**  
Assistant Professor of Medicine  
Stanford University School of Medicine

MENTOR:  
Thomas A. Rando, MD, PhD

## Regulation of Cellular Senescence and Proliferative Capacity by Mammalian SIRT1



Chua

Dr. Katrin Chua can tell you what sparked her interest in genomics back when she was a young adolescent: James Watson's book, *The Double Helix*. "I was on vacation in England, and that book really grabbed me," she says. Later, as an undergraduate and MD/PhD student at Harvard University, she plunged into several research projects that gave her first hand experience in investigating the dynamic mechanisms that influence how our genes function. Since then, her interest has blossomed into a career investigating how certain genes affect cellular senescence—a state wherein cells can no longer reproduce themselves—and ultimately, the processes and pathologies related to human aging.

The story of her Beeson project begins with a gene called SIR2, which helps control lifespan, metabolism, and stress resistance in lower organisms such as yeast. SIR2 does its job by regulating chromatin, a compact DNA and protein structure that constitutes the "package" into which each genome is wrapped. Chromatin plays an important role in nearly everything that happens to DNA, including gene expression, repair of damaged DNA, and programmed gene alterations. As a result, chromatin regulation influences most cellular functions, including cellular aging and death.

Dr. Chua's work centers on a family of seven mammalian genes, called sirtuins (SIRT), which are evolutionary relatives of SIR2. Currently, she is looking at two SIRT family members, SIRT1 and SIRT6, which she believes may share the chromatin-regulating mechanism of their more primitive forebear. In earlier research, she found a role for SIRT1 in regulating the aging of mouse cells, while animals bred to eliminate SIRT6 had remarkably short lifespans and died from conditions associated with aging—osteoporosis, wasting, scoliosis, and insulin regulation problems. Now, Dr. Chua's goal is to learn more about the molecular functions of these two genes by studying their human versions in the laboratory.

Do these genes regulate chromatin and influence cellular lifespan the way SIR2 does in the yeast model? If they do, the implications for medicine are profound. In fact, pharmaceutical researchers are already looking into creating drugs that target the sirtuins. As enzymes that catalyze chemical reactions, these genes can either be activated or inhibited to produce predictable medical effects. Without a deeper understanding of their actions at the molecular level, however, manipulating them in humans could be risky. A drug treatment that simultaneously affects two sirtuins, for example, might result in pharmacologic effects that would not be predictable from the little we know about them individually. "The more information we have about what each SIRT does," says Dr. Chua, "the better the drug design can be to target specific medical applications."

In concomitant research, Dr. Chua and her colleagues are looking at other biochemical processes associated with these two genes, such as their response to DNA damage, which may be important in understanding both aging and the development of cancer. She is also beginning to investigate the other five sirtuins to learn whether they also play a role in these processes. In the future, she hopes to expand her research to include genes outside of the SIRT family as well.

Dr. Chua believes that without the Beeson award, she would not have been able to pursue the kind of science she is doing. "The Beeson award provided a certain comfort level in terms of funds, which is what you need to make new discoveries," says Dr. Chua. "If you have to ask before every experiment, 'Can we afford this,' you tend to do conservative science. If funding is limited, you don't try certain experiments, and that really limits what you can discover. We've been able to do what we want to do with the generous funds we have, and I think our results prove that they're well worth it."

Dr. Chua's mentor, Dr. Thomas Rando, is an aging research expert and 1999 Beeson Scholar. "Tom has been an amazing resource in guiding me through the wilderness of getting my lab and research program started," says Dr. Chua. Dr. Rando helped recruit Dr. Chua to her faculty position at Stanford and is the former director of the Geriatric, Research, Education, and Clinical Center at the VA Palo Alto Health Care System, where Dr. Chua's lab and his lab are part of a dynamic group of researchers focused on diverse aspects of aging research.

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## Margaret C. Fang, MD, MPH

Assistant Professor of Medicine

University of California, San Francisco School of Medicine

## MENTORS:

Kenneth E. Covinsky, MD, MPH

C. Seth Landefeld, MD

Alan S. Go, MD

Daniel E. Singer, MD

## Risks of Warfarin for Elders with Atrial Fibrillation



Fang

Dr. Margaret Fang is a hospitalist, a new breed of clinician who sees patients only in the hospital setting, and she is passionate about it. “The movement is incredibly vibrant and exciting,” she says. “I see many older patients, and managing their medications and medical conditions is especially challenging.”

Because the vast majority of inpatients are older adults, Dr. Fang naturally developed an interest in their needs and problems. “As a hospitalist,” she says, “I see a lot of synergy between geriatrics and hospital medicine.”

One condition that often affects older patients is an irregular heart rhythm called atrial fibrillation (AF), a signature disease of the aging process that can lead to devastating strokes. Taking warfarin, a blood thinner, can lower the stroke risk but it comes with a significant hazard of its own—hemorrhage. The most serious form of this complication is intracranial hemorrhage (bleeding into the brain). Even more common is bleeding into other areas such as the stomach and intestines. Preliminary data suggests that warfarin may also lead to osteoporosis.

The dilemma then is to learn how to determine the risks and benefits of the medication in each individual, particularly among older adults with AF. Dr. Fang is using her Beeson award to develop a practical risk prediction model for patients that takes into account both sides of the equation.

To do this, she is looking at two groups of subjects. The first comprises the Anticoagulation and Risk Factors In Atrial Fibrillation (ATRIA) study cohort, which included more than 13,000 individuals with AF who were enrolled in Kaiser Permanente of Northern California. The study followed the incidence of stroke and complication events among these patients for six years. The second group consists of patients participating in a study at On Lok Senior Health, an integrated healthcare system caring for frail, community-dwelling older adults in San Francisco. It looks at data

about factors prevalent in the frail elderly, including cognitive impairment, high fall-risk, and functional impairment, all of which physicians use to help determine a patient’s risk in using warfarin.

She has made a number of findings. For example, there has been controversy among physicians over whether hemorrhage rates increase with age. Her work shows that they do, and 90 percent of related deaths and disabilities come from the intracranial variety. However, not all of the news is negative. Controversy has also centered around the question of whether advancing age makes warfarin control more difficult. It does not, Dr. Fang discovered. Proper blood levels are seen as often in patients who are over 80 as in those who are younger.

The Beeson award has also allowed Dr. Fang to mentor students and to develop applications for additional funding. And it offers her the opportunity to meet leading investigators in geriatrics and to take advantage of their mentorship at Beeson meetings. “These leaders are completely approachable and interested in what you’re doing,” she says.

Perhaps best of all, the Beeson program has connected her with other Scholars. At the last Beeson meeting, she met 2007 Beeson scholar Dr. Sasha Dublin, and realized they had complementary interests. They hope to work together on a study design that will look at how warfarin use affects functional status and cognition.

Because hospital medicine is still a relatively young field, Dr. Fang’s mentors come from the fields of geriatrics and general medicine and from a variety of institutions. One thing that her mentors all share is an appreciation for the importance of collaborative relationships between hospital medicine and geriatrics. Dr. Alan S. Go and Daniel E. Singer continue to enhance Dr. Fang’s understanding of cardiovascular epidemiology and outcomes measurement. Dr. C. Seth Landefeld and Dr. Kenneth E. Covinsky have provided a broader perspective on how her work fits into the field of geriatrics. As hospital medicine becomes increasingly accepted as a specialty, such efforts in improving the outcomes of care provided in hospitals become ever more important.

## Alex D. Federman, MD, MPH

Assistant Professor of Medicine  
Mount Sinai School of Medicine

## MENTORS:

Albert Siu, MD, MSPH  
Ethan A. Halm, MD, MPH  
Dana Gelb Safran, ScD

## Health Insurance Navigators for the Low-Income Elderly



Federman

Medical assistance programs, from fee-for-service private insurance to Medicare and Medicaid, can make the difference between health and disability—or even life and death—for many low-income older adults. Without financial assistance, these patients simply cannot afford to see a physician when they are ill or take the medications that they need. Despite continuing efforts

across all public sectors to improve these programs, they remain underutilized, particularly by those who need them most. “There have been positive changes, and they are intended to benefit people,” Dr. Alex Federman says. “So why aren’t they benefiting?”

The answer, he believes, may lie in poor decision-making. The healthcare insurance system has grown more complex with new programs like Medicare Part D, which offers an extraordinarily broad array of options for prescription drug benefits. So many choices can bewilder older patients who may have impaired decision-making capacity due to language and cultural barriers, low educational or literacy level, or even undiagnosed mild cognitive impairment (MCI). Dr. Federman hopes that his Beeson research will lead to a deeper understanding of this problem and ultimately to interventions that can help solve it.

“We’ve been observing in our research that people have not been making optimal choices,” he says. “Their health and drug plans are not covering their medications, not allowing them to see the same physicians they’ve been seeing for years or not even covering visits to a physician at their local healthcare center.”

Dr. Federman’s study focuses on health literacy and mild cognitive impairments that may go undiagnosed, yet may affect decision-making. The specific purpose of his research is to develop strategies for screening older adults and identifying the most vulnerable among them. He also hopes to discover ways to assist them in the decision-making process by helping them understand the concepts, particulars, and implications for both their healthcare and their finances of

the assistance options available. His data will come from focus groups and interviews with 400 low- and middle-income older adults in New York City.

Dr. Federman’s Beeson project follows pilot research in which he helped develop an early healthcare services intervention called the Health Insurance Navigators Program. The program places volunteers, mostly retirees who have had some training in health insurance or Medicare counseling, in clinic waiting areas, where they screen people for health insurance problems, including excessive cost. “The volunteers are proactive about getting financial information because often patients who have trouble with medical expenses won’t bring it to the attention of their physician,” Dr. Federman explains. The program has the advantage of costing little or nothing, which he hopes will make it more attractive to other clinics and more sustainable on its own.

Dr. Federman discovered his interest in older adults as a primary care doctor at Mount Sinai hospital in Manhattan. The Beeson award has allowed him to further his studies at Columbia University’s Teachers College, where he has taken courses that have given him a new insight on health insurance decision-making and the mechanics of decision-making, as well as cognition and aging. This has added new dimensions to how he views his study and its results.

The program has also made it possible for him to conduct a more interesting and broadly applicable study than he could have with other grants available to early-career researchers, by enabling him to employ five people to assist his interviewing and data collection. The broad cross-section of study participants will make Dr. Federman’s research findings far more generalizable than they would have been had he relied on a smaller research staff.

Among his long-range goals, Dr. Federman wants to further his research, as well as play a policy role in the healthcare issues that interest him. “I hope the research grows in such a way that I have enough authority for people to listen. Simply put,” he says, “I’d like to help improve healthcare for older adults.”

## Emily V. A. Finlayson, MD, MS

Assistant Professor of Surgery  
University of Michigan Medical School

## MENTORS:

John D. Birkmeyer, MD  
Brant Freis, PhD

# Functional Outcomes After Major Surgery in Nursing Home Residents



Finlayson

Surgeons once considered advanced age a significant risk factor for death or disability after an operation. Today, their attitudes are changing. Studies from some of the country's foremost cancer centers such as Memorial Sloan-Kettering Cancer Center and Johns Hopkins Kimmel Cancer Center report 30-day post-operative mortality rates of only two to three percent among patients aged 80 and over, even after major operations such as pancreas resection and esophagectomy. As a result, more and more older adults are going under the scalpel every year for everything from cardiac bypass to hip replacement. It seems like good news for older adults.

A closer examination of the numbers, however, paints a more complicated picture. When Dr. Emily Finlayson looked at large population-based databases such as the Centers for Medicare & Medicaid Services discharge abstracts, she discovered 30-day mortality rates that ranged from 15 to 20 percent. And although information existed on immediate post-operative complications, follow-up studies of long-term consequences were almost non-existent. "If people have complications immediately after surgery, doctors can deal with them medically," she says. "But how do these patients do over the longer term? Do they ever get back to their baseline of everyday functioning? Are they still autonomous? Do they do their activities of daily living independently?"

These are among the questions Dr. Finlayson hopes to answer through her Beeson research project. The general thrust of her study is to look at operative risk and functional and cognitive outcomes in the frail elderly after major surgery. To do that, she is examining data primarily from the Minimum Data Set for Nursing Homes, which is updated quarterly and can render a picture of what happens to patients over time. First, she will look at post-surgical, in-hospital complications such as interventions in the intensive care unit. Then she will look at patients' functional status and cognitive ability before and after surgery, and then over the long term.

The data should reveal how surgery affects functional status and cognitive ability, and conversely, how these patient characteristics affect surgical outcomes. "We're good at measuring things like pulmonary function and cardiac function in predicting your mortality with surgery," Dr. Finlayson says, "but we're not very good at determining whether frailty or cognitive impairment has an impact on whether you survive surgery."

The study's results will have broad implications in decision-making around surgery for older patients. For example, an 85 year-old patient with advanced Alzheimer's disease might not be a good candidate for removal of a colorectal tumor if the risk for significant neurological damage from anesthesia is too high. Likewise, giving critical information about cognitive and functional risks to a patient's family and caregivers is important. They need to know that the patient might not be able to live alone anymore or might be a little more forgetful after an operation, or even that he or she might need to move to a nursing home.

Dr. Finlayson still performs surgery one day a week, but now spends 75 percent of her time conducting research. The combination has proven gratifying. "The nice thing is that you can take the long view with research, but you still have something once a week that has a beginning, middle, and end in one day," she explains. "It's very satisfying. There's a cancer in there, you take it out, and you are done."

Protected time and adequate funding for studies are rare luxuries among surgeons, but the Beeson award has allowed Dr. Finlayson both. It has also given her access to some of the nation's foremost experts in specialties outside of her own and has helped broaden her perspective on gerontological research in general. She has become particularly aware of some of the work on medical decision-making by some of her Beeson colleagues. "I'm hoping that their work will dovetail with mine," she says. "We hope that people will be able to incorporate our information into their own medical decision-making. That's the whole goal."

## Stacy M. Fischer, MD

Assistant Professor of Health Care Policy and Research  
University of Colorado Denver School of Medicine

## MENTORS:

Jean S. Kutner, MD, MPH  
Andrew Kramer, MD  
Angela Sauaia, MD, PhD

## Improving Care at the End of Life for Seriously Ill Latinos: A Cultural Navigator Intervention



Fischer

To Dr. Stacy Fischer, medical science represents more than an interesting and rewarding career. It is her path to fulfilling a passionate dedication to give help to those who need it most—and receive it least. She has carried that commitment for a long time. Even as an undergraduate, she volunteered at an inner city free health clinic and for a nonprofit organization winterizing

inner city homes. “The volunteer work fostered my sense of responsibility to the community,” she says. “My experiences enhanced my education and formed the foundation for my commitment to work with underserved populations.”

At the time, she was not quite sure how she would ultimately meet that commitment, but during her fourth year of medical school, she experienced an event that added another piece to the puzzle—her mother’s death from metastatic breast cancer. Although her mother received hospice care and died at home with her family at her side, there had been fragmentation among her doctors earlier in her treatment. Dr. Fischer’s dissatisfaction with what she saw led her to question existing models of care for seriously ill people.

Another piece fell into place during her chief residency at the University of Colorado. “Throughout my internal medicine training at the university, the most valued experiences I had were with people at the end of life, providing support and compassion for those who could not be cured,” she says. “Yet it was not until my chief residency year, when asked to give a medical grand rounds presentation that I began to visualize a career path that could integrate my diverse passions.” The presentation, titled “Marginalization of the Dying,” led to a research project focusing on end-of-life-care education for resident physicians.

All of the pieces finally came together after she spent the following year applying her medical skills to needful populations in Latin America. She decided to devote her career to finding ways of giving better care to incurably ill older adults in culturally disparate communities.

Dr. Fischer’s Beeson project arose directly from this career direction. Previously, she had completed an inquiry into the effects of ethnicity on end-of-life care, funded by the Brookdale Foundation National Fellowship Program. To compare patients from Denver’s latino and white communities, she examined the preferences each group expressed for various aspects of their final care, such as where they hoped to be when they died, and whether their wishes were met. Results showed that ethnic disparities did exist; however, they did not arise from cultural differences. Whites and latinos wanted similar treatment, but the latinos were not getting it—possibly because they were not as well educated about how to get it.

To help improve the situation, Dr. Fischer developed a patient navigation intervention, based on a model used for cancer screening, to help individuals secure available medical and community resources. For her Beeson project, she is modifying the navigator model to test its feasibility among a population of seriously ill latino patients as they become hospitalized. The navigator needs to be bilingual, as well as culturally proficient enough to prove useful to latino patients and their families.

If the intervention proves feasible, Dr. Fischer’s next step will be to apply for an R01 grant to fund a randomized controlled trial of the intervention’s effects on advanced care planning, pain management, and hospice education and referrals

The Beeson award arrived at an opportune moment in Dr. Fischer’s career—just as she was about to leave academic medicine for clinical work. Failing to secure funding from several grant programs had left her frustrated at the idea of a future in medical research. “By the time the Beeson award came through,” says her mentor and 2000 Beeson Scholar Dr. Jean Kutner, “she had just completed the necessary paperwork to terminate her position here at the University of Colorado’s Health Sciences Center in Denver. Now, she’s on a clear trajectory of success. It’s made all the difference.”

**Alfred L. Fisher, MD, PhD**  
Assistant Professor of Medicine  
University of Pittsburgh School of Medicine

MENTORS:  
J. Timothy Greenamyre, MD, PhD  
Gordon J. Lithgow, PhD

## Dopamine, Tyrosine, and their Metabolites in Aging in Neurodegenerative Disease



Fisher

Dr. Alfred Fisher has always been interested in the science of aging, even as an undergraduate student, but it was a frustrating interest for him. Sophisticated investigative tools in the field did not yet exist. By the time he received his MD and PhD degrees in the late 1990s, however, all of that had changed.

Microarrays, genetically manipulated lab animals, and known age-related gene mutations opened up huge new doors of discovery to the aging process. Still, he does not believe we will reach the doorstep of dramatically extended lifespans any time soon.

“Some people have the view that magical treatments are going to come out of research that will dramatically delay aging and extend lifespan,” he says, “but that may not be the case. Overall, you have many things happening, such as the depletion of stem cells, cellular damage, accumulation of mis-folded proteins. Trying to address all of these at once may be difficult. To pick out one or two critical mechanisms that might affect organs such as the brain or heart might be much more doable. Even these small steps might have a big impact on the health and functioning of older people.”

In his own research, Dr. Fisher is studying the roundworm *C. elegans* for aging effects caused by metabolites from tyrosine breakdown. We consume large amounts of tyrosine, an essential amino acid, every day. The body uses it for protein synthesis or metabolizes it into energy. Roundworms are particularly apt subjects for study because some carry single gene mutations that specifically alter aging and lifespan.

Several years ago, Dr. Fisher had been using these animals to investigate signaling pathways— cellular biochemical reaction sequences that convert one chemical stimulus into another— and discovered that two pathways related to longevity ran through DAF-12, a protein that regulates cellular receptor sites by turning various genes on or off. By using two mutations of DAF-12, he was able to both extend and shorten the life of the worms. Combined, the mutants expressed (toggled on/off) a total of 225 genes, but one

called *hpd-1* was of particular interest for two reasons: First, the life extension mutation expressed far less of this gene, and second, *hpd-1* was critically involved with breaking down tyrosine in the system. Did that mean that tyrosine breakdown and life extension were connected through *hpd-1*?

The byproducts of tyrosine degradation— its metabolites— can accumulate in cells and become toxic. This process occurs in a rare, lethal childhood disease called type-1 tyrosinemia, which previous research has already connected to mutations in the same pathway as *hpd-1*. Victims usually die by age 10 due to severe kidney and liver damage produced by these metabolites. Perhaps normal levels of these chemicals contribute to aging since turning off *hpd-1* would be predicted to dramatically lower these levels.

Tyrosine is also the precursor for the neurotransmitter dopamine, which is critically important in Parkinson’s disease. In this neurodegenerative disease, some of the cells in the brain that produce dopamine die, which leads to problems with movement and tremors. Some believe that dopamine, like the tyrosine metabolites, is directly harmful to these cells and is both a cause and effect of the disease.

Dr. Fisher hopes ultimately to learn how we handle these kinds of toxic chemicals our bodies produce and how they affect aging and neurodegenerative disease. That might eventually lead to treatments designed to enhance the detoxification of these compounds and perhaps lessen the incidence of age-related disease.

“The Beeson has been very, very helpful,” he says. “Funding levels are much higher than for the average career development award. It’s allowed me to hire a technician for my lab, which greatly increased productivity.”

Dr. Fisher has also been able to gain mentoring from aging research experts, Dr. J. Timothy Greenamyre and Dr. Gordon J. Lithgow. Dr. Greenamyre is a leading researcher in Parkinson’s disease, whereas Dr. Lithgow specializes in *C. elegans* aging research. With the leadership of his mentors and the support of the Beeson award, Dr. Fisher has been able to forge links between what seem like two disparate areas of research.

**Sean X. Leng, MD, PhD**  
Assistant Professor of Medicine  
Johns Hopkins University School of Medicine

MENTORS:  
Linda P. Fried, MD, MPH  
Noel R. Rose, MD, PhD

## Vaccine-Induced Immunity against Influenza in Frailty



Leng

In 1989, Dr. Sean Leng fled from a China roiling in political turmoil. In reaction to the Tiananmen Square protests, the government initiated a crackdown that affected everyone from students and intellectuals to top members of the Communist Party. Dr. Leng made his way to the United States and subsequently obtained a PhD at Texas A&M University Health Sciences

Center. But times change. Today, he makes visits to the People's Republic, welcomed as an expert in geriatric medicine—an expertise that was lacking in China until Dr. Leng spearheaded an international collaborative project focusing on training and research in geriatric medicine.

Given how deeply Dr. Leng appreciates the importance of geriatric medicine, it should come as no surprise that he secured a Beeson award for research that may one day make a profound impact on the health of older adults.

As we move into old age, some of us become frail, while others do not. Dr. Leng believes that frail older adults' immune systems can give us important information we can use to improve immune function generally among older individuals. "Infectious disease is important in the older population," he says. "For example, older adults have increased risk for flu-related morbidity and mortality. So we're using in vivo immune stimulation—the flu vaccine—to see how frail older adults respond."

We already know that the vaccine does not work as well in older adults as it does in younger people, but we're not sure why. In addition to the impairment in immune protec-

tion against infections, some research has shown that older adults have a low-grade, chronic inflammatory phenotype, a type of immune dysregulation, which can affect other systems in the body such as the hematopoietic, endocrine, and musculoskeletal systems. Dr. Leng believes that frail older adults have significant immune impairment beyond the expected age-related remodeling in the immune system.

If he's right, frail older adults should have changes for the worse in various components of the immune system, such as cytokines (inflammatory messenger proteins) and T lymphocytes (a type of immune cells), compared with the non-frail/robust older adults. He also expects to find even higher rates of infection during the post-vaccination period in the frail.

The Beeson award has proven critical to Dr. Leng's career. The grant's five year span has given him the support he needs to follow through in his research project, and also the time to develop ideas and preliminary data for further research in the field, which he'll use to apply for an R01, a research grant given by the National Institute on Health to health-related projects in the biomedical sciences.

While he continues to travel to and work with healthcare systems in China, he has no plans to return. "My research career is in this country now," he explains. "I can probably make a greater contribution from here than by actually moving back to China."

Dr. Linda Fried has had tremendous influence on Dr. Leng as his primary mentor. In addition to her leadership in the field of frailty, Dr. Fried has also helped Dr. Leng in his overall career development.

**Ann M. O'Hare, MD, MA**  
Assistant Professor of Medicine  
University of Washington School of Medicine

MENTORS:  
Eric B. Larson, MD  
C. Seth Landefeld, MD  
Kenneth E. Covinsky, MD, MPH  
William R. Hazzard, MD

## Targeting Nephrology Referral Among Elderly Patients with Chronic Kidney Disease



O'Hare

Dr. Ann O'Hare's career might be better described as a long and winding road than a simple path. She began as a geographer out of Cambridge University in Great Britain and ended up a physician at the University of Washington in the United States. Her first specialty was South Asian geography, her most recent, nephrology. Initially, her goal was to become a

schoolteacher. Now, as a Beeson scholar, she hopes to develop ways to better manage older patients with chronic kidney disease (CKD).

CKD is age-related and common among older adults. This condition rarely occurs in the absence of other chronic conditions (e.g. diabetes, hypertension) and in the elderly may function more as a marker for such age-related conditions than as an isolated disease process in and of itself. In her clinical work, up to half of Dr. O'Hare's patients with CKD are 75 and older. In caring for these patients, she often found herself wondering whether guideline-recommended approaches to CKD were always appropriate. Most randomized trials supporting widely accepted clinical interventions in patients with CKD did not enroll older patients. Furthermore, her work to date has demonstrated that the relationship between level of kidney function and frequency of clinically important outcomes differs substantially by age.

Although most CKD occurs in older adults, older patients with CKD are least likely to experience meaningful progression of renal disease. Many survive for long periods of time with stable CKD and go on to die from other causes long before they reach the point of needing dialysis. Paradoxically, while the majority of patients who progress to the point of needing dialysis are older, progression of CKD is least likely to occur in older patients with this condition. The key challenge to the clinician thus becomes that of identifying the subset of older patients with CKD who are most likely to benefit from aggressive efforts to slow progression of renal disease, and from interventions to prepare for dialysis and kidney transplant if these efforts fail.

Unfortunately, no method exists to determine which patients with chronic kidney disease will progress to the point of requiring dialysis. Using a variety of complementary approaches, Dr. O'Hare hopes to discover which patients are most at risk. First, she is conducting a study using a very large patient data set from the Veterans Administration to look at predictors in patients of all ages who have gone on to start dialysis. She postulates that many of the traditional predictors such as diabetes and hypertension will not be very helpful in determining which older individuals are likely to progress to dialysis. "It's hard to know from looking at a list of comorbidities how well an older individual truly is and how likely he or she is to survive long enough to need dialysis," she explains. In a second study, she is examining the immediate pre-dialysis period among a cohort of dialysis patients from the Group Health Cooperative, a large HMO in Seattle, to identify factors that may trigger the need for treatment in order to provide a clearer understanding of how older individuals arrive at the need for dialysis.

Dr. O'Hare describes the Beeson program as "fabulous." It has provided her not only with funding, but also with the freedom and protected time she needs to do her research. It has given her great opportunities for networking with senior researchers and possibilities for collaboration with fellow Scholars. "I can see where there may be potential overlap with [1998 Beeson Scholar] Terry Fried's work in communicating prognosis to terminally ill patients," Dr. O'Hare says. "Also, I think my work would pair well with [2000 Beeson scholar] Jean Kutner's research in end-of-life care."

"It is so neat to be in a group with people from so many different content areas, yet all with an interest in aging," she says.

Chronic kidney disease is in some ways a quintessential age-related chronic disease with many parallels to other conditions that affect the elderly. "The greatest contribution of my mentors has been to help and encourage me to 'think' like a geriatrician," Dr. O'Hare says. "This 'mindset' has opened up many intellectual possibilities as I think about kidney disease in the elderly and similarities and differences with other age-related conditions."

## Caterina Rosano, MD, MPH

Assistant Professor of Epidemiology

University of Pittsburgh Graduate School of Public Health

## MENTOR:

Anne B. Newman, MD, MPH

Stephanie A. Studenski, MD, MPH

Howard J. Aizenstein, MD, PhD

## Novel Brain Neuroimaging Markers of Age-Related Mobility Impairment



Rosano

If you are walking quickly and someone asks you an intellectually challenging question, you will immediately slow down. That is because walking is complicated and requires focus. Not only do the heart, lungs, muscles, and nerves have to coordinate, but the brain also has to contribute a large proportion of its resources. If any of these organs deteriorates through injury or disease, gait can deteriorate as well.

It often happens to older adults: their muscles grow weak, their bones become brittle, or their heart does not pump so well anymore. Intriguingly, gait impairment does not happen to everyone in the same way, and Dr. Caterina Rosano wants to know why. She believes the answer lies in the brain.

"As you grow older, you lose a little brain tissue every day," she says. "You lose a little bit of what you know. So how do you compensate— or fail to? Why do some people age so beautifully while others don't?"

The riddle's solution may yield specific strategies to help prevent age-related mobility impairment. Volume changes in the brain's white and gray matter— especially in areas related to movement— offer clues, as they correlate with changes in gait. To investigate, Dr. Rosano is going after this in two different ways.

In the first, she is looking at pairs of brain magnetic resonance imagings (MRIs) from the Cardiovascular Health Study done five years apart, to see where volume abnormalities are present, how they change over time, and whether they change more quickly in vulnerable areas. She is also investigating how various factors such as cardiovascular risk and inflammation can affect white and gray matter.

In the second, she is using state-of-the-art diffusion tensor imaging and magnetization transfer, which can detect structural problems even before volume abnormalities appear, to

measure the integrity of neuron connections. This, she hopes, will develop into a technique for identifying mobility impairment risk even before obvious symptoms occur.

Dr. Rosano's current work is an extension of a career-long interest. "I always wanted to see how the brain learns and remembers," she says. "I thought the best way to do that was to measure how it learns and remembers movements." She started by looking at individuals who had lost motion in one hand after a stroke but after awhile relearned the skill of movement. "We have seen cases where the brain just rewires itself," she says. "It's amazing."

That specific interest brought her from her native Italy to the United States. "It wasn't the weather or the food," she teases. In fact, it was a post-doctoral fellowship at Jackson Memorial Hospital in Miami, where she studied cell regeneration in the adult central nervous system. The Beeson award has helped her move from that early work to the investigations she is doing now. Not only has it given her funding to purchase MRIs, but it also proved a great asset in obtaining an R01 research grant as well.

The Beeson award has also provided the opportunity to collaborate with other scholars on new projects. She and 2005 Scholar Jennifer Brach coauthored a paper published in the January 2004 issue of *Neuroepidemiology* called "Brain Anatomical Correlates of Gait Instability in Community-Dwelling Older Adults." She is also doing a study with 2006 Scholar Joe Verghese on the characteristics of mobility.

Dr. Rosano hopes her work will help develop new tools for preventing mobility impairment, but she feels you can do something about it now. "We're all worried about how changes in the brain will affect memory and cognition," she says, "but we need to get the message out that a good brain is important to how independent you are and how well you perform your activities of daily living. Exercise is a good place to start. Most people think that if you do exercise, it improves your whole body, including your brain. I think that in order to move your body you need to use your brain. And that's what keeps it healthy."

## Manish N. Shah, MD, MPH

Associate Professor of Emergency Medicine  
University of Rochester School of Medicine and Dentistry

### MENTORS:

Thomas A. Pearson, MD, PhD, MPH  
Paul R. Katz, MD  
Yeates Conwell, MD  
Sandra M. Schneider, MD

## Screening and Interventions in an Acute Care Setting



Shah

Receiving a Beeson award often signals a quantum leap for both the career and the prestige of a medical researcher. Dr. Manish Shah enthusiastically put it this way: "I got the Beeson award, and suddenly I was brilliant. I could do nothing wrong! My idea had been validated and received more attraction, not just in my own institution but in my general field." That proved beneficial for Dr.

Shah, and it may one day benefit many older adults as well.

His idea is to use emergency medical services (EMS) and hospital emergency department (ED) settings to screen older adults for unrecognized or unmet health needs and develop effective interventions to meet those needs. Many people who would otherwise suffer in silence could now receive appropriate medical care and social support.

With funding from the Beeson program, Dr. Shah is specifically examining the validity of criteria used to identify patients with depression, cognitive impairment, or medication management issues. The patients under study are generally the sickest and most in need—those who call 911 and end up in an ambulance. Emergency medical technicians (EMTs) and paramedics do the screening and generally finish their evaluation before the patient arrives at the hospital.

The project has already brought about an EMS culture shift in Rochester, New York, where the study is taking place. The system, which once focused solely on delivering acute care, has become more oriented toward general public health, and for emergency medical personnel, screening older patients has become a matter of routine care. As a result, Dr. Shah is amassing data that he can present to focus groups, comprising healthcare and community service professionals, for developing interventions. He considers this part of the process crucial. "We need to figure out how to do these things without burdening the ED physicians or providing the primary care doctors with problems but not solutions," he says.

If the process yields positive results for the conditions he is currently studying, he hopes eventually to broaden it to include a wider range of geriatric disorders. Ultimately, he hopes to link community social services with physician services so that older adults can take advantage of a full range of support. For example, a lonely, depressed patient might receive treatment from a doctor, who would then also refer her to local adult day-care centers where she could develop social connections to further address her depression.

In other work, Dr. Shah is looking at ways to improve patient care and safety for older adults in the ED and pre-hospital emergency settings. In one study, he is evaluating the feasibility and effectiveness of bringing pharmacists into the ED as consultants on drug use and management. Inappropriate medication use and overdose are among the most common causes of adverse events in older patients entering the EMS. In these cases, having a pharmacist on hand could prove invaluable to providing safer dosing, as well as faster administration.

Although his training is in emergency medicine rather than geriatrics, Dr. Shah says that older adults compose by far the largest population of adults to visit the ED, and he feels his interest in improving their medical care meets a real clinical need. "I see people all the time who are having a reaction to medicine prescribed or have hip fractures that could have been prevented with an intervention," he says.

He is grateful to the Beeson program for providing funds, raising his professional status, and validating the value of his work. He is also grateful for its giving him the opportunity to learn from and collaborate with some of the most accomplished minds in gerontology and its related fields. He is talking with 2005 Beeson Scholar Malaz Boustani about establishing a second site at the University of Rochester for Dr. Boustani's research into improving hospital care delivery systems. He also credits 1996 Beeson Scholar Chris Callahan and others with sparking many new ideas for his research. "I have the ideas," he says. "Now I have to build on them and make them happen."

## Consuelo H. Wilkins, MD

Assistant Professor of Medicine and Psychiatry  
Washington University School of Medicine

## MENTORS:

John C. Morris, MD  
Yvette I. Sheline, MD

# Vitamin D in Older Adults: Cognition, Mood, and Hippocampal Volume



Could depression, cognitive impairment (CI), and a shrinking hippocampus—a structure in the brain that helps regulate mood and memory—all be related to a simple vitamin D deficiency? Dr. Consuelo Wilkins believes it is very possible.

### Wilkins

Although we often associate vitamin D with bone health, it is also a powerful nerve growth stimulator. In fact, researchers have seen it reverse brain injuries in animals, and it is known to help protect brain health in humans as well. The question is, if having sufficient vitamin D is good for the brain, could having too little be harmful? As more than half of all older adults are vitamin D deficient, the answer may prove important.

For her Beeson project, Dr. Wilkins is looking at two cohorts of older adults who have no symptoms of CI—one group with normal vitamin D levels and a second with abnormal levels. She will follow them for two years, regularly observing their mood, cognitive function, and hippocampus volume for changes. If her hypothesis proves correct, the second group will show worse performance in all three measures.

“This is pretty exciting,” she says. “We’re looking at the possibility of detecting cognitive impairment in people before they start to show symptoms.”

What is perhaps even more intriguing is that a relatively simple treatment, vitamin D therapy, may significantly relieve the symptoms of CI and mood disorders—and thereby significantly improve quality of life—among older adults. She hopes to test this hypothesis as well in a future research project.

Dr. Wilkins’ interest in these questions arises as much from her lifelong passion for giving care to older adults as from scientific curiosity. Even in her youth, growing up in a small Mississippi town, she often found herself helping her grandparents manage their medications and get to their doctor’s

appointments. When the time came to consider a career, geriatric medicine seemed an obvious choice. “I saw myself in one of those medical offices that just took care of all the old people in town,” she says. Then her career path took an unexpected turn. “When I was a resident at Duke, I met a wonderful group of geriatricians who were involved in research, and I thought, wow, this is even a better way to affect a larger group of people.”

As with many other medical researchers, however, Dr. Wilkins has not found it easy to carry on in the current funding climate. If it were not for the Beeson award, she feels she would have been forced to switch her career path again in favor of clinical work. The program has helped her in other ways as well. She finds her relationship with her mentors invaluable, especially at the meetings, which provide a rare opportunity to sit and talk at length about career issues. She is working with 1996 Beeson Scholar Chris Callahan on a collaborative care approach to diagnosing and intervening in a group of depressed older adults.

Dr. Wilkins has also made a strong commitment to another issue she cares about deeply: offering her time and guidance to African-American medical students and residents. “There are so few African-Americans in academic medicine,” she says. “Many come from disadvantaged backgrounds, and they incur huge debts in medical schools. There’s a little more pressure on them to work in high paying jobs as a result. That makes it hard for them to go into academic medicine, which doesn’t pay as much.”

Going into research also demands more time and study in preparation. And then there is a lack of mentoring. “At Washington University, we have only one black full professor of medicine on the faculty,” she explains. “African-American students sometimes react by saying, ‘Great! They need more of us.’ But many react by thinking, ‘There’s probably a reason there aren’t many of us here, so maybe I shouldn’t do this.’ Not having people look like you in those positions can be a deterrent.”

Fortunately, they have Dr. Wilkins to look up to.

## Beeson Scholars: News from the Bench

### Gene Mutation Linked to Longer Life

A study conducted by Nir Barzilai, MD, and colleagues at the Albert Einstein College of Medicine found evidence of a gene linked to longevity that is mostly found in short women. The study, published in the March 4, 2008, issue of the *Proceedings of the National Academy of Sciences*, found a gene mutation that decreases the activity of an insulin-like growth factor (IGF-1), which is linked to shorter stature but longer life. Dr. Barzilai's research may aid in the development of drugs that can decrease growth factor hormone that could slow aging. Dr. Barzilai is a recipient of two AFAR-supported grants: a 1994 AFAR Research Grant and a 1997 Beeson Award. His study findings were profiled in *Newsweek*, *U.S. News & World Report*, *Telegraph* (UK), and NBC Nightly News.

### Living Well, Despite Disease

2005 Beeson Scholar Dellara Terry, MD, MPH, and colleagues from the Boston Medical Center's New England Centenarian Study reported that for a substantial proportion of their centenarian subjects, avoiding age-related diseases was not necessarily key to their longevity but it was the avoidance of disability associated with diseases. In a study published in the February 11, 2008, issue of *Archives of Internal Medicine*, the researchers found that one third of 739 centenarians had been living with age-related diseases for 15 or more years, yet were able to delay the effects of their disabilities. The study has ramifications for researchers as a better understanding of the underlying mechanisms for delaying disability in the elderly could allow for better interventional therapies. Dr. Terry's research received widespread media attention, including *Forbes* and *The New York Times*. She was also cited in the August, 2007, issue of *Real Simple* magazine, offering tips on living healthier longer.

### The Power of Negative Thinking

2000 Beeson Scholar Catherine Sarkisian, MD, of the University of California at Los Angeles, was cited in *Reuters Health* December 5, 2007, in an article about older adults who had experienced lower expectations about aging. Those who expected to experience more health-related decline as they grew older were more likely to report spending less time engaging in physical activity than those with expectations of health and longevity. These observations were from her study of 636 adults aged 65 and older.

Her research was originally published in the October, 2005, issue of the *Journal of General Internal Medicine*.

### Centenarian Lifestyle Choices

Thomas Perls, MD, MPH, 1998 Beeson Scholar from Boston University, discussed his recent work in longevity and healthy aging on the November 11, 2007, broadcast of *CBS News Sunday Morning*. Dr. Perls is currently investigating the effects of lifestyle choices on the longevity of centenarians.

### Building New Blood Vessels

Laura E. Niklason, MD, PhD, from Yale University and a recipient of the 2001 AFAR Research Grant and 2002 Beeson Scholar, was profiled in the *Charlotte News & Observer* in November, 2007. The article profiled her research on replicating blood vessels that can be used for dialysis patients and in heart bypass surgery.

### When to Decide for the Mentally Ill

In an October 7, 2007, article in *The New York Times*, 2000 Beeson Scholar Jason Karlawish, MD, from the University of Pennsylvania, pointed out that a diagnosis for a mental disease does not mean the person is incapable of working, making decisions, or voting.

### Solving the Puzzle of Chronic Pain

Anne Louise Oaklander, MD, PhD, of the Massachusetts General Hospital and 1999 Beeson Scholar, was featured on CNN.com on September 24, 2007. The feature focused on treating patients with chronic pain that do not have an obvious cause of the pain and do not respond to medicine.

### Preventing Falls

Elizabeth Phelan, MD, of Harborview Medical Center and 2003 Beeson Scholar, was featured in the *Seattle Times* on September 10, 2007, offering recommendations on preventing falls in the elderly.

### Exercising Your Memory

An August 19, 2007, article in *The New York Times* sports magazine, *PLAY*, cited Scott Small, MD, of Columbia University and 2000 Beeson Scholar, whose study shows that exercise has a positive effect on cognitive function. Increased exercise resulted in increased blood flow to the brain, which was associated with improvements in memory.

## Health and Retirement Study

"Geriatric Conditions and Disability: The Health and Retirement Study," co-authored by 2003 Beeson Scholar, **Kenneth Langa, MD**, was published in the August 7, 2007, issue of the *Annals of Internal Medicine*. The study found that geriatric conditions are similar in prevalence to chronic diseases in older adults and in some cases are as strongly associated with disability.

## New Insights into Role of Signaling Proteins

Research by 1999 Beeson Scholar **Thomas Rando, MD, PhD**, of Stanford University School of Medicine, indicates that a stem cell's ability to reproduce, regardless of the age of the stem cell, is dependent on the age of the cell's environment. The study was published in the August, 2007, issue of *Science* and featured in articles on *Forbes.com*, *Voice of America*, and *Science Daily*.

## Slowing Cognitive Impairment

**Malaz Boustani, MD, MPH**, of Indiana University School of Medicine and 2005 Beeson Scholar, was featured in *WebMD*, *Medical News Today*, the *Los Angeles Times*, and other media outlets for his recent study published in the *Journal of the American Geriatrics Society*, in August, 2007. Dr. Boustani's study looked into the long-term effect of H2 blocker use, as a contributing factor in the development of cognitive impairment. The study showed that there was a 2.4 time higher rate of developing some type of cognitive impairment if an H2 blocker had been used for more than two years.

## Quality Care at Lower Cost

A July 3, 2007, *Washington Post* article on palliative care cited 2000 Beeson Scholar **Sean Morrison, MD**, from the Mount Sinai School of Medicine in New York, on how the use of palliative care not only provides very ill patients with the care they need but also lowers hospital costs.

## Making Waves in Ireland

**Bernadette McGuinness, MD, MRCP**, Senior Clinical Research Fellow, Queen's University Belfast, first recipient of the Paul B. Beeson Career Development Award extension to the Republic of Ireland and Northern Ireland, was featured in the June 25, 2007, issue of the *Belfast Telegraph*. Her research focuses on the neuropsychological changes and genetics of early Alzheimer's disease.

## Researchers' Home Visits May Increase Clinical Trial Participation

Research about enrollment of Alzheimer's disease patients in clinical trials conducted by 2000 Beeson Scholar **Jason Karlawish, MD**, of the University of Pennsylvania was featured in the *The Washington Post*, *Forbes.com* and several other media outlets in June, 2007. Dr. Karlawish's study questioned whether home visits made by researchers would help increase the number of caregivers who are willing to enroll Alzheimer's disease patients in clinical trials. The study found that caregivers were more inclined to enroll their loved ones and that home visits could also result in shorter recruitment periods and increase patient retention.

## Working Out the Brain

A March 26, 2007, *Newsweek* cover story about exercise and the brain featured two AFAR-supported scientists: **Scott Small, MD**, of Columbia University and **Kristine Yaffe, MD**, of the University of California, San Francisco, both recipients of the Paul Beeson Career Development Award in Aging Research. Dr. Small discussed the results of his research showing that humans who exercised regularly during a three-month period grew new brain cells in the areas of the brain that controlled learning and memory. Dr. Yaffe commented about the additional cognitive benefits of exercise.

## Aging Among Genders

**Mark Lachs, MD**, of The New York Presbyterian Health System/Weill Cornell, appeared on the WABC-TV program *Viewpoints* on March 18, 2007, to discuss how men and women age. Dr. Lachs, Director of Geriatrics at The New York Presbyterian Health System and Irene F. and I. Roy Psaty Distinguished Professor of Medicine and Co-chief of the division of Geriatric Medicine and Gerontology at the Weill Medical College of Cornell University, is a preeminent geriatrician and authority on the issue of elder abuse. He is a 1995 Beeson Scholar and a current AFAR board member.

## Genes Linked to Longevity

*NOVA scienceNOW*, the acclaimed science series on PBS, featured a 13-minute broadcast segment on aging and longevity genes. The segment, which aired January 9, 2007, included interviews with **Nir Barzilai, MD**, 1994 AFAR Research Grant recipient and 1997 Beeson Scholar.

# Beeson Scholars

To learn more go to [www.beeson.org](http://www.beeson.org)

## 2007

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**Randall J. Bateman, MD**

Assistant Professor of Neurology  
Washington University School of Medicine

**Julie P.W. Bynum, MD, MPH**

Assistant Professor of Medicine  
Dartmouth Medical School

**Sascha Dublin, MD, PhD**

Assistant Investigator, Center for Health Studies  
Group Health Cooperative

**Roe Holtzer, PhD**

Assistant Professor of Neurology  
Albert Einstein College of Medicine

**Angela L. Jefferson, PhD**

Assistant Professor of Neurology  
Boston University School of Medicine

**Kimberly S. Johnson, MD**

Assistant Professor of Medicine  
Duke University Medical Center

**Kejal Kantarci, MD**

Assistant Professor of Radiology  
Mayo Clinic, Rochester

**Patricia M. Kearney, MBBChBAO, PhD**

Clinical Research Fellow  
Trinity College, Dublin

**M. Bernadette McGuinness, MD, MRCP**

Senior Clinical Research Fellow  
Queen's University Belfast

**Nicolas Musi, MD**

Assistant Professor of Medicine  
University of Texas Health Science Center at San Antonio

**Neil A. Segal, MD, MS**

Assistant Professor  
University of Iowa

**Manjula Kurella Tamura, MD, MPH**

Assistant Adjunct Professor of Medicine  
University of California, San Francisco

**Lihong Wang, MD, PhD**

Assistant Professor of Psychiatry  
Duke University Medical Center

## 2006

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**Katrin F. Chua, MD, PhD**

Assistant Professor of Medicine  
Stanford University School of Medicine

**Margaret C. Fang, MD, MPH**

Assistant Professor of Medicine  
University of California, San Francisco School of Medicine

**Alex D. Federman, MD, MPH**

Assistant Professor of Medicine  
Mount Sinai School of Medicine

**Emily V.A. Finlayson, MD, MS**

Assistant Professor of Surgery  
University of Michigan Medical School

**Stacy M. Fischer, MD**

Assistant Professor of Health Care Policy and Research  
University of Colorado Denver School of Medicine

**Alfred L. Fisher, MD, PhD**

Assistant Professor of Medicine  
University of Pittsburgh School of Medicine

**Sean X. Leng, MD, PhD**

Assistant Professor of Medicine  
Johns Hopkins University School of Medicine

**Ann M. O'Hare, MD, MA**

Assistant Professor of Medicine  
University of Washington School of Medicine

**Caterina Rosano, MD**

Assistant Professor of Epidemiology  
University of Pittsburgh Graduate School of Public Health

**Manish N. Shah, MD, MPH**

Associate Professor of Emergency Medicine  
University of Rochester School of Medicine and Dentistry

**Consuelo H. Wilkins, MD**

Assistant Professor of Medicine and Psychiatry  
Washington University School of Medicine

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**2005**

**Liana G. Apostolova, MD**

Assistant Professor of Neurology  
David Geffen School of Medicine at University of California,  
Los Angeles

**Malaz A. Boustani, MD, MPH**

Assistant Professor of Medicine  
Indiana University School of Medicine

**Jennifer S. Brach, PhD**

Assistant Professor of Physical Therapy  
University of Pittsburgh School of Health and Rehabilitation  
Sciences

**Arleen F. Brown, MD, PhD**

Assistant Professor of Medicine  
David Geffen School of Medicine at University of California,  
Los Angeles

**Cynthia M. Carlsson, MD, MS**

Assistant Professor of Medicine  
University of Wisconsin School of Medicine and Public Health

**Daniel R. Goldstein, MD**

Associate Professor of Internal Medicine  
Yale University School of Medicine

**Wendolyn S. Gozansky, MD, MPH**

Assistant Professor of Medicine  
University of Colorado Denver

**Leanne Groban, MD**

Associate Professor of Anesthesiology  
Wake Forest University School of Medicine

**Arti Hurria, MD**

Director of the Cancer and Aging Research Program  
City of Hope

**Pearl H. Seo, MD, MPH**

Assistant Professor of Hematology/Oncology  
Miller School of Medicine at University of Miami

**Dellara F. Terry, MD, MPH**

Assistant Professor of Medicine  
Boston University School of Medicine

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**2004**

**Sandy Chang, MD, PhD**

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**2000**

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## 2000

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## 1999

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## 1998

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**1997**

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**1996**

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## **About the American Federation for Aging Research**

AFAR is a nonprofit organization whose mission is to support biomedical research on aging. It is devoted to creating the knowledge that all of us need to live healthy, productive, and independent lives. Since 1981, AFAR has awarded approximately \$100 million to more than 2,400 talented scientists as part of its broad-based series of grant programs. Its work has led to significant advances in our understanding of the aging process, age-related diseases, and healthy aging practices. AFAR communicates news of these innovations through its organizational web site [www.afar.org](http://www.afar.org) and educational web sites Infoaging ([www.infoaging.org](http://www.infoaging.org)) and Health Compass ([www.healthcompass.org](http://www.healthcompass.org)).

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