



# INSTITUTE ON AGING

Summer 2010

[www.med.upenn.edu/aging](http://www.med.upenn.edu/aging)



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## AGING

INTERNATIONAL  
CONFERENCE  
ON AGING AND  
ARCHITECTURE

How do you want to live when you are older? It's a provocative question that, in many people's minds, is most often tied to health-care and thus medicine or nursing. This October, PennDesign is tackling this very question and refocusing our attention on the how, the where, and the what of 'living older' with New Aging, an international conference on aging and architecture.

Running October 1<sup>st</sup>-2<sup>nd</sup>, New Aging is envisioned as a uniquely strategic conference with 48 hours of innovation, creativity, and inspiration to evolve living environments for the elderly.

Guest speakers from within and outside the design profession will provide the professional and visionary background of the conference, ultimately leading to a manifesto on "New Aging" in architecture. At the forefront of the discussion will be recent advances in architecture and urbanism dealing with age-related challenges which combine the best utilization

and the utmost dignity for those aging.

The New Aging conference will be divided into four modules. The first module, "Prototyping the Future," is a workshop focused on a search for a new type of architecture that envisions what organizers are calling 'a new way of life,' one that re-integrates aging into normal, everyday life and provides the elderly with the freedom and independent life they deserve in lieu of barriers and limitations.

The Friday evening module, "Envisioning the Future," will be a conference session with dinner that will challenge current conceptions - and misconceptions - about aging and will discuss living longer and better with a futuristic twist.

Aubrey de Grey, PhD, a theoretician in the field of gerontology; Chief Science Officer of the SENS Foundation, and co-author of *Ending Aging*, and Greg Stock, CEO of Signum Biosciences; biophys-

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Basic Science  
**Clinical**  
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## Research in aging at Penn

celebrating 30 years

MESSAGE FROM THE DIRECTOR



As spring rolls into summer, the work in aging continues. This April, the IOA awarded nine pilot research grants – thanks to the generous support of The Bingham Trust and a partnership with the Penn Center for Musculoskeletal Disorders (PCMD). Information on the awardees is available beginning on page 6, with full abstracts on the IOA’s website. This is the final year for the grant from The Bingham Trust, which allowed us to double the number of pilot research grants we gave out each year for the last five years. It is my hope that another organization, individual, or individuals will recognize the importance of the pilots and the valuable preliminary research that has been conducted and provide the funding that will support a continuation of the enhanced pilot research grant program. Those interested

should contact Irene Lukoff at [ilukoff@upenn.edu](mailto:ilukoff@upenn.edu) or 215-573-0187. I invite you to join us at one of the upcoming IOA events - be it a Visiting Scholars Series lecture, the 2010 Cristofalo Annual Lectureship with 2009 Nobel Prize-winner Carol Greider, PhD, or the inaugural Joseph Pignolo, Sr. Award in Aging Research. Select lectures are available as podcasts, on the IOA’s website and now through Penn’s iTunesU. For those who missed this year’s Sylvan M. Cohen Annual Retreat with Poster Session on Aging, co-sponsored by PCMD, we have uploaded the day’s lectures to Penn’s iTunesU; the link is listed in the recap on page 4. Special thanks to our Sylvan Cohen Visiting Scholar, Dr. Cliff Rosen, who braved recent back surgery to join us and was greeted with a packed house.

Penn Medicine and AstraZeneca Partnership To Find New Therapies for Alzheimer’s Disease

In March, the University of Pennsylvania and AstraZeneca announced a new collaborative research agreement. The research collaboration will be an effort to bridge the transition from drug discovery to development and will initially focus on generating new Alzheimer’s disease (AD) drug candidates for clinical development. Researchers will concentrate on the protein tau, a key component of the neurofibrillary tangles that are thought to contribute to the destruction of nerve cells in the brain, which leads to subsequent symptoms of AD. For Penn Medicine, the Center for Neurodegenerative Disease Research (CNDR) will provide rapid access to unique state-of-the-art drug compound screening assays and knowledge of the biology of tau, first characterized for its role in dementias by CNDR Director Virginia M.-Y. Lee, PhD, MBA, and John Q. Trojanowski, MD, PhD, CNDR Co-Director and Director of the IOA. For its part, AstraZeneca scientists will supply basic research with access to the technologies and skills needed to discover and develop new drug molecules. Under the terms of the agreement, which contains potential royalties and milestone payments linked to successful clinical development of tau-targeted therapies, AstraZeneca will have exclusive access to compound IP and study data for any commercial purposes from the research performed under the agreement.

The Newsletter is published two times per year by the Institute on Aging at the University of Pennsylvania. Prior issues are available online.

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NEW AGING

Continued from front cover

cist; best-selling author; biotech engineer, and former Director of the Program on Medicine, Technology and Society at UCLA School of Medicine, are the confirmed speakers for this segment.

First thing Saturday morning, “Visiting the Future,” will feature a collection of innovators and thinkers who will present realized and visionary projects that are instrumental in outlining a new future of aging architecture and reinvigorating the nursing homes, care facilities and other institutions which often serve multiple functions as home, community, medical facility, and hospice for people in their later years of life. Victor Regnier, an author and leading expert in dealing with housing and community planning for the elderly; Omar Akbar, former Director of the Bauhaus Foundation and Urban Curator and Professor for Theory of Architecture and Urban Design at the University for Applied Sciences in Dessau, Germany, and Madeline Gins, an artist, architect and poet; Co-Founder of the Architectural Body Research Foundation, and initiator of Architecture Against Death, will be featured.

For the final module, “Applying the Future” will close the two-day conference by focusing on how society can adapt to aging challenges and what innovations are ‘in the pipeline’ or about to be realized. Among the speakers and presenters are Arnaud Gelauff, Principal at Arons Gelauff Architekten and an architect and urban planner of award-winning buildings in the Netherlands; Dan Cinelli, Principal at Perkins Eastman, the leading architectural firm for senior living projects in the U.S., and Manuel Ocaña

from Architecture and Thought Production Office and the mastermind behind Santa Rita Geriatric Centre in Ciutadella, Illes Balears, Spain.

As a lead-in to the two-day conference, PennDesign also launched the New Aging Award 2010. The award was designed as a search for progressive architecture designs (real or conceptual) for the elderly and was made possible by the Kasirer Family. “Banal architecture has become a barrier to exacerbating physical limitations, social isolation, and dependency,” explains Matthias Hollwich, principal at HWKN, lecturer in architecture at Penn Design, and developer of the New Aging Award and international conference. “The New Aging Award is looking for designs that break these trends and offer a design quality enabling the elderly to lead a life of dignity.”

Criteria for submissions were broad, welcoming any architectural project designed for or including a single person or group of people who are 55 and older. Designs could range from a private house to an assisted living facility, nursing home, or continuing care facility. Submissions were judged by a select jury, led by William Braham, the Interim Chair of the Department of Architecture at PennDesign, along with Matthias Hollwich (Principal, HWKN, and PennDesign); Winka Dubbeldam (Principal, Archi-Tectonics, and PennDesign), and two additional jury members. There were two award categories, one for visionary and one for realized projects, and six honorable mentions. The winner in the visionary category is ‘Nursing Home: Floating Houses,’ and the winner of the realized project category is ‘Senior-Life: NewBridge on the Charles.’ Information on the honorable mentions, and links to all of the designs are available online.

New Aging, the international conference on aging and architecture, will be held October 1-2, 2010. Visit [www.new-aging.com](http://www.new-aging.com) for more information, the latest scheduling updates, and to register to attend. There is a registration fee for attendees.

Basic Science  
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## Structurally Sound: Bone Health and Aging 2010 Sylvan M. Cohen Annual Retreat with Poster Session



Partnering this year with the Penn Center for Musculoskeletal Disorders, the IOA presented the 2010 Sylvan M. Cohen Annual Retreat with Poster Session on April 28, 2010, in Houston Hall. This year's retreat focus was on bone health and aging.

Dr. John Trojanowski, Director of the IOA, opened the afternoon's retreat and lectures in Houston Hall by welcoming attendees and thanking Mrs. Alma Cohen, who generously supports the day's activities in memory of her husband and founding chair of the IOA's External Advisory Board, Sylvan M. Cohen.

Dr. Louis Soslowky, Director, Penn Center for Musculoskeletal Disorders; Fairhill Professor of Orthopaedic Surgery; Professor of Bioengineering; Vice Chair for Research, Department of Orthopaedic Surgery, and Director of the McKay Orthopaedic Research Laboratory, introduced the Sylvan M. Cohen Visiting Scholar, Dr. Clifford J. Rosen, Director of Clinical and Translational Research and Senior Scientist at the Maine Medical Center Research Institute. Dr. Rosen spoke on "Aging and the Effects of Timekeeping on Bone Turnover and Body Composition" to a capacity crowd in the Class of '49 auditorium.



In his lecture, Dr. Rosen began with a refresher on the aging-phenotypical changes in body composition and IGF-1. He moved into an introduction to the physiology of timekeeping and clock mechanisms and the connection to fat deposition, skeletal maintenance, and their regula-

tion. He also discussed his research with the nocturnin gene and reviewed implications of the bone-fat-clock connection.

Serving as Penn Presenters were Dr. Robert Pignolo, Assistant Professor of Medicine and Director of Ralston-Penn Clinic for Osteoporosis & Related Bone Disorders, and Dr. Mary B. Leonard, Associate Professor of Pediatrics and Epidemiology. Dr. Pignolo, a past recipient of an IOA Pilot Research Grant and an IOA Fellow, presented "The Biological Basis for Alternative Approaches to Osteoporosis Treatment." His presentation gave a quick overview of current therapies and then focused on three different anabolic approaches to age-related bone loss based on putative cellular mechanisms for bone loss - promoting osteoblast lineage determination, mechanical signal transduction, and stem cell transplantation.

In her lecture, "Bone Structure, Muscle Function, and Vitamin D in Adults with Chronic Kidney Disease," Dr. Leonard discussed the significant effect that chronic kidney disease (CKD) has on bone and bone quality and looked at research, from both adults and children, as to the relationship between CKD, various aspects of bone quality, vitamin D levels, and other contributing factors such as hyperparathyroidism.

Podcasts of audio from the lectures are available on the IOA website. Audio and video from the lectures are available on the IOA's section on Penn's iTunesU at [www.upenn.edu/cgi-bin/itunes/itunes](http://www.upenn.edu/cgi-bin/itunes/itunes). You will need to have iTunes on your computer to access the latter.

Following the lectures and Q&A sessions, attendees moved to the Hall of Flags for the Poster Session on Aging. Over 60 posters were on display in basic sci-

*Photos courtesy of Mark Garvin*

## Basic Science **Clinical** Education & Policy Translational

ence, clinical research, and social sciences/education/community programs. Penn faculty, staff, students, and researchers in aging were joined by colleagues from other area colleges and universities. Judges nominated the following poster presenters for awards:

### Basic Science



**1<sup>st</sup> Prize:** *Forebrain Overexpression of Alpha-Synuclein Leads to Early Postnatal Neuron Loss and Synaptic Disruption*, presented by Youngshin Lim and Victoria Kehm, School of Medicine.

**2<sup>nd</sup> Prize:** *Mitochondrial Biogenesis and Reactive Oxygen Species*, presented by Cody Crammer, School of Medicine.



### Clinical Research



**1<sup>st</sup> Prize:** *Apolipoprotein E Status Modulates the Clinical and Neuroanatomic Phenotype of Alzheimer's Disease*, presented by David A. Wolk, School of Medicine.

**2<sup>nd</sup> Prize:** *Urinary Incontinence and New Psychological Distress Among Community-Dwelling Older Adults*, presented by Heather F. de Vries, School of Medicine.



### Education/Community Programs



**1<sup>st</sup> Prize:** *Spousal Correlation on the Demand for Prevention Among the Elderly and Near-Elderly*, presented by Andrea Puig, Wharton School.

**2<sup>nd</sup> Prize:** *Limited Variation in Biomarker-Based Health Indicators by Socioeconomic Status in Sub-Saharan African Low Income Population*, presented by Iliana V. Kohler, Hans-Peter Kohler, and Beth Soldo, School of Arts & Sciences.



**Director**  
John Q. Trojanowski, MD, PhD

**Associate Director**  
Steven E. Arnold, MD

**Deputy Director**  
Kathryn Jedrzewski, PhD

### MISSION:

The mission of the Institute on Aging (IOA) at the University of Pennsylvania is to improve the health of older adults by increasing the quality and quantity of clinical and basic research as well as educational programs focusing on normal aging and age-related diseases at the University of Pennsylvania School of Medicine and across the entire Penn campus.

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Funding the Next Generation of Research:  
\$434,962 in 2011 Pilot Research Grants

The IOA Pilot Research Grant Program supports new faculty entering the field of aging, assists Penn faculty in obtaining critical, preliminary data which serve as the basis for grant applications to agencies funding aging research, and stimulates multi-disciplinary projects that focus the diverse expertise at Penn toward aging research. With the support of

The Bingham Trust and support from the Penn Center for Musculoskeletal Disorders, the Pilot Research Grant Program awarded nine total pilot grants to investigators and research projects in the School of Medicine, the School of Nursing, and the School of Veterinary Medicine. Visit us online for complete abstracts.



**Social Networks in Long-Term Care: Enhancing Existing Approaches to Measurement**

Katherine Abbott, PhD, MGS, School of Nursing

Recent studies have highlighted the importance of social networks for individuals' health. Limited evidence, however, exists for older adults in long-term care (LTC) settings, who are very dependent on social interactions for their emotional and physical well-being. The three aims of this study are to: (1) develop social network interview guides that will capture recent social interactions of elders in LTC as reported by the elder, paid LTC staff, and informal caregivers; (2) pretest and assess the feasibility of administering the social network interview guides, and (3) assess the consistency of resident reports of social interactions.

**Notch Signaling in Bone Regeneration**

Kurt Hankenson, PhD, School of Veterinary Medicine



Bone regeneration is defective in geriatric patients. A healing deficit is also observed in other tissues, such as muscle, with age. One explanation is a well-recognized deficiency in Notch signaling, a cell-to-cell growth factor pathway. Notch signaling is also active during bone regeneration; however, there has not been a report of decreased Notch signaling in bone associated with age nor associating defects in healing with alterations in Notch. We hypothesize that Notch signaling is reduced in aged mesenchymal stem cells (MSC), contributing to a decrease in MSC number and function and defective bone regeneration observed with aging, and that activating Notch signaling will promote bone regeneration.

**Aging of the Hematopoietic Niche**

Olena Jacenko, PhD, School of Veterinary Medicine



Aging of the hematopoietic system is characterized by altered blood cell differentiation, deficient immune function and increased incidence of blood cancers. This project will test if the coordinate aging of the skeletal cells and their matrix constituents that comprise the putative hematopoietic regulatory microenvironment, or niche, leads to the age-associated deregulation of blood cell development.



2011 Pilot Research Grants in Aging



**Characterization of LRRK2 Kinase Activity and Mutants Thereof Causal of Parkinson's Disease**

Benoit Giasson, PhD, School of Medicine

Mutations in the gene leucine-rich repeat kinase 2 (LRRK2) were identified as the most common known cause of Parkinson's disease. The gene's function and specificities and the effects of specific disease-causing mutations on these properties are still largely unknown. This project aims to determine the effects of divalent metal ion on LRRK2's ability to modify protein targets, conduct a screen to identify specific protein targets modified by LRRK2, and explore the hypothesis that some disease-causing mutations in LRRK2 may alter the protein target specificity.

**The Role of IPMK in mTOR Pathway and Autophagy**

Sangwon Kim, PhD, School of Medicine

Autophagy plays a key role in cellular housekeeping by removing damaged organelles. During aging, the efficiency declines and intracellular waste accumulates. A recent study unveiled that a key molecular component for nutrient sensing, Target of Rapamycin (TOR), is one of the major regulators of autophagy. We recently identified that inositol polyphosphate multikinase (IPMK) is required for mammalian TOR (mTOR) signaling pathway functionality and potentially autophagy. We hypothesize that IPMK is a novel regulator of the aging process and plays a key role in cellular senescence. This project will attempt to establish a novel link between IPMK and cellular senescence and to identify the biochemical mechanism behind this interaction.

**Telomere Maintenance and Musculoskeletal Aging in Breast Cancer Survivors**

Jun Mao, MD, MSCE, School of Medicine

As survival among women with breast cancer has increased, understanding aging issues in the context of existing cancer therapies is important. Aromatase inhibitors (AIs) are a standard hormonal treatment that blocks the conversion from androgen to estrogen. While AIs help prevent breast cancer recurrence, this may result in accelerated musculoskeletal aging manifested as arthralgia, decreased bone mineral density, and fractures. Emerging research also suggests that estrogen is necessary for telomere maintenance and helps prevent cellular aging. We will perform an epidemiology study to characterize the relationship between patient reported AI-associated arthralgia and telomere length in peripheral blood.

**Modulation of Progenitor Cell Differentiation Through BMP Signaling**

Eileen Shore, PhD, School of Medicine

Aging of bone is characterized by changes that decrease its strength and predispose it to damage. Rare genetic disorders can provide critical insight into fundamental cellular mechanisms. One such disease, fibrodysplasia ossificans progressiva (FOP), is characterized by congenital skeletal malformations and progressive extra-skeletal endochondral ossification and is caused by mutation of the ACVR1/ALK2 protein, a specific cellular receptor. Our studies suggest mutated ACVR1 receptors raise the set point of cells to be more sensitive to interactions with molecular and mechanical inducers and modulators of bone and cartilage cell formation. We will examine cell growth characteristics of progenitor/stem cells with the normal and mutant ACVR1 receptor and define the cell fate decisions that are altered in response.



# Research and News in Aging

## Funding the Next Generation of Research: 2011 Pilot Research Grants

Continued from page 7

### The Effect of Aging on Mitochondrial Heteroplasmy and Mitochondrial Dysfunction

Neal Sondheimer, MD, PhD, School of Medicine

It is known that mitochondrial function declines in tissues from elderly patients, but the reason for this decline is unclear. Changes in mitochondrial DNA have been previously observed, including an increase in copies of this DNA that are missing information. In this study, we will attempt to identify the rate at which mutations emerge in mitochondrial DNA across the human lifespan. We will also correlate the emergence of age-related mutations with loss of mitochondrial function by isolating mitochondrial DNA sequences from the elderly and determining its influence on the capacity of mitochondria to generate power. This research will help determine whether improving the integrity of the mitochondrial DNA could ameliorate some of the effects of aging.

### Aging of Hematopoietic Stem Cells

Wei Tong, PhD, School of Medicine

Blood cells are continually produced from hematopoietic stem cells (HSCs) that reside in the bone marrow. The mechanisms for HSC aging are not well understood. The adaptor protein Lnk is an important regulator of HSC homeostasis by limiting self-renewal. Mice lacking Lnk (Lnk<sup>-/-</sup>) harbor an expanded HSC pool during post-natal development. Young Lnk<sup>-/-</sup> HSCs exhibit enhanced self-renewal with superior repopulation abilities in serial transplantation assays. Lnk<sup>-/-</sup> mice also show alterations in the HSC compartment during aging, with a marked increase in the peripheral blood count. We aim to investigate molecular mechanisms by which Lnk affects HSC self-renewal during aging and to achieve a mechanistic understanding of how signaling molecules important for HSC expansion and self-renewal regulate HSC aging.

## Dr. Weintraub: Compulsive Behaviors More Common in PD Patients Taking Dopamine Agonists

According to a study of more than 3,000 Parkinson's disease (PD) patients, certain types of PD medications are linked to impulse control disorders (ICDs) - such as pathological gambling, compulsive shopping, hypersexuality, and binge eating. In a study appearing in the May 2010 issue of *Archives of Neurology*, lead author and IOA Fellow, Daniel Weintraub, MD, Associate Professor of Psychiatry and the Philadelphia VA Medical Center, explains that dopamine agonist treatment (such as Requip or Mirapex) in PD is associated with a 2- to 3.5-fold increased odds of having an ICD. 13.6% of patients had at least one of the four most common ICDs. In addition, levodopa treatment, to a lesser extent, was also associated with the prevalence of ICDs. The findings came from interviews conducted with PD patients treated at 46 movement disorder clinics in the U.S. and Canada.

## Dr. Van Deerlin: New Risk Factor for Early-Onset Dementia

By scanning for genetic variation in post-mortem brain tissue from over 500 individuals in 11 countries, IOA Fellow Viviana Van Deerlin, MD, PhD, Associate Professor of Pathology and Laboratory Medicine, and researchers from Penn Medicine and Children's Hospital of Philadelphia, along with other colleagues, have found a new risk factor for frontotemporal lobar degeneration (FTLD), the second-most-common cause of early-onset dementia after Alzheimer's disease. Using the genome-wide scanning, researchers were able to pinpoint variations in common to patients with a specific subtype of FTLD, TDP-associated FTLD. Patients had multiple genetic variations called SNPs in common in a region on chromosome 7, containing the protein TMEM106B - as compared to over 2,500 disease-free controls. Thus, researchers concluded that the TMEM106B gene variants confer a higher genetic risk for all FTLD-TDP patients, as well as for the subset of patients with progranulin mutations.

## Dr. Wolk: Cognitive & Anatomic Differences in AD Gene Carriers

Using a combination of cognitive and neuro-anatomic measures, IOA Fellow David Wolk, MD, Assistant Professor of Neurology at the Penn Memory Center, and colleagues have clearly identified significant differences in the ways that Alzheimer's disease (AD) affects patients with and without the apolipoprotein E ε4 (APOE ε4) gene, a known risk factor for AD.

Their study found that genetic factors, like the APOE gene, seem to result in somewhat different patterns of cognitive impairment and the brain regions vulnerable to the AD process. Patients with mild AD and the APOE ε4 gene perform more poorly on memory tests and have prominent abnormalities in brain regions critical for memory. Patients with mild AD and without the APOE ε4 gene perform more poorly on tests of attention, language, and executive function and have more prominent abnormalities in brain regions critical for these abilities.

## Research Study in Aging

### Healthy older adults needed. Are you between the ages of 45-70?

The University of Pennsylvania is conducting a research study to assess sensory, cognitive, and neurological function in healthy older adults. To be a part of this study, you must:

- Be between 45-70 years of age
- Be available to participate in a study requiring 8 full days of testing broken up into 2 sets of 4-day sessions separated by 6 weeks
- Not have any major illnesses

You will be compensated for your time and travel. For details, call Geraldine Fischer at (215) 662-6580 or email [geraldine.fischer@uphs.upenn.edu](mailto:geraldine.fischer@uphs.upenn.edu). When contacting us please reference the "Sensory Dysfunction in Early Parkinson's Disease" study.

## Healthy Aging - What *You* Can Do...



To reach optimal peak bone mass and continue building new bone tissue as you age, you should consider several factors.

**Calcium:** An inadequate supply of calcium over a lifetime contributes to the development of osteoporosis.

**Vitamin D:** Vitamin D plays an important role in calcium absorption and bone health.

**Exercise:** Like muscle, bone responds to exercise by becoming stronger. Weight-bearing exercise is the best for your bones.

**Smoking:** Smoking is bad for your bones - and your heart and lungs.

**Alcohol:** Regular consumption of 2-3 ounces a day of alcohol may damage the skeleton, even in young women and men. Heavy drinkers are more prone to bone loss and fracture, from poor nutrition and falls.

**Medications that cause bone loss:** The long-term use of glucocorticoids can lead to a loss of bone density and fracture. Bone loss also can result from long-term treatment with certain antiseizure drugs; gonadotropin-releasing hormone (GnRH) drugs used to treat endometriosis; excessive use of aluminum-containing antacids; certain cancer treatments, and excessive thyroid hormone.

▶ Visit the NIH Osteoporosis and Related Bone Diseases' National Resource Center at [www.niams.nih.gov/Health\\_Info/bone/default.asp](http://www.niams.nih.gov/Health_Info/bone/default.asp) for more information.

## Awards and Honors: News from IOA Fellows and Associate Fellows



### Penn Medicine

**Dr. Kevin Foskett**, Professor of Physiology, Program Chair of the Cell Biology and Physiology Program in the Cell and Molecular Biology Graduate Group and Member of the Neuroscience Graduate Group, was presented with the inaugural Jane M. Glick Graduate Student Teaching Award, established in 2010 by the Glick family in remembrance of Dr. Jane Glick and her dedication to graduate student education.

**Dr. Norman Hecht**, William Shippen, Jr., Professor of Human Reproduction, was elected as a Fellow of the American Association for the Advancement of Science.

**Dr. James Shorter**, Assistant Professor of Biochemistry and Biophysics, has received a \$100,000 Grand Challenges Explorations grant from the Bill & Melinda Gates Foundation to support an innovative global health research project entitled, "Unleashing Protein Disaggregates to Prevent HIV Infection."

**Joseph DiRienzi**, Pathologists' Assistant and Supervisor of the Medical Pathology Section in the Department of Pathology and Laboratory Medicine, is the 2010 recipient of the Dean's Award for Excellence in Medical Student Teaching by an Allied Health Professional.

### Penn Nursing

**Dr. Lois Evans**, van Ameringen Professor in Nursing Excellence; **Dr. Neville Strumpf**, Professor of Nursing, and **Dr. Mary D. Naylor**, Marian S. Ware Professor in Gerontology and Director of the NewCourtland Center for Transitions and Health, have all been inducted in the Sigma Theta Tau Inaugural International Nurse Researcher Hall of Fame for their long-term national and/or international impact on nursing science. They, with others, will be recognized at the International Nursing Research Congress in July.

**Dr. Mary D. Naylor** is one of four health experts to be newly appointed to the Medicare Payment Advisory Committee (MedPAC), an independent Congressional agency advising the U.S. Congress on access to care, cost, quality of care, and other key issues affecting Medicare.

**Dr. Kathryn H. Bowles**, Associate Professor of Nursing, received funding from the Leonard Davis Institute for "A Pilot Study of the Feasibility and Effect Size of the Early Screen for Discharge

## Research and News in *Aging*

Planning and the Discharge Decision Support System on Discharge Planning and Patient Outcomes." **Dr. Diane Holland**, Post-Doctoral Fellow in Nursing, is one of the co-investigators.

**Eeseung Byun** and **Melissa O'Connor** have been selected as 2010-2012 John A. Hartford Foundation BAGNC Scholars. Only eleven of these prestigious scholarships were awarded nationwide. Ms. Byun's mentor is **Dr. Evans**; Ms. O'Connor's mentor is **Dr. Bowles**.

**Melissa O'Connor** has received a Ruth L. Kirschstein National Research Service Award (NRSA) for Individual Predoctoral Fellows in Nursing for her project, "Impact of Length of Stay and Number of Home Nursing Visits on Rehospitalization." **Dr. Bowles** is her sponsor, and **Dr. Joan**

**Davitt**, Assistant Professor, School of Social Policy & Practice, is her co-sponsor.



**Linda L. Herrmann** was awarded a Sigma Xi Chapter Grant for her project, "Brain Injury in Geriatric Populations (BIG): Rehabilitation Intensity and Early Functional Recovery in Older Adults Following Mild and Moderate Traumatic Brain Injury." Her mentor is **Dr. Therese Richmond**.

**Dr. Harleah Buck** (pictured above with **Dr. Strumpf**) has been appointed Assistant Professor in the School of Nursing at Penn State University, effective August, 2010. Congratulations!

## ▶ Caregiver Classes

### Starting this summer; call for more information.

The Penn Memory Center will offer a six-week psychoeducational class for those caring for a family member or other loved one with dementia. This course is not like the ongoing support group as it will only run for six weeks. As a participant, you will learn specific techniques to better care for your loved one and ways of coping with the personal and emotional challenges you face.

Each session includes a relaxation exercise known to be helpful in managing stress and other techniques geared toward helping you deal with your own thoughts and feelings as a caregiver. The course will cover such topics as improving communication with the person for whom you care and their professional care providers. You will also learn ways to evaluate and modify behaviors (your own as well as your loved one's) in order to help manage distressing and difficult behaviors.

The course is open to any person caring for someone with Alzheimer's disease of any stage. Much of the content though is geared toward individuals caring for someone who, while still living in the community, has had dementia for a few years, needs support managing activities of daily living, and who may be showing changes in their personality and behavior. The course will meet at Ralston House, where free parking is available. Cost for participation is \$120. To register for the course, or if you have any questions, please call 215-662-7810 or email [Melissa.Livney@uphs.upenn.edu](mailto:Melissa.Livney@uphs.upenn.edu).

## Spotlight on an IOA Fellow and New Faculty Joint Recruit: A Profile of Dr. Alice Chen-Plotkin

Newly appointed as an Assistant Professor of Neurology, Dr. Alice Chen-Plotkin is the IOA's latest faculty joint recruit, in partnership with the Department of Neurology. Dr. Chen-Plotkin's expertise is in genomic studies of neurodegenerative diseases, and her research interests lie in better understanding the mechanisms of these diseases in order to intervene in the disease processes.

Dr. Chen-Plotkin began her career with a BA in English from Harvard University. She was named as a Rhodes Scholar and studied at Oxford University, earning a Master's of Science (Research) in Biology.

From there, she returned to pursue and receive her MD from Harvard, serving as a Howard Hughes Medical Institute Research Fellow at Massachusetts General's (MassGeneral) Institute for Neurodegenerative Disease in 2001-2002. She completed two Clinical Fellowships, the first in Medicine at Brigham and Women's Hospital and the second in Neurology at MassGeneral

and Brigham and Women's Hospital.

In 2007, Dr. Chen-Plotkin relocated to Penn for a Fellowship in Movement Disorders, evaluating, guiding, and treating patients at the Parkinson's Disease and Movement Disorders Center (PDMDC) at Pennsylvania Hospital. Simultaneously, she joined the Center for Neurodegenerative Disease Research (CNDR) as a Postdoctoral Fellow, supported through the NIH's Blueprint Translational Research in Neurobiology of Disease training program. At CNDR, she focused her studies on frontotemporal lobar degeneration (FTLD) and FTLD-TDP and worked with Drs. Lee and Trojanowski to identify other genetic risk factors for FTLD-TDP, the predominant form of

FTLD. Dr. Chen-Plotkin became an Instructor in the Department of Neurology in 2008 and then an Attending Physician in 2009, in addition to her patient care at PDMDC and her participation in research activities at CNDR and as part of the (then newly formed) Penn Udall Center for Parkinson's Research.

Her new lab will concentrate on three main areas of research: 1) understanding a new genetic risk factor in frontotemporal dementia (FTD); 2) defining the function of the FTD and ALS-associated protein TDP-43, and 3) predicting cognitive decline in Parkinson's disease (PD), an outgrowth of her clinical work as a PD neurologist.

Dr. Chen-Plotkin has received numerous awards and honors. She was a Presidential Scholar, was awarded the John Harvard Scholarship, and was inducted as a Junior Phi Beta Kappa while at Harvard as an undergraduate. In 1996, she became an American Rhodes Scholar. She was one of thirty fellows in the Paul and Daisy Soros Fellowship for New Americans program in 2000. Professionally, Dr. Chen-Plotkin was given the Partners Neurology Residency Teacher of the Year award in 2007. In 2008, she was the sole national recipient of the American Academy of Neurology Foundation-ALS Association Clinician-Scientist Development award and was one of sixteen to receive the Burroughs Wellcome Fund Career Award for Medical Scientists, which provides \$700,000 in unrestricted funds over five years.

A member of the American Academy of Neurology, Dr. Chen-Plotkin serves as an ad hoc reviewer for

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*Neurology, Annals of Neurology, Human Mutation, and Acta Neuropathologica*, as well as a commentator for *Parkinson's Disease Monitor and Commentary*. She has been an active teacher, adviser, and mentor and served on the Rhodes Scholarship Selection Committees for the State of Mississippi and the Southeast District. Dr. Chen-Plotkin is a published author of medical articles and poetry, was the principal illustrator for *Cruse's Illustrated Dictionary of Immunology*, and has received accolades as a pianist.

Q: You view yourself as a physician-scientist. How do you balance these two halves?

A: I enjoy thinking like a scientist – forming theories, designing experiments to test the theories, and then proving or disproving them – and applying this to the study of human diseases, often with human tissue or DNA samples as a starting point. As a result, there's a lot of synergy to my dual career. My role as a neurologist is helpful to my research in that I understand where human samples come from, and I am sometimes even involved in recruiting patients. At the same time, I am always aware of the fact that my patients usually have incurable neurodegenerative diseases; I can help their symptoms, but right now there is very little to do to save their brain cells. I hope that I am a better doctor as well because my involvement in research keeps me up to date on new and emerging ideas about disease and treatment.

Q: As a new Assistant Professor of Neurology with your own lab, will your focus remain primarily on

FTD and on PD?

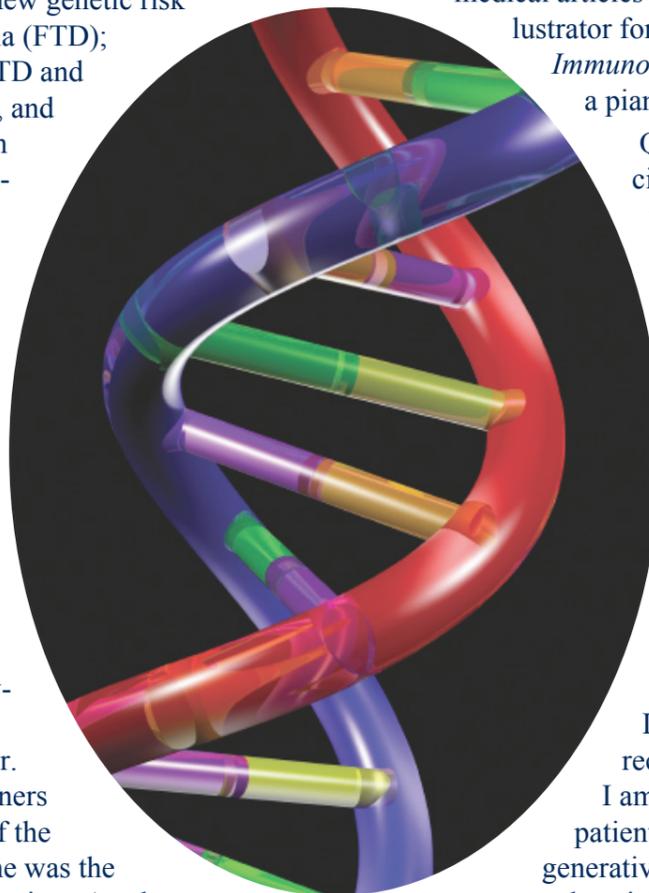
A: I went into fellowship with the general theory that using genomic-scale screens to identify leads in disease (and specifically in FTD) would result in my finding the best leads for downstream mechanistic explorations. You are in essence looking at every piece of the haystack to find that proverbial needle. So you're unbiased, and you're more likely to find the thing that is central to disease. Although this was my general theory, I still can't believe how well it's turned out. Without going into lots of details, two independent, separate screens I did as a post-doc identifying specific genetic risk factors in FTD (found one gene in the whole genome) and identifying specific regulators of gene expression in FTD (found one strong regulator in a screen of 800+) appear to be converging! This, to me, is strong evidence that what I'm looking at is a central mechanism in FTD. So, it only makes sense to really figure out how this mechanism works; I plan to pursue this in my lab.

Late in fellowship, I also pursued a project looking for markers in the blood that may predict whether a person in PD will become demented. It was one of those projects that might lead nowhere, but we ended up with a really strong lead in an initial cohort of 70 people. I plan to continue exploring this result as well, both to see if it replicates in a much larger cohort of patients and also to see what is happening biologically to cause this signal.

Q: As part of the next generation of researchers, do you have any thoughts on the future of aging research?

A: I think we're at a really interesting place historically in that there are many new technologies (with more coming on the scene every minute, it seems) that make it possible to tackle scientific questions at a level of breadth and detail that weren't possible when many people trained just 10 years ago. The Human Genome Project was only completed in 2003-2004, and now we're looking at a not-to-distant future when

Continued on page 15



## News from the IOA External Advisory Board: Welcoming New Members

The Institute on Aging External Advisory Board is comprised of dynamic and dedicated individuals from all walks of life who share a common goal – to improve the quality of life for older adults. Meeting several times a year, this body of informed, hands-on volunteer advisers is instrumental in forwarding

the mission of the Institute on Aging. Recently the Board added new members, each bringing a unique perspective on aging research and medicine.

The Institute on Aging is pleased to welcome Carol Huff, Lawrence Huff, and Dr. Adam Koppel.

### Carol G. Huff



Carol G. Huff is the Founder and President of Real Estate Investment Strategies, Inc., a commercial real estate management firm located in Philadelphia. Ms. Huff has worked in the real estate industry for over thirty years and has personally

been involved in more than \$2 billion of real estate transactions - from managing real estate investment portfolios to brokering sales, developing properties, and negotiating major leases.

Prior to forming her own firm, Ms. Huff was the Partner-Elect of a nationally known real estate firm headquartered in New York. Her expertise was in syndications and development. She also led marketing of newly developed projects, concentrating on those in which the firm's partners had substantial financial interests.

Ms. Huff holds an undergraduate degree in Civil Engineering, an MBA, and the prestigious C.C.I.M. designation (Certified Commercial Investment Member). Ms. Huff is a board member of CADE—Helping Children Make Smart Decisions and a Former President of the Philadelphia Bar Foundation.

### Lawrence A. Huff



Lawrence A. Huff is the Founder and President of Huff Real Estate, Inc., a real estate consulting and tenant representation firm with national and local corporate and institutional clients, as well as a commercial office space asset management firm in Center City Philadelphia.

Prior to establishing Huff Real Estate over twenty five years ago, Mr. Huff formed, organized, and managed with great success the 138-man corporate

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real estate department at Conrail. During his nine years at Conrail, Mr. Huff institutionalized the application of modern financial theory to real estate management. He further introduced the concept of asset management and put in place a facilities energy management program.

Mr. Huff is a graduate of Stanford University and received a law degree from George Washington University. He is the Former President of the Delaware Valley Chapter of the National Association of Corporate Real Estate Executives.

### Adam Koppel, MD, PhD



Adam Koppel, MD, PhD, received his BA and MA in History and Science (Physics) from Harvard College in 1991. He completed his MD/PhD as a Medical Scientist in Training in 1998 at Penn's School of Medicine and Department of Neuroscience and graduated in 2000, after also receiving his MBA as a Palmer Scholar from the Wharton School. While training at Penn Medicine, Dr. Koppel did a clinical rotation at the Center for Neurodegenerative Disease Research (CNDR). Together with Drs. Virginia Lee and John Trojanowski, Dr. Koppel co-owned Layton Bio-Science, a biotech company specializing in cell-therapy and progressed through to clinical trials in 1998.

Dr. Koppel is currently a Managing Director at Bain Capital in the Brookside Capital Fund, a Public Equity Hedge Fund. In this role, Dr. Koppel manages an investment portfolio of mostly publicly traded equities across the entire healthcare sector, as well as a small portion of private investments. Prior to joining Bain Capital, Dr. Koppel was an Associate Principal at McKinsey & Co. in their New Jersey/New York Healthcare Practice. In this role, he acted as a consultant to pharmaceutical/biotechnology companies and hospital systems.

Dr. Koppel also serves as a board observer for Portola Pharmaceuticals, Tengion, and Concert Pharmaceuticals. He maintains a strong interest in neurosciences and, in particular, Alzheimer's and related neurodegenerative disease drug discovery.

### Alice Chen-Plotkin

*Continued from page 13*

you might be able to sequence whole genomes of patients routinely for quasi-clinical purposes and research. In this setting, what aspects of traditional modes of disease-mechanistic inquiry are going to be outdated? How do we decide what's worth pursuing scientifically when, increasingly, the limits to what you can do are not technological, but financial, or intellectual in the sense of getting a big picture out of an overwhelming amount of data? There's going to be an increasing need to be comfortable dealing with large datasets and the structures (databases) and tools (computer programs) that let you manipulate and understand the data. At the same time, there's going to be an increasing need to be smart about what questions may lead to answers that will truly illuminate a field, rather than a desire to acquire data just because you can.

### ALZHEIMER'S AGITATION STUDY

#### Citalopram for Agitation in Alzheimer's Disease (CITAD)

Do you care for a person with Alzheimer's disease who gets easily upset? CITAD is a 9-week treatment study to see if a medication, citalopram (Celexa), is helpful in the treatment of agitation in Alzheimer's disease. Participant may receive study medication. All participants will receive a medical evaluation and study procedures at no charge, and caregivers will receive education and support during the study. If you have any questions, please contact Suzanne DiFilippo, RN, CCRC, at 215-349-8228.



## Make a gift...

Support the IOA's research efforts in aging and aging-related diseases.

For more information, contact Irene Lukoff, Director of Development, at 215-573-0187 or at [ilukoff@upenn.edu](mailto:ilukoff@upenn.edu).



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## UPCOMING IOA EVENTS



save the dates

### September 16, 2010 - 9:00am

IOA Visiting Scholars Series presents:  
Daniel M. Skovronsky, MD, PhD  
Avid Radiopharmaceuticals  
Venue: To Be Announced

### September 21, 2010

Joseph Pignolo, Sr. Award in Aging Research  
Recipient: Richard A. Miller, MD, PhD  
University of Michigan  
Venue: To Be Announced

### October 19, 2010 - 3:30pm

Vincent J. Cristofalo, PhD, Annual Lectureship  
Cristofalo Lecturer: Carol Greider, PhD  
Johns Hopkins University  
Venue: BRB 2/3 Auditorium

### January 25, 2011

IOA Visiting Scholars Series presents:  
Susan L. Lindquist, PhD  
Whitehead Institute for Biomedical Research/MIT  
Venue and Time: To Be Announced

### Confirmed Speakers To Be Scheduled:

Claudia H. Kawas, MD, UC Irvine  
Robert M. Sapolsky, PhD, Stanford University  
James W. Vaupel, PhD, Max Planck Institute  
Alan M. Garber, PhD, Stanford University

Registration is requested. Select lectures will be available as podcasts. To subscribe to the free podcasts, visit [www.med.upenn.edu/aging](http://www.med.upenn.edu/aging) or [www.upenn.edu/cgi-bin/itunes/itunes](http://www.upenn.edu/cgi-bin/itunes/itunes).

