INSTITUTE ON AGING
UNIVERSITY OF PENNSYLVANIA
FALL 2006

FINDING THE 'PROBLEM PROTEIN'

When Dr. Manuela Neumann traveled from Germany and arrived at Penn and the Center for Neurodegenerative Disease Research (CNDR) as a Visiting Scholar two years ago, she came on a mission: to work with the team at CNDR to further investigate amyotrophic lateral sclerosis (ALS) or Lou Gehrig's disease. What began as a quest to decipher ALS became a major step forward in not one but two diseases.

In their ongoing research into neurodegenerative diseases, Drs. Virginia Lee and John Trojanowski and the research team at CNDR have focused on 'problem proteins,' that is proteins which misfold and accumulate in the form of lesions, composed of toxic plaques and tangles, in the brain. Amyloid β, tau, and α-synuclein have all been identified as the 'problem proteins' which lead to the development of Alzheimer's disease, dementia with Lewy bodies, Parkinson's disease, and multiple system atrophy, depending on where the lesions accumulate in the brain. Working with Dr. Neumann and colleagues at other institutions in the U.S., Canada and Germany, the focus became to find the 'problem protein' behind ALS. Research provided a different answer than expected.

In a paper published this October, the research team at CNDR announced a major finding that links two equally devastating neurodegenerative diseases: frontotemporal dementia (FTD) and ALS. The link is a single protein called TDP-43, which was found to accumulate abnormally in the post-mortem brain tissue of all 72 cases of patients - with ALS or FTD - who were examined. The determination that TDP-43 is in fact the 'problem protein' behind FTD and ALS suggests that these two diseases may in fact be opposite ends of the spectrum, clinically, of the same disease. "Clinically there's overlap in these two disorders, so it was very tantalizing to see if there was anything to link them biochemically," explains Dr. Lee, Director of CNDR.

FTD is actually a complex group of disorders and results from toxic lesions which accumulate in the frontal and temporal lobes of the brain,

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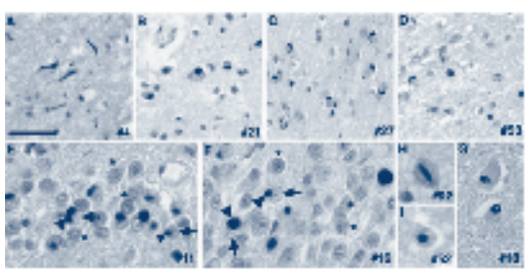
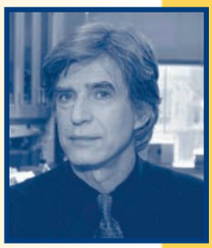


Dark spots in the post-mortem brain tissue indicate the presence of the protein, TDP-43.

"Ubiquitinated TDP-43 in Frontotemporal Lobar Degeneration and Amyotrophic Lateral Sclerosis," *Science,* 314:130-133, 2006.

Nine IOA Pilot Research Grants Awarded - beginning on page 6

Message from the Director



John Q. Trojanowski, MD, PhD

This is shaping up as an exceptional year for research here at Penn. As you will see in our cover article, efforts at CNDR have uncovered TDP-43 as the 'problem protein' responsible for two neurodegenerative diseases.

This year, the IOA was able to award 9 IOA Pilot Research Grants, each showing great promise in advancing our understanding of aging and aging-related disease. (see pages 6-8)

40% of the IOA Pilot Research Award grantees who have completed their initial research have gone on to receive additional, external funding to further their research. In this

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INSIDE

Institute on Aging
University of Pennsylvania

Director
John Q. Trojanowski, MD, PhD

Deputy Director
Kathryn Jedrziewski, 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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IOA Fellows Shaping the Next Generation of Researchers in Aging

As large as the projected shortfall in the number of geriatricians for the coming decades is, there is an equal concern about nurturing an interest among researchers to pursue work in aging and aging-related diseases. Not every path to a career in geriatrics, gerontology, and aging research begins with a specialty in one of these areas. Many researchers have turned their attention to aging and aging-related diseases as a natural progression of the course of their scientific pursuits, or an influential encounter with a colleague or mentor active in the field of aging has encouraged a change of focus.

Four IOA Fellows are championing the field of aging with students here at Penn. Dr. Brad Johnson, Assistant Professor of Pathology and Laboratory Medicine, and Dr. Robert Pignolo, Assistant Professor of Medicine in the Division of Geriatric Medicine, are leading a 'frontiers' course for fourth-year medical students while Dr. David Casarett, Assistant Professor of Medicine in the Division of Geriatric Medicine and Staff Physician, Philadelphia VA Medical Center, and Dr. Jason Karlawish, Associate Professor of Medicine in the Division of Geriatric Medicine and Director of the Alzheimers Disease Center's Education and Information Core, are working with students in the Master of Science in Clinical Epidemiology (MSCE) program directed by the Center for Clinical Epidemiology and Biostatistics (CCEB).

The 'Frontiers in Aging' course originated as a part of a grant application according to Dr. Pignolo. The grant went unfunded, but the desire to proceed with the effort, that of introducing the biology of aging to medical students, led Drs. Johnson and Pignolo to formally create the course. 'Frontiers' courses by their very nature are intensive submersions that introduce medical students to a few cutting-edge areas of medical science and typically last 1-2 weeks. Fourth year medical students take a 2-week 'frontiers' course in ethics and are free to fulfill the remaining 2 weeks with 'frontiers' courses of their choosing.

Now in its fourth year, the 'Frontiers in Aging' course reviews new findings in basic biology of aging and in clinical geriatrics that aren't necessarily affecting current, standard patient care but which might in the future. Basic science and clinical faculty from the School of Medicine provide didactic sessions each morning that expand awareness of how aging affects human physiology and behavior and how an understanding of these issues can improve patient care and well-being. The informal setting gives students immediate access to Penn experts in such areas as neurodegeneration, primary care geriatrics, aging of various organ systems, and sleep and aging. Afternoons are then reserved for journal article discussion and independent research on age-related topics by students.

"We have had a waiting list for the last two years for the 'Frontiers in Aging' course," says Dr. Bob Pignolo. "I think it's a very positive sign

that there is such strong interest among medical students to learn more about aging and to take advantage of an opportunty to better prepare themselves for their professional careers as physicians and physician researchers. Even though there was disappointment that the initial grant wasn't funded, Dr. Johnson and I decided that the goal needed to be pursued. We continue to direct the course because it is as much fun for us - or more - as it is for the students."

Designed for students in CCEB's Master of Science in Clinical Epidemiology (MSCE) program, "Aging for Epidemiologists: what it is, is not, and how we measure it" is a 7-week seminar directed by Drs. Casarett and Karlawish that offers an introduction to the concepts of aging and aging research.

"Aging is a term that stands for many things and captures not only scientific but ethical and social concepts. The history of medicine shows that many things once considered normal aging are better thought of as diseases," explains Dr. Karlawish. "The challenges of studying aging and age-related diseases include how to negotiate the boundary between health and disease and how to measure aging. The course is designed to give students the skills to successfully negotiate these boundaries."

Thus 'Aging and Epi,' as it is called, not only seeks to answer the basic question of what aging is; it also reviews the systems of care available for the elderly, the challenges of research that involves the elderly, and the various methods of measuring aging - for brain and body function, pain, and other symptoms. Creating an understanding for these future epidemiologists is critical as epidemiology, the science underlying much of public health and preventive medicine, will be confronting the inevitable impact on public health as the U.S population continues to age.

IOA Pilot Grantee Continues

Dr. Jalpa Doshi, Research Assistant Professor of Medicine in the Division of General Internal Medicine and IOA Fellow, has received a Career Development in Implementation Research Award from the American Heart Association (AHA).

The 4-year AHA grant will allow Dr. Doshi to pursue the project "Impact of Prescription Coverage and Cost-Sharing on Statin and Antihypertensive Use in the Elderly." This vein of research began with a 2006 IOA Pilot Research Grant for the project "Impact of cost sharing on medication use in elderly patients with multiple chronic conditions."

Continued from cover

Message from the Director

highly competitive time of limited funding, we are extremely pleased with our pilot awardees' success.

With this year's Visiting Scholars Series, we have had the pleasure to welcome to Penn some amazing minds in aging research, who have made themselves available to our students, faculty and colleagues to discuss research, offer advice, and serve as mentors.

I encourage you to join us as the roster of speakers will touch on a number of important topics in aging. In January, Dr. Risa Lavizzo-Mourey, my predecessor at the IOA, returns to Penn to tackle the critical topic of emergency preparedness, older adults, and health disparities. Dr. Tamara Harris, Chief of the NIA's Geriatric Epidemiology Section, will discuss obesity and older adults in February. Dr. Fernando Torres-Gil (UCLA) and Dr. Carroll Estes (UCSF) round out the academic year.

Leading up to May 8th and the 2007 Sylvan M. Cohen Annual Retreat with Poster Session on Aging, the IOA will host two special Penn Panels, each addressing an area of convergence between medicine and nursing research here at Penn to optimize the care of older adults. (see pages 8 and 9)

Congratulations all and best wishes for the New Year,

Geriatric Medicine News: Osteoporosis Clinic at Penn

Weak bones and fractures are not 'just a part of getting older.'

Pennsylvanians need to address the issue of bone health and osteoporosis. Common perception is that this is the domain of older women, particularly those of Caucasian or Asian descent, those with a slim build, those who smoke, those who are post-menopausal, and those with a family history of osteoporosis.

In fact, one in two women and one in four men over age 50 will have an osteoporosis-related fracture in their lifetime. According to a 2002 report by the National Osteoporosis Foundation, Pennsylvania has the 5th highest prevalence of osteoporosis and low bone mass in the nation, affecting over 2.2 million women and men in 2002 and close to 2.5 million by 2010.

Osteoporosis is associated with a great deal of functional loss as well as pain, dependence, and even depression. Bones naturally lose some of their density as we age. Those suffering from osteoporosis or other bone disorders experience a significant decrease in bone density, placing them at greater risk for fracture. Only about 40% of hip fracture survivors are able to return to their prior level of performance for activities of daily living, and only 25% return to their pre-fracture level for instrumental activities of daily living. Men have much higher mortality rates and chronic disability after a hip fracture as compared to women. Fractures are not limited to hips. Bones throughout the body, including vertebrae, can break.

To address this serious issue, Dr. Robert Pignolo, Assistant Professor of Medicine in the Division of Geriatric Medicine, has established the Ralston-Penn Clinic for Osteoporosis & Related Bone Disorders. In its third year, the clinic evaluates and treats patients with known

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Exploring the Benefits of Animal Models

Birds do it; bees do it. Drosophila, elephants, monkeys, dogs and cats do it. Despite some industries' best efforts, even humans do it. We all age.

The impact of aging and aging-related diseases is felt by humans and animals, from the degenerative pain of osteoarthritis to the issues accompanying obesity, cardiovascular health, and increased longevity. Since all species experience the aging process, what can we learn from each other? More importantly, what can researchers learn that can then be applied to uncover the mechanisms of the aging process in other species and subsequently develop possible treatments for aging-related diseases?

On March 8, 2007, the IOA and the Penn School of Veterinary Medicine will present a full-day symposium to discuss areas where current aging research using animal models at the Penn School of Medicine and the Penn School of Veterinary Medicine intersects, where future research may continue through joint investigative efforts, and what the implications are for the study of aging and aging-related diseases for humans and animals as a result.

To support a inter-school dialogue, individual faculty from the University of Pennsylvania School of Medicine (MED) and the University of Pennsylvania School of Veterinary Medicine (VET) will present their animal models research in certain key areas, with a corresponding colleague offering introductions and moderating topic discussion. The following is a current list of the day's speakers and moderators:

Longevity: moderator - Gail K. Smith, VMD, PhD, Orthopaedic Surgery, VET; speaker - Brad Johnson, MD, PhD, Pathology & Laboratory Medicine, MED

Nutrition and Diabetes: moderator - Karen Teff, PhD, Institute for Diabetes, Obesity & Metabolism, MED; speaker - Kathryn Michel, DVM, MS, Nutrition, VET and speaker - Rebecka Hess, DVM, Medicine, VET

Immunology: moderator - Peter Felsburg, VMD, PhD, Clinical Immunology, VET; speaker - Michael Cancro, PhD, Pathology & Laboratory Medicine, MED

Cardiovascular Health: moderator - H. Lee Sweeney, PhD, Physiology, MED; speaker - Meg M. Sleeper, VMD, Cardiology, VET

Osteoporosis: moderator - Karen Rosenthal, DVM, MS, Medicine and Surgery, VET; speaker - Robert Pignolo, MD, PhD, Geriatric Medicine, MED

Obesity: moderator - Steven Fluharty, PhD, Vice Provost for Research; speaker - Karen Teff, PhD, MED

Retinitis: moderator - Joshua Dunaief, MD, PhD, Ophthalmology, MED; speaker - Gustavo Aguirre, VMD, PhD, Medical Genetics and

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Ophthalmology, VET

Serving as the day's keynote speaker will be Steven Austad, PhD, Professor, Department of Cellular and Structural Biology, at the Sam and Ann Barshop Institute for Longevity and Aging Studies at the University of Texas Health Science Center at San Antonio.

Dr. Austad is fascinated by a major puzzle in biology: why do some species live short lives with rapid physical decay and others live much longer, senescing slowly? Attempting to identify the underlying cellular and molecular mechanisms that account for such species differences is the basis of Dr. Austad's unique research in comparative biogerontology. His choice of animal models includes bats (which can live 40+ years in the wild), squirrels, marmosets, and baboons, as well as traditional laboratory rats and mice. His lab is also involved in the development of the common marmoset, a short-lived, rat-sized primate, as a valuable model species for the study of cognitive aging, the impact of diet on aging, therapeutic drug response, and the effects of early life events on later life pathology.

A recipient of numerous awards for outstanding research in gerontology, he is the author of Why We Age and the co-editor of the 5th and 6th editions of the Handbook of the Biology of Aging with Dr. Edward J. Masoro. He has also served, since 2001, on the Initial Review Group for aging grants of the Ellison Medical Foundation and co-directs, with Dr. Gary Ruvkun from Harvard, the 3-week summer course on the Molecular Biology of Aging at the Woods Hole Marine Biological Laboratory.

The symposium will close with a roundtable discussion among the day's speakers, presenters, and senior researchers in aging from Penn. Dennis Lawler, DVM, from Nestlé Purina PetCare, will also participate, offering insight from his extensive research on the influence of body weight and nutrition on a variety of health issues affecting dogs, including osteoarthritis.

As part of the symposium, the School of Medicine and the School of Veterinary Medicine will jointly award a $5,000 seed grant to an individual who attends the symposium and submits a winning proposal for a collaborative project, arising out of the day's discussion, that is intended to lead to future joint studies in animal models of aging. The IOA will also set aside a 2008 Pilot Research Grant to be awarded to a joint School of Medicine-School of Veterinary Medicine project using animal models of aging. For more information and to register to attend the symposium, visit **www.med.upenn.edu/aging**.

or suspected metabolic bone disease, including age-related and post-menopausal osteoporosis. Patient evaluation includes a complete skeletal history, exam and evaluation of bone density as needed.

As part of the clinic's outreach, Dr. Pignolo is partnering with the Ralston Wellness Center to offer two-part Wellness Seminars on Osteoporosis. An education class, giving seniors more details on what osteoporosis is and how to help address the underlying causes, takes place the first week. A free bone density screening occurs the following week. Additional seminars will be scheduled in the spring. For more information and to sign up to attend, call the Ralston Wellness Center at 215-386-2984.

The Osteoporosis Clinic offers additional information online at **www.uphs.upenn.edu/gerimed/Osteo/**. To make an appointment, call 215-662-2746 and ask for the Osteoporosis Clinic by name.

Penn Memory Center and Alzheimer's Disease Center News

The Alzheimer's Disease Cooperative Study (ADCS), a federally-established consortium for clinical trials on AD, will receive $52 million over six years from the National Institutes of Health for several new research efforts. ADCS studies often test drugs or compounds outside those that may be pursued by major pharmaceutical companies for effectiveness in slowing the progression or treating symptoms of AD. The Penn Alzheimer's Disease Center has been a member of ADCS since its inception in 1991. The award is a cooperative agreement between the NIA and the University of California, San Diego, which coordinates the consortium of nearly 70 members in the U.S. and Canada.

Exciting Year Ahead in Aging Research: IOA Awards Nine Pilot Grants for 2007

Now in its fourth year, the IOA Pilot Research Grant program is designed to support new faculty entering the field of aging, to assist Penn faculty in obtaining critical, preliminary data to serve as the basis for grant applications to agencies funding aging research, and to stimulate multi-disciplinary projects that focus the diverse expertise at Penn toward aging research. In doing so, the IOA aims to foster the exploration of new directions in the field of aging on a broader scale. With the generous support of The Bingham Trust, the Pilot Research Grant program was able to award nine pilot grants to investigators and research projects in the School of Medicine, the School of Nursing, and the School of Arts & Sciences for 2007. More information is available online at **www.med.upenn.edu/aging**.

David Allman, PhD

School of Medicine, Department of Pathology & Laboratory Medicine

"Aging of hematopoietic stem cells"

Throughout most of adult life hematopoietic stem cells (HSCs) produce all red and white blood cells. However, with aging HSCs selectively lose the capacity to generate two types of white blood cells known as B and T cells. Both cells are key components of the adaptive immune system. The primary objective of our study is to determine why HSCs lose the capacity to generate B cells with age. Our experiments will test the hypothesis that aging leads to a decline in the activity of two proteins known to be required for early B cell development from HSCs. These proteins are named E47 and EBF. Understanding why E47 and EBF activity decreases with age will provide fundamental information on how aging impacts HSC function. As a result these studies will provide insights into potential clinical strategies to improve bone marrow transplantation and overall immune system function in the elderly.

Anne Cappola, MD, ScM

School of Medicine, Division of Endocrinoloy, Diabetes & Metabolism

"Ghrelin in the Frailty Syndrome: A Pilot Study"

Frail individuals are the most vulnerable subset of older people, with significantly poorer health and higher death rates compared to age-matched individuals who are not frail. The role of the endocrine system in the development of frailty is poorly understood, but existing evidence suggests a key role for circulating hormones and inflammatory cytokines in mediating frailty. Dr. Cappola is leading this pilot study to examine the effects of the hormone ghrelin on growth hormone and inflammatory cytokine production in frail and non-frail women. Data from this study will lead to a better understanding of the physiologic responses to ghrelin and may ultimately translate into appropriately targeted therapies to treat and prevent frailty.

Christopher Coleman, PhD, MPH, APRN-BC, ACRN

School of Nursing, Center for Health Disparities Research

"Reducing HIV Transmission Behaviors Among HIV Seropositive African American Men Fifty Years and Older"

With the use of antiretroviral therapy, infection rates and mortality from acquired immunodeficiency syndrome (AIDS) are stabilizing in the United States, but aging adults receive little attention in the area of infection prevention and control. While much of the focus has traditionally been on younger adults, the incidence and prevalence among adults fifty years and older with HIV (Human Immunodeficiency Virus) infection and AIDS are increasing. The purpose of this study is to establish the basis for an innovative intervention to be used with 60 Black (non-Hispanic) men fifty years and older who are HIV seropositive. To date, there are no nationally tested innovative interventions for this age group, making this project urgent in light of current demographics concerning prevalence in this population.

Dawn M. Elliott, PhD

School of Medicine, Department of Orthopaedic Surgery

"Intervertebral Disc Aging and Degeneration: Pilot study to evaluate a novel treatment to restore mechanical function and structure"

The primary function of the intervertebral disc is mechanical: allowing motion and providing load support in the spine. The altered loading associated with aging and degeneration has a potential link to back pain. Neither conservative treat-

ments nor surgical options restore disc structure or mechanical function. Minimally invasive therapies that slow or reverse degeneration and restore disc mechanics would be of significant benefit. The objective of this exploratory proposal is to restore disc mechanics, structure, and composition, and alter cell activity in an in vivo model of disc degeneration using an injectable crosslinking agent. Future studies, should this injectable therapy prove successful, will move toward clinical studies for human disc degeneration and will explore biological mechanisms and cell activity under this therapy.

Thomas F. Floyd, MD

School of Medicine, Department of Anesthesiology & Critical Care

"Aging & the brain's hypoxic response to anemia"

Fifty to eighty percent of patients experience postoperative cognitive dysfunction in the weeks after cardiac surgery; while less frequent after non-cardiac surgery, the occurrence is also significant. There is consensus that advanced age is the primary risk factor for this sequelae yet responsible mechanisms remain poorly understood. There is also concern that neurological injury after surgery may lead to further long-term cognitive decline or dementia. Major surgery is often associated with the occurrence of a rather acute anemia. We suggest that acute anemia may have an important role in postoperative cognitive dysfunction across the various surgical disciplines. Preliminary data from our laboratory shows that acute isovolemic anemia results in a marked impairment in the ability to acquire new memory in the aged rat with hypertension. Evidence suggests that aging may impair cells' ability to coordinate protective responses to lower than normal oxygen levels (hypoxic response). Anemia may initiate and require an efficient hypoxic response to prevent injury and cognitive impairment. Inefficiency, with aging, of hypoxia-sensing mechanisms in response to anemia may contribute to the increased risk of cognitive dysfunction in these patients. We will test the hypotheses that moderate, clinically relevant levels of acute anemia initiate a cerebral hypoxic response that is impaired with aging and results in an accelerated rate of cell death.

Brad Johnson, MD, PhD

School of Medicine, Department of Pathology & Laboratory Medicine

"Tissue repopulation and phenotypic rescue by bone marrow derived cells in a mouse model of premature aging"

We have developed a mouse model that suffers from the premature onset of age-related diseases. The model lacks the function of two genes, called Wrn and Terc, which in normal individuals act to prevent aging. There are rare examples of people who lack the function of one of these genes and develop age-related diseases more rapidly than normal: individuals lacking Wrn develop Werner syndrome while individuals lacking Terc develop dyskeratosis congenita. The combined loss of these genes in mice causes defects in many tissues, including impaired immune function, osteoporosis, and defective maintenance of the digestive tract, skin and liver. Our work will test if the defects can be repaired by transplantation of bone marrow from normal mice into the mutants. The bone marrow contains stem cells that can apparently travel through the bloodstream to tissues throughout the body and then contribute directly to the function of these tissues. We therefore believe that bone marrow cells taken from healthy mice and transplanted into the mutants may reverse some of the tissue defects in the mutants. Findings should help guide the use of transplanted cells in treating age-related diseases in people.

Paul S. Schmidt, PhD

School of Arts & Sciences, Department of Biology

"*couch potato* aging in Drosophila"

Reproductive diapause is a genetically programmed syndrome during which reproduction is suspended, stress resistance is elevated, and lifespan is extended. In the model organism Drosophila melanogaster, the propensity of a given line or genotype to enter reproductive diapause has a significant impact on a variety of traits, including lifespan, rates of senescence, stress resistance, reproductive output, lipid content, and development time. Recently, it was determined that the observed variation for reproductive diapause was determined by a single gene, *couch potato* (cpo); the ability to express diapause results from a reduction in the gene's expression or activity. As the phenotype of diapause has such widespread and pronounced effects on longevity, rates of aging, and correlated traits, any identified gene for diapause is also a candidate gene for aging. The Drosophila cpo gene exhibits homology to genes in other organisms, including vertebrates, and has been shown to impact the rate of progression of neurodegeneration. Our research seeks to address two questions: 1) what is the impact of variation in cpo expression on lifespan, rates of senescence, and associated traits and 2) what is the functional significance of naturally occurring cpo allelic variants on these traits?

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IOA Visiting Scholars Series 2006-2007

The IOA Visiting Scholars Series is dedicated to bringing national leaders in aging research, policy, and clinical care to Penn.

Sessions promote interdisciplinary discussion and debate. The Series is free and open to the public. Registration is requested; faculty, staff, students, and the community are welcome.

Select series lectures are available as podcasts. For information on subscribing to the free podcasts, visit the IOA website at **www.med.upenn.edu/aging** and click on the iPod graphic.

Thursday, January 10, 2007
Risa Lavizzo-Mourey, MD, MBA
President and CEO
Robert Wood Johnson Foundation
"Helping the Most Vulnerable"
Venue: Flyers/Sixers Surgery Theatre
2:00-3:30pm

Wednesday, February 21, 2007
Tamara B. Harris, MD, MS
Senior Investigator and Chief, Geriatric Epidemiology Section
National Institute on Aging
"Novel body composition and biochemical markers of obesity-related risk for older persons"
Venue: BRB II/III Auditorium
2:00-3:30pm

Thursday, March 22, 2007
Pre-Retreat Penn Panel: "Medicine and Nursing Collaborative Mentoring in a Long-Term Care Setting"
Panelists:

Jerry Johnson, MD
Chief, Division of Geriatric Medicine

Neville Strumpf, PhD, RN, FAAN
Professor in Gerontology and Director, Center for Gerontologic Nursing Science

Deanna Gray-Miceli, DNSc, FAANP
Adjunct Assistant Professor of Nursing

Venue and Time: TBA

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Exciting Year ahead in Aging Research

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Daniel Weintraub, MD
School of Medicine, Department of Psychiatry
"Use of ^{123}I ADAM SPECT Imaging to Measure Changes in Serotonin Transporter (SERT) Binding with Treatment of Depression in Parkinson's Disease"

The aim of this study is to better understand the chemical changes in the brain that occur as part of depression in Parkinson's disease (PD) and whether those changes are reversible with treatment. Parkinson's disease patients with depression who are enrolled in one of two treatment studies (one medication therapy and the other talking therapy) will undergo a brain scan to measure the function of the brain serotonin system, which is closely linked with depression. Subjects will be scanned both before and after study participation, so it will be possible to examine both the connection between depression in PD and changes in the serotonin system and whether successful depression treatment leads to a normalization of these serotonin changes.

Robert B. Wilson, MD, PhD
School of Medicine, Department of Pathology & Laboratory Medicine
"Screening assays for NADH-ubiquinone oxidoreductase deficiency"

Mitochondrial function declines with age in the very cells - neurons and muscle cells - that are most dependent on mitochondrial energy production; aging is of course associated with decreased muscle strength, increased risk of heart failure, and decreased neuronal function, including neurons involved in coordination. Loss of mitochondrial function, particularly function of Complex I (NADH-ubiquinone oxidoreductase), is also an important factor in Parkinson's disease (PD), for which advanced age is a risk factor. Complex I activity is selectively decreased by 15-30% in the part of the brain affected by PD, and the most commonly used mouse models of PD involve treating mice with chemicals that inhibit Complex I. Data suggest that Complex I deficiency contributes to PD and is therefore a logical target for further analysis and for drug screening. To identify potential drug targets, and potential drugs, that help reverse the deleterious effects of Complex I deficiency, Dr. Grazia Cotticelli and I developed a screening assay for Complex I deficiency using a yeast model system. The aim of our present work is to develop and validate mammalian-cell-based models of Complex I deficiency suitable for secondary drug screening and generate data to support additional investigation.

Finding the 'Problem Protein'

Continued from cover

areas which are responsible for judgement, behavior, planning and other executive functions and language. The disease manifests through marked changes in behavioral and emotion, often bordering on the criminal, and the gradual loss of language abilities, leading to loss of the ability to speak. FTD is the second most common cause of dementia, after Alzheimer's, in patients less than 65 years old. Among those with FTD, about one-third show motor neuron loss, indicative of ALS.

ALS strikes the areas of the brain that initiate and control muscle movements, leading to the gradual loss of these functions, muscle atrophy, and eventual paralysis. Interestingly enough, about 50% of patients with ALS exhibit a form of mild cognitive impairment, the precursor to dementia. A number have been diagnosed with a form of FTD, and many have frontal and temporal lobe atrophy in their brain, as indicated through neuroimaging.

"It's very exciting that we finally made the connection between dementia and motor neuron disease," explains Dr. Lee. Linking these two neurodegenerative diseases biochemically opens the door for drug discovery efforts to target TDP-43 and possibly provide effective treatments and therapies for those afflicted with these debilitating diseases.

Research was funded by the National Institute on Aging, an agency of the National Institutes of Health, and the Marian S. Ware Alzheimer Program at the University of Pennsylvania. In additon to Drs. Virginia Lee and John Trojanowski, the following Penn researchers are co-authors on the paper: Deepak M. Sampathu, Linda Kwong, Adam C. Truax, Matthew C. Micsenyi, Thomas T. Chou, Jennifer Bruce, Theresa Schuck, Murray Grossman, Christopher M. Clark, and Leo F. MCluskey. Manuela Neumann from Ludwig-Maximilians University, Munich, was first author of the paper. Additional co-authors include Bruce L. Miller (University of California, San Francisco); Eliezer Masliah (University of California, San Diego); Ian R. Mackenzie and Howard Feldman (both University of British Columbia); Wolfgang Feiden (University of Saarland, Homburg), and Hans A. Kretzschmar (Ludwig-Maximilians University, Munich).

studies in aging at Penn

Learn more about ongoing studies in aging and aging-related diseases by visiting the IOA website at **www.med.upenn.edu/aging** and clicking on "Research in Aging at Penn." Follow the links to connect with research, clinical trials, and investigative studies seeking participants.

If you would like to list your IRB-approved information on the IOA website, email aging@mail.med.upenn.edu.

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IOA Visiting Scholars Series 2006-2007

Wednesday, March 28, 2007
Fernando Torres-Gil, PhD
Director, Center for Policy Research on Aging and Professor of Social Welfare and Public Policy
UCLA
Lecture title TBA
Venue: BRB II/III Auditorium
2:00-3:30pm

Thursday, April 12, 2007
Pre-Retreat Penn Panel: "Medicine and Nursing Working Collaboratively on Research: Trauma, Violence, and Older Adults"

Panelists:

C. William Schwab, MD
Professor of Surgery and Chief of the Division of Trauma and Surgical Critical Care, UPHS

Therese Richmond, PhD, FAAN, CRNP
Associate Professor, Nursing and Research Director, Firearms & Injury Center at Penn (FICAP)

Mary Ann Forciea, MD
Associate Clinical Professor of Medicine and Director of the Delaware Valley Geriatric Education Center at Penn

Douglas J. Wiebe, PhD
Assistant Professor of Epidemiology

Venue and Time: TBA

Wednesday, April 18, 2007
Carroll L. Estes, PhD
Professor of Sociology and Founder, Institute for Health & Aging
University of California, San Francisco
Lecture title TBA
Venue: BRB II/III Auditorium
2:00-3:30pm

May 8, 2007
IOA 2007 Sylvan M. Cohen Annual Retreat with Poster Session on Aging: "Convergence of Medicine and Nursing Research to Optimize Care for Older Adults"

*For more information, visit **www.med.upenn.edu/aging**, or contact us at aging@mail.med.upenn.edu or 215-898-3163.*

Awards and Honors

Sustained Scientific Excellence Award: Dr. Strom

Dr. Brian Strom, Chair and Professor of the Department of Epidemiology and Biostatistics, George S. Pepper Professor of Public Health and Preventive Medicine, and Director of the Center for Clinical Epidemiology and Biostatistics, received the Sustained Scientific Excellence Award from the International Society for Pharmacoepidemiology (ISPE). ISPE is an international professional organization dedicated to promoting pharmacoepidemiology, the science which applies epidemiologic approaches to studying the use, effectiveness, value and safety of pharmaceuticals.

Williams Term Professor of Biology: Dr. Bonini

Dr. Nancy Bonini, Professor of Biology and Investigator, Howard Hughes Medical Institute, has been appointed the Lucille B. Williams Term Professor of Biology in the Department of Biology, School of Arts & Sciences. Dr. Bonini pioneered the use of Drosophila as a model system to study neurodegenerative diseases. The Williams Chair was established by Paul C. Williams, a longtime supporter of the Department of Biology and a member of the University Board of Trustees, in honor of his stepmother.

Ho-Am Prize in Medicine: Dr. Choi

Dr. Yongwon Choi, Professor of Pathology and Laboratory Medicine and Investigator at the Abramson Family Cancer Research Institute, has been awarded the 2006 Ho-Am

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Fellows in the Spotlight

A Conversation with Dr. Dan Weintraub

The IOA Fellows program brings together researchers, clinicians, and educators with varied interests and remarkable achievements in the field of aging. There are two levels of fellowship. The IOA Fellows are University of Pennsylvania faculty, representing the 12 schools within the University. Associate Fellows represent Penn staff, as well as colleagues from other U.S. institutions, who have demonstrated a keen interest in aging-related research, education, or services. The IOA is honored to include nationally-recognized members of Penn's faculty, such as Daniel Weintraub, MD, in the Fellows program.

Daniel Weintraub, MD

Assistant Professor of Psychiatry,
Assistant Professor of Neurology, and
Consultant Psychiatrist, Parkinson's Disease & Movement Disorders Center, School of Medicine
Consultant Psychiatrist, Parkinson's Disease Research, Education, & Clinical Center (PADRECC) at the Philadelphia Veterans Affairs Medical Center (PVAMC)

How does one best treat depression in elderly patients with neurodegenerative diseases? This is the question, raised by his ongoing clinical treatment of Parkinson's disease (PD) and Alzheimer's disease (AD) patients, that launched Dr. Daniel Weintraub's research quest.

Dr. Weintraub completed his undergraduate studies at the University of North Carolina at Chapel Hill and went on to medical and psychiatry residencies and geriatric psychiatry fellowship training at the University of Maryland. Prior to coming to Penn, Dr. Weintraub was an Assistant Professor of Psychiatry at the University of Louisville School of Medicine, receiving the 'Golden Apple Award' for outstanding teacher in the psychiatry residency program. In addition to his role at Louisville, Dr. Weintraub served as Director of the Landis Geriatric Center at Norton Hospital in Louisville, KY.

In 2001, he joined Penn's School of Medicine faculty as an Assistant Professor of Psychiatry, an attending physician at Philadelphia Veterans Affairs Medical Center (PVAMC) and HUP, and as a consulting psychiatrist for the Parkinson's Disease Centers at PVAMC and at University of Pennsylvania. In 2003, he was appointed an Assistant Professor of Neurology and received the Silver Medal in the Excellence in Government Awards Program in recognition of 'outstanding public service for his work at the PVAMC.'

Dr. Weintraub participates in a number of professional and scientific societies, including serving on two Movement Disorder Society (MDS) task forces to revise and make recommendations for the assessment of non-motor symptoms in PD and is a member of the Scientific Review Com-

mittee of the Parkinson Study Group. He is the author of over 40 journal articles, reviews, and book chapters, has lectured extensively, and serves as an ad hoc reviewer for numerous journals. A board-certified geriatric psychiatrist, Dr. Weintraub's areas of research interest include the psychiatric complications of Parkinson's and other neurodegenerative diseases, including Alzheimer's.

Dr. Weintraub is currently the recipient of a 5-year Career Development Award (K23) from the National Institute of Mental Health (NIMH), entitled "Depression Diagnosis and Treatment in Parkinson's Disease," and has also received grant funding from the Department of Veterans Affairs, the IOA, and an industry-sponsored investigator-initiated study. He is a Principal Investigator of a NIMH-funded R01 entitled "Depression in Alzheimer's Disease Study-2" and a Coordinating Investigator for an multi-site, international, industry-sponsored study of the frequency of impulse control disorders in PD.

IOA: As a geriatric psychiatrist, does your approach to treating or assessing patients change due to their age?

DW: My approach is different than that for the general adult population. The types of disorders that I am likely to encounter are different, so I tend to focus my differential diagnosis on mood/anxiety disorders, dementia, and delirium, with other disorders being less common. Psychiatric co-morbidity is common in elderly patients, and it is not uncommon for patients to have more than one psychiatric condition. The major risk factor for most neurodegenerative diseases is increasing age; many of my patients have complex psychiatric syndromes, including psychosis and agitation, in the context of illnesses such as AD and PD. With medical co-morbidity common in the elderly, it is important that I be aware of patients' medical conditions and medication regimens, both for diagnostic and treatment purposes. Finally, it is relatively uncommon that I see patients by themselves and more common to see them with a family member or caregiver, which changes the dynamics of the physician-patient relationship. I don't actually provide individual treatment to caregivers of PD or AD patients, but I almost invariably provide informal, supportive care and education in the context of the clinical research or care that I am providing to the identified patient. When working with neurodegenerative diseases, you're never just treating the patient but rather the patient's entire family or social network as these diseases impact significantly on the lives of everyone in close contact with the patient.

IOA: How does working with the VA contribute to your research studies?

DW: I really enjoying working with the Veteran population and think that it enhances my research. There are differences in the characteristics of a Veteran population compared with the non-Veteran population that I work with at Penn. Veterans tend to be older, have more medical co-morbidity, and are more racially diverse. Of course, they tend to be almost universally male, which can be helpful in some ways as many psychiatric disorders affect females more commonly and thus lead to predominantly

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Awards and Honors

Prize in Medicine. The prize, considered the 'Korean Nobel Prize,' is given to individuals who have contributed to cultural, artistic, and social development or furthered the welfare of humanity through distinguished accomplishments in their respective professional fields. Established in 1990, the award is presented in the five areas of Science, Engineering, Medicine, the Arts, and Community Service.

AAMC Distinguished Teacher Award: Dr. Davies

Dr. Helen Davies, Professor of Microbiology and Ombudsman for Students at Penn School of Medicine, has been recognized by the Association of American Medical Colleges (AAMC) with an Alpha Omega Alpha (AOA) Robert J. Glaser Distinguished Teacher Award for her efforts to provide the nation's next generation of doctors with an exceptional educational experience.

van Ameringen Chair in Nursing Excellence: Dr. Evans

Dr. Lois Evans, Chair, Family and Community Division and Professor of Nursing, has been named the van Ameringen Chair in Nursing Excellence. The van Ameringen endowed Chair will allow Dr. Evans to continue to pursue her research in lessening the use of physical restraints with older adults in nursing homes and hospitals, individualized care, behaviors in dementia, and models, environments, and outcomes of care for elders with psychiatric needs.

Robert F. Allen Symbol of H.O.P.E. Award: Dr. Kumanyika

Dr. Shiriki Kumanyika,

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Awards and Honors

Professor of Epidemiology and Biostatistics, Associate Dean for Health Promotion and Disease Prevention and Director of the Graduate Program in Public Health Studies, has won the 2006 Robert F. Allen Symbol of H.O.P.E. Award from the American Journal of Health Promotion. The cash award is presented annually to an individual who has made an outstanding contribution to serving the health promotion needs of underserved populations or promoting cultural diversity in health promotion.

NIH funding: Dr. Naylor

Dr. Mary D. Naylor, Marian S. Ware Professor in Gerontology, has received a 5-year NIH $2.9M award, co-funded by the National Institute on Aging and the National Institute of Nursing Research. "Health Related Quality of Life: Elders in Long-Term Care" will investigate the natural history of changes in health-related quality of life for the ever-increasing elderly population in the U.S. receiving longterm care, explore whether causal relationships exist, and provide a foundation for testing interventions in the future.

Penn Medicine Award of Excllence in Research: Dr. Sehgal

Dr. Amita Sehgal, Professor of Neuroscience and Investigator, Howard Hughes Medical Institute, was awarded the Stanley N. Cohen Biomedical Research Award. Dr. Sehgal was recognized for her work on mechanisms underlying the circadian rhythms of the fruit fly, Drosophila, as a model system, understanding the control of physiology and behavior by the 'molecular clock,' the genetic and molecular basis of sleep, and the relationship of the circadian and sleep systems to aspects of physiology.

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Meet the Board

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.

The Institute on Aging is honored to include Tom Rittenhouse among the External Advisory Board members.

Thomas S. Rittenhouse

Tom Rittenhouse favors a forthright approach about what it was that brought him to work with older adults. After a distinguished career in the retail industry, he "flunked retirement."

"Retirement wasn't quite made with everyone in mind," chuckles Mr. Rittenhouse. So, he accepted an invitation from a former mentor, Francis Strawbridge, and chose to apply his energies and his business expertise to the role of Managing Director of Ralston Center, an organization offering services to address the medical, mental health, and quality of life needs of olders adults.

How does a man well-versed in deliverables, supply chain efficiencies and commerce standards switch to bone health, flex and tone, and nursing home staff education?

Working from Ralston House, headquarters of the Ralston Center and also the physical home of the IOA, Mr. Rittenhouse first became acquainted with the IOA and its efforts to further aging and aging-related disease research. For him, it was a natural partnership. The programs that Ralston Center provides to help older adults maintain healthy independent lifestyles - through health and wellness seminars, exercise and fitness programs, horticulture and information resources - are possible thanks to the work and evidence-based studies from researchers and clinicians, like those here at Penn, who are and have been learning more about aging and healthy aging in particular.

"My wife insists that I just like to be in the same 'business' as she is," explains Mr. Rittenhouse. "We met when we were both working at Strawbridge & Clothier. Now, she serves on the Board of Directors for PresbyHomes & Services, and I am working with Ralston Center. The focus is different, but the emphasis is quite similar, and one that I consider to be of the utmost importance - to provide older adults in the Philadelphia area with a quality of life filled with dignity and care. The IOA is simply approaching this from a different perspective, giving those of us who are involved with providing services the information and the guidance we need to deliver the quality of life we all want for our parents and older family members, the quality of life they deserve."

"With so much activity in aging or related to aging happening within the walls of Ralston House on a daily basis," he continues, "you cannot

help but register the impact that maintaining a person's sense of independence and well-being has, especially on the spirit. So it was a fortuitious failure on my part that retirement, in the traditional sense, didn't suit me."

Before becoming involved with Ralston Center and services for older adults, Mr. Rittenhouse built a thirty-two year career in the retail industry, beginning as an executive trainee and rising to Vice President of Operations, Administration, and Controller with Strawbridge & Clothier. Leaving Strawbridge's in the mid 1990s, he moved to the Uniform Code Council, Inc. (UCC) and served as President and Chief Executive Officer, spearheading a variety of programs to advance the retail industry's adoption of intelligent business strategies to reduce costs and increase efficiencies throughout the supply chain. Under his leadership, the UCC expanded from 24 associates to over 250 associates worldwide. To be more responsive to the expanding needs of the global business community of its associates, Mr. Rittenhouse directed the UCC as it grew into a global organization of almost 300,000 member companies and serviced new industries, applying standards to such new areas as technological research and national defense. In the realm of fundraising, Mr. Rittenhouse's emphasis at UCC on finding new growth opportunities and applying existing technology in new areas led the effort to fund important research at the Auto-ID Center at MIT, which resulted in multi-industry application of electronic product code (EPC) technology to the global supply chain.

Among his peers, Mr. Rittenhouse is recognized as one of the early members of the Voluntary Interindustry Commerce Solutions Association (VICS), the organization that establishes the cross-industry standards that simplify the flow of product information in the general merchandise retail industry for retailers and suppliers, having served on the VICS Association Board of Directors and as a former co-Vice Chairman of VICS. For his contributions, Mr. Rittenhouse was recognized by the National Retail Foundation with the Silver Plaque Award for outstanding service in 1995 and was awarded the Roger Milliken Career Achievement Award by VICS for his "selfless efforts to promote and support UCC and VICS standards, as well as his participation in standards committee initiatives."

His experience and deftness of strategic thinking is valued outside of the retail industry as evidenced by his corporate board and committee seats currently held, including the Executive Committee and Chair of the Audit and Compensation Committees of Boardwalk Bank; the Board of Directors and Chairman of the Audit and Compensation Committees of StarCite, Inc., and the Board of Directors of Loftware, Inc. Mr. Rittenhouse formerly served as Chairman of the Board of Directors of the National Retail Federation Information Systems Division and was a member of the Board of Directors of Freedoms Foundation at Valley Forge. He is also active as Chair of the Board of Managers of Old Pine Community Center.

"As far as serving as a member of the External Advisory Board, I am at Dr. Trojanowski's service," says Mr. Rittenhouse. "However I can be of help in furthering support for aging research, be it through fundraising or helping to make connections between organizations or encouraging others to advocate for continued emphasis on the needs of older adults, I will be happy to do so."

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Awards and Honors

Membership in the American Society of Clinical Investigations and Penn Medicine Award of Excellence: Dr. Armstrong

Dr. Katrina Armstrong, Associate Professor in Epidemiology and in Medicine, was elected to membership of the American Society of Clinical Investigations (ASCI). The ASCI comprises physician-scientists elected to the Society for their outstanding records of scholarly achievement in biomedical research. Dr. Armstrong also received the Samuel Martin Health Evaluation Sciences Research Award for her research program that seeks to elucidate the complex relationships among the social environment, healthcare use, and health outcomes, particularly in the area of cancer control and outcomes.

President of Society for Computer Applications in Radiology: Dr. Langlotz

Dr. Curtis Langlotz, Associate Professor of Radiology and Epidemiology, was slected to a two-year term as President of the Society for Imaging Informatics in Medicine.

Faculty Master of Hill College House: Dr. Sochalski

Dr. Julie Sochalski, Associate Professor of Nursing, has been named Faculty Master of Hill College House for the 2006-2007 academic year. Faculty Masters are responsible for developing each College House as an educational resource for the University, promoting academic programs in residence, fostering faculty and student interaction, and building strong and supportive House communities.

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Awards and Honors

Ada Sue Hinshaw Award: Dr. Weaver

Dr. Terri E. Weaver, Associate Professor of Nursing and Chair of the Biobehavioral and Health Sciences Division, has been chosen to receive the Ada Sue Hinshaw Award from the Friends of the National Institute of Nursing Research. Named in honor of Ada Sue Hinshaw, PhD, RN, FAAN, the first permanent Director of NINR, the award is given annually to an individual whose research focuses attention on the significance of nursing research and improves health care.

Presidential Early Career Award, AGS Outstanding Scientific Achievement Award and Penn Medicine Award of Excellence in Research: Dr. Casarett

Dr. David Casarett, Assistant Professor of Medicine, Staff Physician and Medical Director of the palliative care service at the Philadelphia VA Medical Center, received a 2005 Presidential Early Career Award for Scientists and Engineers (PECASE). It is the highest honor bestowed by the U.S. government on outstanding scientists and engineers beginning their independent careers. Dr. Casarett also received the 2006 American Geriatric Society (AGS) Outstanding Scientific Achievement for Clinical Investigation, recognizing outstanding clinical research achievement by an investigator focused on the healthcare issues of older adults who also provides direct patient care. He was also awarded the Marjorie A. Bowman New Investigator Research Award, one of the Penn Medicine Awards of Excellence in Research, for his work in understanding and improving the way that patients near the end of life and their families make medical decisions.

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A Conversation with Dr. Daniel Weintraub

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female study populations. I also think that the added diversity of the Veteran population is helpful when trying to generalize research findings to the community at large.

IOA: Do the needs of those with Parkinson's disease (PD) or Alzheimer's disease (AD) who are suffering from depression differ from seniors with depression but with no neurodegenerative disease?

DW: I don't know that the needs of depressed PD or AD patients are in general different than elderly depressed patients without a neurodegenerative disease; I would say that their management of their depression can be different and at times more complex. For instance, patients with more advanced dementia may not be able to accurately identify or report their depressive symptoms, in which case the clinician needs to rely on an informed 'other' to report on the signs and symptoms of depression; this also makes it more unlikely for a person with moderate-advanced dementia to be able to participate in psychotherapy as a treatment for depression. Also, some symptoms of depression also happen to be core symptoms of certain neurodegenerative diseases, such as concentration problems in AD or psychomotor changes in PD, making it more difficult to diagnose depression at times. Although the efficacy of antidepressants have not been clearly established in neurodegenerative diseases, the pharmacologic management of depression in patients with one of these disorders is similar to that of the elderly population in general.

IOA: Can you share how you became interested in studying depression in those with neurodegenerative diseases like PD or AD?

DW: I found that depression was common in the PD and AD patients to whom I was providing clinical care, affecting up to 30-40% of patients in some form, so it seemed to be a significant problem. Although these diseases and depression in the context of these diseases are common, relatively little was known about the phenomenology and the optimal treatment of depression in these populations. It seemed like an opportunity to make a contribution to our knowledge base in these areas. Since coming to Penn, I have focused on conducting clinical and translational research on the epidemiology and treatment of psychiatric disorders in PD and AD.

IOA: As the population ages, how do you foresee geriatric psychiatry changing?

DW: One needed change is simply an increase in the number of geriatric psychiatrists or general psychiatrists who are trained to work with elderly patients. As the number of elderly persons will increase dramatically in coming decades, there clearly aren't enough psychiatrists willing and able to work with this population. I personally believe that psychiatry in general needs to be more closely integrated with the rest of medicine, and there is no better place to start than with geriatric psychiatry. The interface between psychiatry, medicine, and neurology is tremendous

in older patients, yet many barriers between these disciplines still exist, hindering our ability to better understand and treat psychiatric disorders in this age group. Also, there needs to be an increase in translational research, which I loosely define as the combination of clinical research with a study of the neurobiology of brain disorders, include neuroimaging, genetics, and clinicopathological studies.

IOA: It may be early to discuss this, but what do you hope to conclude or offer in the way of treatment suggestions from your National Institute of Mental Health-supported study, "Depression Diagnosis and Treatment in Parkinson's Disease"?

DW: As the data from this study have not been analyzed, and we are still in the midst of a placebo-controlled trial for the treatment of depression in PD that remains blinded, I can only offer what I hope we can learn from this study. We have already screened over 400 PD patients for depression and done a more detailed psychiatric, neuropsychological, and neurological assessment on approximately 50 depressed and 50 non-depressed patients. From this part of the study, I think that we can more definitively define the syndrome of depression in PD, including the most common constellation of symptoms and the characteristics of PD patients who are most likely to suffer from depression. This should help our ability to screen for and accurately diagnose depression in PD. We are conducting a randomized, double-blind, placebo-controlled study of atomoxetine (FDA-approved for the treatment of attention deficit disorder in adolescents and adults) for depression in PD. There are reasons to believe that it might have antidepressant properties, especially in a population such as PD. From this study we should be able to determine if there is preliminary evidence that atomoxetine has antidepressant properties in PD, which will ultimately provide useful information to clinicians who treat depression in PD and who are often disappointed with the outcomes when using traditional antidepressants.

Named Adjunct Assistant Professor: Dr. Jedrziewski

Dr. Kathryn Jedrziewski, Deputy Director of the IOA, has been appointed Adjunct Assistant Professor of Pathology & Laboratory Medicine.

From our Associate Fellows...

• Dr. Allen Glicksman, Director of Research and Evaluation at the Philadelphia Corporation for Aging, will receive the President's Award from the Eastern Pennsylvania Geriatrics Society on December 5th.

• Dr. Arthur Helfand has served as editor of two texts: *Foot Health Training Guide for Long Term Care Personnel* (October, 2006) and the second edition of *Public Health and Podiatric Medicine* (November, 2006) from the American Public Health Association.

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Awards and Honors

Ellison New Scholar in Aging: Dr. Giasson

Dr. Benoit Giasson, Assistant Professor of Pharmacology, was named a 2006 Ellison Medical Foundation New Scholar in Aging. New Scholar awards provide 4-year support for newly independent investigators in the first 3 years after their postdoctoral training to establish their own labs, collect preliminary data, and organize research programs so as to obtain ongoing support from other sources. Dr. Giasson will apply the support to the project "The role of Lrrk2 mutations and aging in causing Parkinson's disease and related disorders."

SGIM Outstanding Junior Investigator of the Year Award: Dr. Volpp

Dr. Kevin Volpp, Assistant Professor of Medicine and Health Care Systems at the Wharton School and the School of Medicine, received the Outstanding Junior Investigator of the Year Award from the Society for General Internal Medicine (SGIM). The award recognizes members at the level of Assistant Professor whose career achievements and body of work have had significant impact on research through sustained and consistent accomplishment.

WHO Task Force for the Global Patient Safety Challenge: Dr. McGuckin

Dr. Maryanne McGuckin, Senior Research Investigator and Adjunct Professor of General Internal Medicine, has been appointed to the World Health Organization (WHO) Task Force for the Global Patient Safety Challenge, tasked with ensuring that action occurs and expert consensus is achieved on a number of unresolved issues in relation to patient and public involvement in the prevention of health care-associated infection.

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SAVE THE EIGHTS: UPCOMING IOA SYMPOSIA

2007

save the eights

MARCH 8TH

Exploring Human-Animal Intersections: Converging Lines of Evidence in Comparative Models of Aging

Join us on March 8, 2007 at the new Vernon & Shirley Hill Pavilion Veterinary Medicine Teaching Research Building, located at 380 South University Avenue.

The IOA and the Penn School of Veterinary Medicine will present a full-day symposium to discuss areas where current aging research using animal models at the Penn School of Medicine and the Penn School of Veterinary Medicine intersects; where future research may continue through joint investigative efforts, and what the implications are for the study of aging and aging-related diseases for humans and animals as a result.

See pages 4-5 for more details. To register to attend, visit **www.med.upenn.edu/aging**. This event is free and open to the academic community.

MAY 8TH

Sylvan M. Cohen Annual Retreat with Poster Session on Aging: Convergence of Medicine and Nursing Research to Optimize Care for Older Adults

Author, healthcare historian, policy analyst, and epidemiologist, Rosemary A. Stevens, PhD, MPH, DeWitt Wallace Distinguished Scholar in the Department of Psychiatry at the Weill Medical College of Cornell University, will serve as the 2007 Sylvan M. Cohen Visiting Scholar. Penn Presenters David Casarett, MD, Assistant Professor of Medicine, Staff Physician and Medical Director of the palliative care service at the Philadelphia VA Medical Center, and Neville Strumpf, PhD, RN, Professor in Gerontology at the Penn School of Nursing, and Director of the Center for Gerontologic Nursing Science, will be discussing end-of-life and palliative care in "Nursing and Medicine: Collaboration in end-of-life research."

Posters are welcome from community groups and local universities, as well as from Penn faculty, researchers, staff, and students.

For more information on the IOA's 2007 Sylvan M. Cohen Annual Retreat with Poster Session and for registration details on presenting a poster, visit **www.med.upenn.edu/aging**.

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UNIVERSITY OF PENNSYLVANIA
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