

# THE SCIENCE OF AGING

WINTER 2015

featuring...

## VINCENT J. CRISTOFALO ANNUAL LECTURESHIP



On Wednesday, February 4, 2015, the Institute on Aging hosted its 2014 Vincent J. Cristofalo Annual Lectureship (originally scheduled for December 11, 2014). This year's keynote speaker was Alfred L. Goldberg, PhD, professor of Cell Biology, Harvard Medical School. During his lecture on "New Insights into Proteasome Function: From Destroying Misfolded Proteins to Disease Therapy," Dr. Goldberg discussed his lab's new advances in the elimination of damaged proteins that cause Alzheimer's disease and other dementias, as well as the new developments that suggest new approaches to treating such diseases.

The lectureship kicked off with a tribute to Dr. Vincent J. Cristofalo, a pioneer in aging research and the founder of the Center for the Study of Aging (now the IOA) at the University of Pennsylvania, by Robert J. Pignolo, MD, PhD, associate professor of medicine, Division of Geriatric Medicine, Hospital of the University of Pennsylvania and the Presbyterian Medical Center of Philadelphia. Immediately following the lecture and Q&A session, guests were invited to stay and enjoy light refreshments at the event's reception.

*"This annual tribute to Vincent J. Cristofalo is to acknowledge in perpetuity his contributions to aging research, his critical scientific thinking, as well as his commitment to mentees, colleagues, friends, and family."* - Robert J. Pignolo, MD, PhD

For more on this event recap, visit: [www.penninstituteonaging.wordpress.com](http://www.penninstituteonaging.wordpress.com)



Behind the Scenes of Penn's Udall Center for Parkinson's Research Virtual Tour Video

"Ice Bucket Challenge" Funds make a splash for one Penn researcher

Penn Medicine researchers receive funding from CDC to advance brain health

Recognizing Lewy Body Dementia vs. Alzheimer's disease and Parkinson's disease

Mark your calendars: Upcoming IOA Events



# The impact of the **ICE BUCKET CHALLENGE** makes a splash at Penn

In continuing coverage, we are pleased to hear that the impact from this summer's viral "Ice Bucket Challenge" for Amyotrophic lateral sclerosis (ALS) awareness is being felt here at Penn.

Penn Medicine's *James Shorter, PhD, associate professor of Biochemistry and Biophysics*, recently received a grant from the ALS Association and Muscular Dystrophy Association for his research aimed at finding a potential therapy for ALS, also known as Lou Gehrig's Disease.

The \$240,000 grant is a result of the millions of dollars raised from the Ice Bucket Challenge, as well as significant contributions from Major League Baseball (MLB)'s longtime commitment to ALS research.



With this grant, Shorter and his team plan to target and fragment the protein clumps that are known to occur in the nerve cells of people with ALS, enhance basic understanding of these clumps, and to determine whether targeting this process holds therapeutic potential.

For the full Penn Medicine news release, visit:  
[www.med.upenn.edu/aging/news.shtml](http://www.med.upenn.edu/aging/news.shtml)

*"Penn Medicine Biochemist Receives "Bucket Challenge" Funds to Study Biology of Lou Gehrig's Disease"*

## A CHOP-led Animal Study Points to a Treatment for Huntington's Disease.



Huntington's disease (HD), which affects nearly 30,000 Americans and is inherited usually in the beginning of midlife, is an incurable condition resulting in progressive loss of brain cells and motor functions. This disease stems from the repeated production of a mutated protein called huntingtin, or HTT, by a defective gene and causes involuntary movements as well as severe cognitive and emotional disruption.

According to a new study led by *Beverly L. Davidson, PhD, director of The Center for Cellular and Molecular Therapeutics at The Children's Hospital of Philadelphia (CHOP)*, adjusting the levels of a key signaling protein called "mTORC1," a protein that regulates cell growth and metabolism, just enough may improve motor function and brain abnormalities in HD patients as it has done in experimental animals with a form of the disease. Dr. Davidson calls it a "Goldilocks effect," explaining that adjusting the levels either too much or too little can be detrimental. This new study and the idea that adjusting or improving the protein levels may have a protective effect contradicts earlier assumptions that perhaps inhibiting or "shutting off" the mTORC1 pathway all together may help treat HD.

Dr. Davidson also explained how this new restorative process opens the door to the promising potential of treating other neurological diseases including Amyotrophic lateral sclerosis (ALS).

**For more information on the next steps of this study, visit:**  
[www.chop.edu/centers-programs/division-neurology/news](http://www.chop.edu/centers-programs/division-neurology/news)

*"CHOP-led Animal Study Points to a Treatment for Huntington's Disease"*  
Published January 5, 2015

## BEHIND THE SCENES

*A sneak peek into the filming of the*  
Udall Center for Parkinson's Research  
VIRTUAL TOUR VIDEO

The IOA kicked off the new year with a brand new project. Throughout the month of January, the IOA worked with Shoreline Productions, LLC to film our upcoming virtual tour of Penn's Udall Center for Parkinson's Research. The video will highlight the talented team of researchers, scientists, and Udall collaborators and the groundbreaking work being done here at Penn.

You will get a look into both the clinical and basic research that is at the foundation of our projects and how these investigators are working to improve and increase the level of education and research for this neurodegenerative disease.



*Coming Soon!*

## BECOME AN... IOA FELLOW

Learn more about becoming an IOA Fellow at:  
[www.med.upenn.edu/aging/fellows.shtml](http://www.med.upenn.edu/aging/fellows.shtml)

# what's new in AGING RESEARCH?

## INTRODUCING

### PENN'S HEALTHY BRAIN RESEARCH CENTER

As a result of two new grants totaling over \$860,000 from the Centers for Disease Control and Prevention (CDC)'s Special Interest Project, researchers from the University of Pennsylvania's Prevention Research Center (PRC) have now officially become collaborators of the CDC's "Healthy Brain Initiative Network," with their introduction of the new **Penn Healthy Brain Research Center**.

With the support of these new funds, the Penn Healthy Brain Research Center will work to advance research and service in cognitive health and healthy brain aging, and support doctoral and postdoctoral education and training in these areas. These efforts will include developing a course on the public health implications of cognitive aging for students within the Master's in Public Health program as well as the "Healthy Brain Initiative Scholars" program for doctoral and post-doctoral students whose research focuses on cognitive health, cognitive impairment, and Alzheimer's disease or dementia.

*"We are thrilled that the CDC selected our proposals for funding. The Healthy Brain Initiative is an important national effort to promote brain health for older Americans. These awards are a great opportunity for people of Philadelphia, the state and region, and will connect the many smart, talented and motivated leaders in Philadelphia and Pennsylvania with a national effort to promote brain health."*

- Jason Karlawish, MD, co-principal investigator, Penn Healthy Brain Research Center

For the full Penn Medicine news release, visit:  
[www.med.upenn.edu/aging/news.shtml](http://www.med.upenn.edu/aging/news.shtml)

*"Penn Medicine Researchers Receive Funding from CDC to Advance Brain Health"*

## RECOGNIZING LEWY BODY DEMENTIA vs ALZHEIMER'S DISEASE AND PARKINSON'S DISEASE

A recent PsychCentral article featuring Penn Medicine's **Howard Hurtig, MD**, Chair, Department of Neurology, Pennsylvania Hospital, discusses the importance of differentiating between the symptoms of Alzheimer's disease and its lesser-known cousin, Lewy Body Dementia (LBD).

*"While symptoms of LBD may be similar to Alzheimer's and Parkinson's disease, the treatment strategy is more challenging because fewer medications can be used safely,"* explains Dr. Hurtig. Some drugs that are prescribed for Alzheimer's disease can be very harmful to those with LBD so accurately diagnosing these conditions becomes increasingly important to ensure the patient is avoiding any medications that may worsen symptoms.

*See infographic on next page*

For more on this topic, visit our blog and search "LBD" at:  
[www.penninstituteonaging.wordpress.com](http://www.penninstituteonaging.wordpress.com)

## MARK YOUR CALENDARS

March 17, 2015: **Geriatric Syndromes**  
*Neil Resnick, MD*

March 31, 2015: **Is Cardiovascular Disease a Human Inevitability? Insights from the Bolivian Amazon**  
*Michael Gurven, PhD*

April 29, 2015: **Complex Care Issues in the Health of the Elderly**  
*Ann Marie Kolanowski, PhD, RN, FGSA, FAAN*

May 5, 2015: **The Sylvan M. Cohen 2015 Annual Institute on Aging Retreat**

### "Aging with Financial Security: Addressing the Challenges of Cognitive Aging and Impairment"

Tuesday, May 5, 2015 | 11:30AM - 5:00PM  
Smilow Center for Translational Research  
University of Pennsylvania

Participate in our Poster Session:

Submissions must include:

- Title
- Category (Basic Science, Clinical Research, or Education & Community)
- Your Affiliation
- Name of Authors and Presenter

Registration is required.

Register via email at [aging@mail.med.upenn.edu](mailto:aging@mail.med.upenn.edu), calling 215-898-7801, or online at:

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

More info at: [www.med.upenn.edu/aging/events.shtml](http://www.med.upenn.edu/aging/events.shtml)

## NEED MORE IOA NEWS?

Stay up-to-date on all of the latest aging-related news with our monthly e-newsletter!

Subscribe via email at:  
[aging@mail.med.upenn.edu](mailto:aging@mail.med.upenn.edu)

Institute on Aging  
3615 Chestnut Street  
Philadelphia, PA 19104-2676

NON PROFIT ORG.  
U.S. POSTAGE  
**PAID**  
PERMIT NO. 2563  
PHILA., PA 19104

### MAKE A GIFT

To support aging-related research and care at the Institute on Aging, please contact:

**Michael Sofolarides, Penn Medicine Development**  
msof@upenn.edu or 215-573-0187

Our sincere thanks to the IOA's generous donors and friends!  
Meet the members of the IOA External Advisory Board at:

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

### MANY THANKS!

### IOA TEAM

John Q. Trojanowski, MD, PhD  
Director

Nicolette Patete  
Digital Media Specialist

Steven E. Arnold, MD  
Associate Director

Ebony Fenderson  
Administrative Assistant

M. Kathryn Jedrzewski, PhD  
Deputy Director

Michael Sofolarides  
Penn Medicine Development

### EARLY DIFFERENTIATING SYMPTOMS

	LBD	AD	PD
Decline in thinking abilities that interferes with everyday life	Always	Always	Possible years after diagnosis
Significant memory loss	Possible	Always	Possible years after diagnosis
Decline in planning or problem-solving abilities	Likely	Possible	Possible
Difficulty with sense of direction or spatial relationships between objects	Likely	Possible	Possible
Language problems	Possible	Possible	Possible
Fluctuating cognitive abilities	Likely	Possible	Possible

Infographic courtesy of Lewy Body Dementia Association

### CONNECT WITH THE IOA



Facebook.com/pennaging



Twitter.com/pennaging



Youtube.com/penninstituteonaging



Penninstituteonaging.wordpress.com