

THE SCIENCE OF AGING

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The Institute on Aging's 2015

VINCENT J. CRISTOFALO ANNUAL LECTURESHIP



On Monday, October 26, 2015, the Institute on Aging hosted its annual Vincent J. Cristofalo Lectureship at the University of Pennsylvania. This year's topic, presented by keynote speaker Amy Wagers, PhD, Forst Family Professor of Stem Cell and Regenerative Biology at Harvard University, was *"Local and systemic regulators of tissue aging."*

Dr. Wagers' lab focuses on tissues and how they maintain themselves and regenerate throughout life as well demonstrating the changes in muscle function caused by age, as muscle tissue declines and is replaced with fat and fibrous tissue instead. Another research area they have explored is looking at how wiring of pathways change with age and the factors that regulate satellite cell aging.

With that said, one major goal of Dr. Wagers' lab is to uncover whether or not there are regulators of muscle tissue function found in the blood. In collaboration with an outside contractor, they were able to discover growth factors present in the bloodstream of old and young mice leading to the identification of proteins GDF8 and GDF11 as essential in the development of, or lack of, muscle tissue.

After initially testing on cows, Dr. Wagers and her colleagues moved to a mouse model. They injected raised levels of GDF11 in old mice to equal the amount of tissue that they would have had as young mice and observed a reduction in heart size, remodeling or skeletal fibers, improved muscle repair activity

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and genomic activity, increased neural stem cells and improvement in blood flow and vasculature as well as improved grip strength and exercise endurance ability. These results showed that the loss of the protein GDF11 could not only lead to declining function in muscle tissue, but in many other tissues of the body as well.

With this in mind, we can determine that aging clearly has an effect on muscle, both local and systemic. Fully understanding its regenerative potential may lead to therapeutic targets for future medications and therapies aiming to stop or slow the process of tissue aging.

"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."*

For more information, visit:
www.med.upenn.edu/aging/cristofalo-lectureship.html

* Vincent J. Cristofalo, PhD was an expert in cellular aging and the founder of the Center for the Study of Aging, now the Institute on Aging (IOA), at the University of Pennsylvania.

Left photo: Keynote speaker, Dr. Amy Wagers with Penn Medicine's Brad F. Johnson, MD, PhD, IOA Fellow and associate professor of Pathology and Laboratory Medicine, and his colleagues.



Right photo: Dr. Wagers with John Q. Trojanowski, MD, PhD (IOA Director), Robert J. Pignolo, MD, PhD, associate professor of Medicine at the Hospital of the University of Pennsylvania and the family of Vincent J. Cristofalo.



Meet Perry Clark, New IOA External Advisory Board Chair



Left to right: Kathy Jedrzewski, PhD (IOA Deputy Director), Virginia M.-Y. Lee, PhD, MBA, John Q. Trojanowski, MD, PhD (IOA Director), Orien Reid Nix (Former IOA EAB Chair), Elaine Clark, and Perry Clark.

“One of my husband’s favorite sayings is, “everything has a shelf life, and you have to know when that shelf life is over,” said **Orien Reid Nix**, former Institute on Aging (IOA) External Advisory Board (EAB) Chair. After a little over five years as Chair, she has decided to step down, explaining that she feels that her “shelf life” as Chair has simply come to an end. While she will still remain involved with the IOA EAB, her responsibilities in her personal life will need to take precedent over her responsibilities as Chair.

In an essentially seamless transition, dedicated IOA EAB member **Perry Clark** will resume the position as Chair. The decision was announced at the IOA’s recent Fall 2015 External Advisory Board meeting, a meeting that is held two times per year. Mr. Clark graciously opened the meeting with thanks to all of the IOA staff, collaborators, and his fellow EAB members. He explained that his goal as IOA EAB Chair is to help other members become more engaged with supporting the mission of the IOA and to serve as a facilitator for communication between the EAB members and the IOA administrators. He will also continue to do

everything that he can to “increase public awareness of the work of the IOA and philanthropic support for that work.”

Perry Clark has been a member of the IOA EAB since 2013 after having the opportunity to meet with IOA Director, **John Q. Trojanowski, MD, PhD** and his wife, Center for Neurodegenerative Disease Research (CNDR) Director, **Virginia M.-Y. Lee, PhD, MBA**, following the loss of his sister to early-onset Alzheimer’s disease years prior. “In response to that, my wife and I resolved that we should do what we could to support research into neurodegenerative diseases. That is the reason that we volunteered to participate in research studies at Boston University. Our involvement with the External Advisory Board is an extension of our advocacy for increased funding for the development of treatments for these diseases,” he explained.

Perry Clark dedicates a great deal of his time to giving presentations in his home state of Maine on Alzheimer’s disease and related topics. He has covered topics on Alzheimer’s pathology, risk factors, and incidence, as well as the goal and significance of research studies, current clinical trials, brain health, and the importance of increased research funding and how this will lead to quicker development of therapies for Alzheimer’s and other neurodegenerative diseases.

More at: www.penninstituteonaging.wordpress.com

Purposely Planning Your Encore Career



“You are never too old to set another goal or to dream a new dream.” - C.S. Lewis

The term “retirement” is one that can induce a slew of different emotions. Some individuals look forward to the day that they can leave the working world and the hours of unavoidable labor behind them while others dread the thought of closing that chapter of their lives. With this in mind, **Willo Carey**, Manager of Donor Relations at WHY? and IOA EAB member,

focuses a great deal of her world around encouraging others to take advantage of this “second half of life” and to use it as an opportunity to explore something new. Back in October, the Division of Human Resources and the Institute on Aging at the University of Pennsylvania welcomed Willo to present “Purposely Planning Your Encore (Retirement) Career” exclusively to Penn faculty and staff. Her talk focused on changing the way we think about retirement — rather than considering it the end of our career, we can think about it as the start of our new calling, or our “encore.” So many people put their true passions or interests on hold while they are busy focusing on their careers. “Retirement years” give individuals the chance to revisit these things, to discover who they really are outside of their job title, and to find true fulfillment in their new daily routines.

More at: www.penninstituteonaging.wordpress.com

Retiring soon? Tell us your plans!

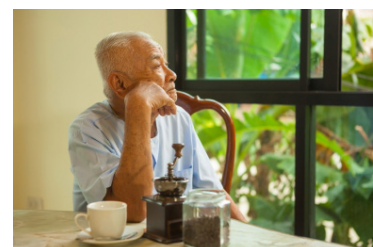
If you are a Penn employee who has started to think about your “encore career” and would like to share your plans with us for an upcoming video series, please contact IOA Digital Media Specialist, Nicolette Patete, for more information at:

npatete@upenn.edu

Image credit: StuartMiles via Freedigitalimages.net

“THE AGING PROBLEM WE DON’T TALK ABOUT”

SHOULD LONELINESS AMONG OLDER ADULTS BE CONSIDERED A PUBLIC HEALTH ISSUE?



In a recent article, *Next Avenue*, a national service for America’s 50+ population, shined a light on a common aging problem that tends to be ignored—loneliness. According to the article, The Campaign to End Loneliness, a London-based charity working to address this problem, estimates that one million citizens in the UK suffer from feelings of isolation and points to research to defend their

position that it should in fact be considered a public health issue. It not only affects us mentally, but physically as well, often impacting other health conditions. “The reality is that loneliness and isolation are both a metaphysical disruption - we are social beings and thrive with true connections to others - and a health problem. Increasing evidence points to an association of strong social connections with both increased well being in later life and longevity,” explained **Sarah H. Kagan, PhD, RN**, professor of Gerontological Nursing at the University of Pennsylvania.

Dr. Kagan often addresses issues similar to this in her column on “Myths of Aging.” She stresses the idea that happiness among older adults tends to be significantly higher in those who maintain healthy social relationships, and at a population level, these individuals with closer relationships tend to live longer. Essentially, this is the central mission of her work—to help the aging community not only to live longer, but to live happier and healthier as well.

Image credit: WitthayaPhonsawat via Freedigitalimages.net

For more, visit: www.penninstituteonaging.wordpress.com

Adults with OCD Can Benefit from Exposure Therapy When Common Drug Treatment Options Fail, Penn Study Finds

Patients with Obsessive-Compulsive Disorder (OCD) can improve their symptoms significantly by adding exposure and response prevention therapy to their treatment regimen when common drug treatment options have failed, according to new research from psychiatrists at the Perelman School of Medicine at the University of Pennsylvania. Exposure and response prevention therapy is a type of cognitive behavior therapy in which the patient is asked to confront triggers that give rise to their obsessions in order to refrain from performing the rituals in response to these obsessions.

“We know that exposure and response prevention therapy (EX/RP) can benefit these patients,” said lead author, **Carmen McLean, PhD**, an assistant professor of clinical psychology in the department of Psychiatry at the Center for the Treatment and Study of Anxiety at Penn. “But this study showed that EX/RP is also effective for OCD sufferers who do not benefit sufficiently from common drug treatments for OCD.”

A previous study compared the effects of adding risperidone, pill placebo, and up to 17 twice-weekly therapist-led sessions of EX/RP to medication for OCD. “We found compared to patients who received medication or placebo, those who received EX/RP showed significantly more reductions in OCD symptoms and depression, as well as significantly more increases in insight, quality of life, and social function after only eight weeks,” McLean said.

The current study included 32 patients who crossed over to receive 17 weeks of EX/RP treatment after not benefiting sufficiently from risperidone. Evaluation at 12 and 16 weeks showed significant symptom improvement, with 25 (78 percent) of patients completing treatment; 17 (53 percent) of them were classified as treatment responders and 11 (34 percent) classified as excellent responders at a 32-week follow-up evaluation. The remaining patients required medication changes during the follow-up period, which enabled them to shift to excellent-responder status.

This study adds to the large body of research that shows the benefits of exposure therapy for patients with OCD. “We want patients to know that there is another option, if common drug treatments have failed them,” explained senior author, Edna Foa, PhD, professor of Clinical Psychology in the department of Psychiatry and director of the Center for the Treatment and Study of Anxiety at Penn and the creator of exposure therapy. “The therapy can be life-saving, if patients are aware of it.”

For more aging-related Penn Medicine News Releases, visit: www.med.upenn.edu/aging/news.html

“Could Sleep Be the Missing Link in Dementia? | The Next Hot Topic in Alzheimer’s Research

“Scientists already have documented connections between sleep loss and memory problems, which explains why many schools are starting classes later. But a growing body of research is exploring links among sleep deprivation, sleep disturbance and Alzheimer’s disease, the most common form of dementia,” according to a recent Chicago Tribune article on the link between sleep and Alzheimer’s disease (AD).

While researchers are still exploring whether poor sleep causes AD or is only a symptom of the disease, Penn Medicine’s **Sigrud Veasey, MD**, professor of medicine at University of Pennsylvania’s Center for Sleep and Circadian Neurobiology says that there is strong evidence to support the theory that Alzheimer’s can be worsened by sleep deprivation. “We don’t yet believe that sleep loss causes Alzheimer’s,” explained Veasey, “but if you were predisposed to get it at 85, it’s possible that sleep disturbance might make it likelier that you would get it much earlier, at age 65 or 75.”

For the full Chicago Tribune article, visit: www.chicagotribune.com

Save the date: **June 8, 2016**

Dr. Veasey and her colleagues are among the speakers lined up for this year’s IOA Sylvan M. Cohen Annual Retreat titled “To sleep, per chance to age... (and avoid Alzheimer’s disease).” Joining them will be David M. Holtzman, MD, professor and chairman of the Department of Neurology, Washington University School of Medicine.

For more information, visit: www.med.upenn.edu/aging/annualretreat.html

what's new in
... aging
research?

Institute on Aging
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Upcoming Events :

Next: January 5, 2016 @ 2:00pm | James L. Kirkland, MD, PhD | Smilow Center
Topic: Interventions Targeting Fundamental Aging Processes: The Path to Translation

January 21, 2016 @ 3:00pm
Fran Grodstein, ScD

Alzheimer's Prevention Research Approaches
Smilow Center for Translational Research

March 1, 2016 @ 2:30pm
Pignolo Award in Aging Research
Bruce A. Yankner, MD, PhD

Smilow Center for Translational Research

** Talk topics are subject to change closer to event date.*

More info at: www.med.upenn.edu/aging/events.html

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Elizabeth Yannes, Penn Medicine Development

elyannes@upenn.edu or 215-573-4961

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The mission of the Institute on Aging 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 aging-related diseases across the entire Penn campus.

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