

For Immediate Release

Contact: John Chaich
john@afar.org

JAMES L. KIRKLAND, MD, PHD, AND SEAN CURRAN, PHD, HONORED FOR THEIR OUTSTANDING CONTRIBUTIONS TO AGING RESEARCH

New York, NY – The American Federation for Aging Research (AFAR), a national non-profit organization whose mission is to support and advance healthy aging through biomedical research, is proud to recognize the outstanding contributions of James L. Kirkland, MD, PhD, and Sean Curran, PhD, to the field of aging research through its 2020 Scientific Awards of Distinction.



James L. Kirkland, MD, PhD, will receive the Irving S. Wright Award of Distinction.

This award is named in honor of AFAR's founder and recognizes exceptional contributions to basic or clinical research in the field of aging. Established in 1982, the award is a framed citation and carries a cash prize of \$5,000. At the Mayo Clinic, Dr. Kirkland is the Director of the Robert and Arlene Kogod Center on Aging and Noaber Foundation Professor of Aging Research. He is AFAR's President-Elect. Dr. Kirkland also received the esteemed Glenn Foundation for Medical Research Breakthroughs in Gerontology (BIG) Award in 2012.



Sean Curran, PhD, will receive the Vincent Cristofalo Rising Star Award in Aging Research.

This award is named in honor of the late Dr. Cristofalo, who dedicated his career to aging research and to encouraging young scientists to investigate important problems in the biology of aging. Established in 2008, the award is a framed citation and carries a cash prize of \$5,000. At the University of Southern California Leonard Davis School of Gerontology, Dr. Curran is an Associate Professor of Gerontology, Molecular and Computational Biology and the Associate Dean of Research. Dr. Curran received an Glenn/AFAR Research in the Biology of Aging award in 2009 and an AFAR Research Grant in 2013.

"These awards are given annually to members of the aging research community whose work advances both the field and our understanding of aging," notes AFAR Executive Director Stephanie Lederman, EdM. "Both awards are named in honor of farsighted scientists, and the recipients are chosen for their vision and accomplishments as well."

Nominations for the awards are by invitation, and are judged by an independent panel of leading aging researchers. To date, AFAR has presented forty-one Irving Wright Awards and thirteen Vincent Cristofalo Awards.

In addition to these honorary awards of distinction, AFAR supports the field of aging research through its biology of aging and physician training grant programs. To date, AFAR's grant programs have contributed more than \$181 million to the field of aging research, by supporting more than 4,200 investigators and students.

The Awards will be presented at the Annual Meeting of the Gerontological Society of American in 2020, where Dr. Kirkland and Dr. Curran will also give lectures about their award-winning research.

About the Awardees

James L. Kirkland, MD, PhD: 2020 Irving S. Wright Award | James L. Kirkland, MD, PhD, is the Director of the Robert and Arlene Kogod Center on Aging at Mayo Clinic and Noaber Foundation Professor of Aging Research. Dr. Kirkland's research focuses on cellular senescence, age-related adipose tissue and metabolic dysfunction, and development of agents and strategies for targeting fundamental aging mechanisms to treat age-related chronic diseases and disabilities and to extend healthspan. He published the first article about drugs that clear senescent cells, senolytic agents. A novel, mechanism-based, hypothesis-driven drug development paradigm was used to discover senolytic drugs. Based on the observation that senescent cells release factors that cause apoptosis of the cells around them, yet are themselves resistant to apoptosis, Dr. Kirkland hypothesized that senescent cells utilize senescent cell anti-apoptotic pathways (SCAPs) for protection from their own senescence-associated secretory phenotype (SASP). Using bioinformatics analyses of senescent vs. non-senescent cells and RNA interference, Dr. Kirkland identified these SCAPs and verified their importance for senescent cell survival. Dr. Kirkland used bioinformatics approaches to identify agents that target key nodes across the SCAP network and demonstrated these drugs are senolytic in rodent and human cultured cells and mice *in vivo*. These senolytic drugs include Dasatinib (D), Quercetin (Q), Fisetin, Navitoclax, and related compounds. Dr. Kirkland showed these agents delay, prevent, or alleviate multiple disorders in mouse models of human chronic diseases and aging phenotypes. Conditions alleviated in mouse models include frailty, diabetes, hepatic steatosis, cirrhosis, renal dysfunction, neuropsychiatric disorders, dementias, pulmonary fibrosis, osteoporosis, osteoarthritis, retinal degeneration, diastolic dysfunction, cardiac ischemia, vascular hyporeactivity, infertility, and skin disorders, among others. He demonstrated that intermittent, orally administered senolytics reduce senescent cell abundance in adipose tissue and blood markers of senescent cell burden in blood of patients with diabetic kidney disease. He and collaborators found that a brief course of senolytics enhances physical function and reduces frailty in patients with idiopathic pulmonary fibrosis, a fatal, cellular-senescence-driven disease for which available treatments have been unsatisfactory. Multiple clinical trials are currently underway of the senolytics that Dr. Kirkland discovered. He is a scientific advisory board member for several companies and academic organizations. In addition to being President-Elect of AFAR, he has been a member of the National Advisory Council on Aging of the National Institutes of Health, and past chair of the Biological Sciences Section of the Gerontological Society of America. He holds honorary appointments at Boston University and the University of Groningen in the Netherlands. He is a board-certified specialist in internal medicine, geriatrics, and endocrinology and metabolism.

Sean Curran, PhD: 2020 Vincent Cristofalo Rising Star Award in Aging Research | Sean Curran, PhD, is an Associate Professor of Gerontology, Molecular and Computational Biology, the Associate Dean of Research, and Director of the Biology of Aging PhD program at the University of Southern California Leonard Davis School of Gerontology. In these roles, he facilitates training of junior scientists providing them resources, career development opportunities and mentoring. For these efforts, he has been recognized by the Mellon Foundation for excellence in Mentoring and received the USC's Provost's Mentoring Award. The primary objective of his research group is to define the molecular mechanisms utilized by novel homeostatic pathways, which influence animal physiology, metabolism, and ultimately lifespan. His research group utilizes a multidisciplinary approach that combines genetics, functional genomics, biochemistry, cell and molecular biology, and physiology to comprehensively study the complexities of the universal process of metabolism across the lifespan. His team illustrates how single genes – particularly genes that integrate diet availability and composition – function to modulate organismal homeostasis spatially (in specific cells) and temporally (from development through senescence). His research goal is to understand the molecules, genes, and cells that impact health over the lifespan and influence age-related diseases such as cancer, diabetes, obesity, and frailty. In doing so, Dr. Curran has characterized numerous single gene mutations that can influence the rate of aging and the development of these age-related conditions. Through genetic studies in *C. elegans*, his team has uncovered novel regulatory pathways for cellular and organismal homeostasis. These responses are central to maintaining health across the lifespan as animals deal with the changing environment; particularly diet, stress, and toxin exposure, which he has found alter biosynthetic capacity and metabolism. Dr. Curran discovered that these pathways are conserved in humans and mice. As such, his findings will impact the development of therapies to reduce the prevalence and progression of multiple types of human disease that occur with age.

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About AFAR

The American Federation for Aging Research (AFAR) is a national non-profit organization that supports and advances pioneering biomedical research that is revolutionizing how we live healthier and longer. For nearly four decades, AFAR has served as the field's talent incubator, providing more than \$181 million to more than 4,200 investigators at premier research institutions nationwide. A trusted leader and strategist, AFAR also works with public and private funders to steer high quality grant programs and interdisciplinary research networks. AFAR-funded researchers are finding that modifying basic cellular processes can delay—or even prevent—many chronic diseases, often at the same time. They are discovering that it is never too late—or too early—to improve health. This groundbreaking science is paving the way for innovative new therapies that promise to improve and extend our quality of life—at any age. Learn more at www.afar.org or follow AFARorg on Twitter and Facebook.