

The 2020 Harvard / Paul F. Glenn

# Symposium on Aging

May 18, 2020

GLENN FOUNDATION  
FOR MEDICAL RESEARCH



BLAVATNIK INSTITUTE  
HARVARD MEDICAL SCHOOL

## The Paul F. Glenn Center for the Biology of Aging Research

Welcome to the 15th Annual Harvard/Paul F. Glenn Symposium on Aging. Each year, the Paul F. Glenn Center for Biology of Aging Research hosts the Harvard Symposium on Aging with a mission to present new advances in aging research and to stimulate collaborative research in this area. The symposium has grown over the years to be a major forum for aging research at Harvard Medical School.

We wish to acknowledge the generosity and vision of Paul F. Glenn, Leonard Judson and Mark Collins for their unwavering support of aging research through the Glenn Foundation for Medical Research. Thanks to their support, we now have a vibrant community of researchers who study aging and age-related diseases at Harvard Medical School.

The reasons for accelerating research into the molecular biology of aging are clear. First and foremost, the number of aged individuals in developed countries is growing rapidly, which will place an unprecedented burden on the social fabric and economic infrastructure. Because chronic illness in the elderly is a major medical cost, enormous savings would be achieved if the healthy lifespan were extended through a greater understanding of age-related diseases. A study by the RAND Corporation concluded that advances in medicine arising from aging research would be one of the most cost-effective approaches to age-related disease. Advances in aging research have shown that it is possible to extend the healthy lifespan of laboratory animals. A greater understanding of age-related biological processes might lead to novel therapeutic approaches to the diseases of aging, such as diabetes, cancer, Alzheimer's and heart disease.

On behalf of The Paul F. Glenn Center for Biology of Aging Research and Harvard Medical School, we welcome you to the 2020 15th Annual Harvard/Paul F. Glenn Symposium on Aging.

David Sinclair and Bruce Yankner  
Co-Directors, Paul F. Glenn Center for Biology of Aging Research

## Symposium on Aging Agenda

May 18, 2020  
1:00 PM - 5:00 PM

1:00 PM	<b>Welcome</b>
1:15 PM	David A. Sinclair, Ph.D. Harvard Medical School
2:00 PM	Irina Conboy, Ph.D. UC Berkeley
2:45 PM	Stephen J. Elledge, Ph.D. Harvard Medical School
3:30 PM	David M. Sabatini, M.D. Whitehead Institute for Biomedical Research
4:15 PM	Public Social

## David A. Sinclair, PhD, AO

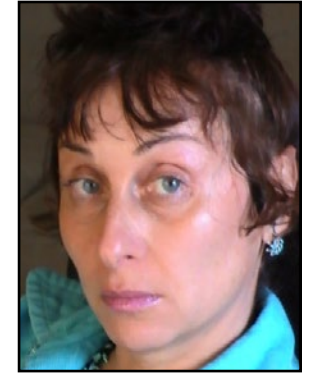


David A. Sinclair, Ph.D., A.O. is a Professor in the Department of Genetics, Blavatnik Institute, and co-Director of the Paul F. Glenn Center for Biology of Aging Research at Harvard Medical School. He is best known for his work on understanding why we age and how to slow its effects. He obtained his Ph.D. in Molecular Genetics at the University of New South Wales, Sydney, in 1995. He worked as a postdoctoral researcher at M.I.T. with Dr. Leonard Guarente where he co discovered a cause of aging for yeast

as well as the role of Sir2 in epigenetic changes driven by genome instability and aging. In 1999 he moved to Harvard Medical School and has primarily focused on understanding why we age and the role of protective enzymes called the sirtuins, which respond to changing NAD<sup>+</sup> levels, exercise, and caloric restriction (CR). His interests include chromatin, energy metabolism, mitochondria, epigenetic reprogramming, exercise, learning and memory, neurodegeneration, and cancer. The Sinclair lab was the first to identify a role for NAD biosynthesis in regulation of lifespan and first showed that sirtuins are involved in CR's benefits in mammals. Recently, the lab has focused on epigenetic changes as a driver of aging and the use of reprogramming factors to reset the age of cells and tissues.

He is a New York Times bestselling author for *Lifespan* (2019), has published over 200 scientific papers, is a co-inventor on over 50 patents, and has co-founded a dozen biotechnology companies in the areas of aging, vaccines, diabetes, fertility, cancer, and biodefense. He serves as co-chief editor of the scientific journal *Aging*, works with national defense agencies and with NASA and has received 35 honors including the Australian Medical Research Medal, the Irving Wright Award, the NIH Director's Pioneer award, TIME magazine's list of the "100 most influential people in the world" and the "Top 50 people in Healthcare".

## Irina Conboy, PhD



Irina Conboy, PhD (Stanford University, 1998) is Professor of Bioengineering, UC Berkeley, QB3(UCB/UCSF/UCSC) core faculty member and Core Member of UCB/UCSF Graduate Program. A key direction of her laboratory is to understand age-imposed and pathological changes in signaling networks that regulate tissue maintenance and repair and to calibrate these to healthy states. In the past few years this direction has been ramified synthetic biology and innovative digital biosensors for diagnostics

of age-imposed alterations and for assessing the response to treatments longitudinally, in real time. Overall, success in this research will improve our understanding of the determinants of homeostatic health and will enable novel rational approaches to treat a number of pathologies that range from tissue degeneration to cancer and include novel ways to avoid and diminish fibrosis and inflammation. Prof. Conboy received numerous awards for her work in Aging field, including Silicon Valley Foundation Award for clinical translation of aging research, Open Philanthropy Award, Packer endowment for Aging research, Raymond and Beverly Sackler TAU Award, Calico Award, Bridging the Gap, Rogers' Award, SENS Foundation and Life Extension Foundation, W.M. Keck Foundation Award, Glenn Award for Research in Biological Mechanisms of Aging, Stem Cell Research Foundation Award, Ellison's Medical Foundation New Scholar in Aging award, and NIH National Research Service Award.

**Informational noise as a conserved cause of aging.**

**Preventing, Attenuating and Reversing Age-imposed Diseases, as a Class**

## Stephen J. Elledge, PhD



Stephen J. Elledge is the Gregor Mendel Professor of Genetics and Medicine in the Department of Genetics at Harvard Medical School and the Department of Medicine at Brigham's and Women's Hospital and is an Investigator with the Howard Hughes Medical Institute. He was born in the small farming community of Paris, Illinois in 1956. He received his B.S. degree in Chemistry, graduating summa cum laude from the University of Illinois in 1978. He received his Ph.D. degree in Biology from the Massachusetts Institute of Technology in 1983

where he worked with Dr. Graham Walker and isolated the genes for the first translesion DNA polymerase, UmuCD. He performed post-doctoral studies in the Department of Biochemistry at Stanford University with Dr. Ronald Davis where he discovered a replication stress response pathway now known as the DNA damage response. He joined the faculty of the Baylor College of Medicine in 1989 in the Department of Biochemistry and remained there for 14 years until moving to Harvard Medical School in 2003 where he has developed genetic technologies applied to human immunology, the DNA damage response and the understanding of protein stability.

Dr. Elledge became an HHMI in 1993 and has received a number of awards for his work. He was awarded the American Association of Cancer Research G.H.A. Clowes Memorial Award in 2001, the Paul Mark's Prize in Cancer Research in 2001, and the National Academy of Sciences Award in Molecular Biology in 2002. He was elected to the National Academy of Sciences and the American Academy of Arts and Sciences in 2003. He was awarded the Genetics Society of America Medal and the Hans Sigrist International Prize in 2005. In 2006 he was elected to the National Academy of Medicine. He received the Gairdner Foundation International Award in 2013. He was the 2015 recipient of the Wiley Prize and the Albert Lasker Prize in basic Medicine. In December 2016, he received the Breakthrough Prize in Life Sciences. He is currently the Gregor Mendel Professor of Genetics and Medicine at Harvard Medical School.

**SASP: Friend or Foe?**

## David Sabatini, MD



David Sabatini is a Member of the Whitehead Institute for Biomedical Research, and a Professor of Biology at the Massachusetts Institute of Technology. He is also an Investigator of the Howard Hughes Medical Institute, a Senior Associate Member at the Broad Institute, a member of the Koch Institute for Integrative Cancer Research, and an American Cancer Society Research Professor

David and his lab study the basic mechanisms that regulate cell growth. A major focus of the lab is the Target of Rapamycin (TOR) pathway, a major regulator of growth in many eukaryotic species. This has resulted in the identification of many components of the pathway and to an understanding of their cellular and organismal functions, most of which have implications for diseases such as cancer and diabetes. David is also interested in the role of metabolism in cancer and in the mechanisms that control the effects of dietary restriction on tumorigenesis. Additionally, his lab has developed new technologies that facilitate the analysis of gene function in mammalian cells.

**mTOR and Lysosomes in Growth Control**







## Nearby locations for lunch:

### 1. Elements Café

located at Harvard Medical School, New Research Building

### 2. Bertucci's

(at Children's), 1 Blackfan Circle (Exit rear of Harvard Medical School)

### 3. Galleria Longwood Food Court

342 Longwood Avenue

