PRESS RELEASE

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NUS Medicine and Albert Einstein College of Medicine Institute for Aging Research announce research collaboration

Shared strategies will be employed to extend human healthspan

Singapore, 22 August 2017 — In developed countries throughout the world, the number of people over the age of 65 is increasing dramatically. Old age is now recognised as the most significant risk factor for a range of chronic diseases (including Alzheimer's, cancer, diabetes and cardiovascular disease), which together are the main drivers of rising healthcare costs. Novel approaches are needed to slow ageing and extend human healthspan, the period of life when one is healthy and free from serious disease.

The Centre for Healthy Ageing at the National University Health System (NUHS) is committed to finding strategies to keep the Singapore population healthy, longer. The Institute for Aging Research at Albert Einstein College of Medicine (Einstein) in New York has a similar goal and is launching a clinical trial to test a drug they hope will keep people healthy and delay or prevent multiple chronic diseases simultaneously. After discussion, the two Institutes have signed a Memorandum of Understanding, designed to facilitate knowledge sharing and collaboration as they seek to combat the ravages of ageing.

Professor Brian Kennedy, director of the NUHS Centre for Healthy Ageing, expressed excitement over the agreement, stating that "the Institute for Aging Research at Einstein is a global leader in the effort to understand and delay human ageing. By working closely together, we can accelerate our collective efforts to improve life quality with ageing and offset the biggest medical challenge of this century."

Dr Nir Barzilai, director of the Institute for Aging Research at Einstein is leading a groundbreaking clinical trial to determine if the drug metformin, which extends lifespan in animal models and is safely used to treat type II diabetes, can extend human healthspan. The NUHS Centre for Healthy Ageing will perform similar studies to see if potential longevity drugs extend healthy life. By comparing data, it will be possible to see whether aging interventions have similar outcomes in different ethnicities.

"A problem as big as aging requires a global effort," said Dr Barzilai. "Since Singapore is a forward-looking country, it is exciting to have experts there on board. "Their progressive mindset toward healthcare can easily be applied to extending human healthspan."

Investigators at the Institute for Aging Research and NUS Medicine will participate in joint meetings and training programmes and also share experimental strategies and outcomes for

key clinical studies. Collaboration is a fundamental aspect of successful research and NUS Medicine has made a major step forward in ageing studies with this agreement.

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About the National University of Singapore (NUS)

A leading global university centred in Asia, the National University of Singapore (NUS) is Singapore's flagship university, which offers a global approach to education and research, with a focus on Asian perspectives and expertise.

NUS has 17 faculties and schools across three campuses. Its transformative education includes a broad-based curriculum underscored by multi-disciplinary courses and cross-faculty enrichment. Over 38,000 students from 100 countries enrich the community with their diverse social and cultural perspectives. NUS also strives to create a supportive and innovative environment to promote creative enterprise within its community.

NUS takes an integrated and multi-disciplinary approach to research, working with partners from industry, government and academia, to address crucial and complex issues relevant to Asia and the world. Researchers in NUS' Schools and Faculties, 30 university-level research institutes and centres, and Research Centres of Excellence cover a wide range of themes including: energy, environmental and urban sustainability; treatment and prevention of diseases common among Asians; active ageing; advanced materials; risk management and resilience of financial systems. The University's latest research focus is to use data sciences, optimisation research and cybersecurity to support Singapore's Smart Nation initiative.

For more information on NUS, please visit www.nus.edu.sg.

About the Institute for Aging Research at Einstein (E-IAR):

Since 2005 and in over 50 labs, Einstein's Institute for Aging Research conducts focused, multidisciplinary investigations to unravel essential elements in the biology of aging. It oversees two centers of excellence: The Paul F. Glenn Center for the Biology of Human Aging, which is the first center for research exclusively focused on the biology of human aging, and the NIA-funded Nathan Shock Center of Excellence in the Basic Biology of Aging. In addition, E-IAR faculty members offers a course on the biology of aging, and manages a T32 training grant in the field.

E-IAR is helping investigators at Einstein and across the world by providing core services given under the auspices of E-NSC:

1) Proteostasis of Aging Core (Director AM Cuervo MD PhD). Provides investigators with tools, assays and expertise for the analysis of changes in cellular protein homeostasis that occur with age and in age-related diseases.
2) Chronobiosis, Energetics/Metabolism of Aging Core (N Barzilai MD/D Huffman PhD). Provides sophisticated integrative studies for determination of 'healthy aging' physiology and now provides resources for chronobiosis studies.
3) Advanced Genomics of Aging Core (J Vijg PhD).Offers services for planning and executing epi/genomics analyses, in particular, of single cell or few cells to address s important problems in biology of aging research.

Areas of Emphasis at E-IAR include: The Longevity Genes Project & LonGenity, Mechanisms for Cellular Aging, Molecular Basis of Immunosenescence, IGF-1 and Insulin Signaling Pathways in Aging, Integrative System Physiology, Sirtuins in Aging, Molecular Genetics of Aging, Biology of aging in humans exposed to ageing targeting drugs. Program Projects at Einstein include: Functional Consequences of Impaired Autophagy in Aging, DNA Repair, Mutations, and Cellular Aging, Mechanisms and Strategies to Prevent the Metabolic Syndrome of Aging, Roles of Genes in Exceptional Longevity in Humans, Cognitive Function in Aging and Genes resilience to Alzheimer's, Mobility Biology & Intervention Studies.