

Potocsnak Longevity Institute

Northwestern University Feinberg School of Medicine



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Introduction

There are complex biological changes associated with aging that affect nearly every aspect of a person's health, yet not all of us are affected in the same way. Through the new Potocsnak Longevity Institute, Northwestern scientists and experts across disciplines are studying populations that seem resistant to some of the negative consequences of aging in an attempt to figure out exactly what makes them different.



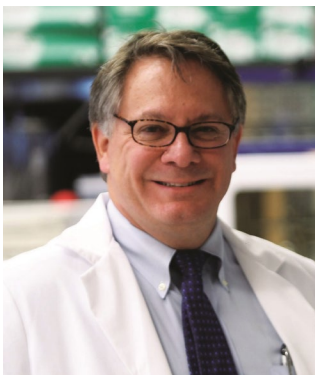
The new Potocsnak Longevity Institute, funded by a generous gift from Chicago industrialist John Potocsnak and family, is aiming to extend the human “healthspan” and will address the period of life when people are at the greatest risk for aging-related comorbidities—arthritis, dementia, heart disease, diabetes, aging-related cancer, hypertension, and frailty. With the leadership of Director Douglas E. Vaughan, MD, and Associate Director Frank Palella, MD, this institute at Northwestern University Feinberg School of Medicine will make a transformative difference in the field of aging through innovative research, training programs, and clinical care.

The Biology of Aging

Biological aging is associated with a reduction in the body's potential to repair tissues and organs. Old cells lose regenerative capabilities in a process called senescence. Through decades of scientific discovery in the field of aging we know that senescence is biologic, rather than chronologic, and affects nearly every organ system in a measurable way.

That said, some populations are less affected than others by these biological changes. The Potocsnak Longevity Institute builds on decades of work by Dr. Vaughan and investigators across Northwestern, unifying programs studying populations that seem resistant to some of the negative consequences of aging. These include certain members of an Amish community in Berne, Indiana, who carry a unique genetic variant, and a group of cognitively young octogenarians called “SuperAgers.” Other projects will continue to seek biological levers that drive aging and investigate approaches—including new drugs—to minimize the impact of aging and extend the healthy lifespan of older adults.

The Potocsnak Longevity Institute is launching with five centers that will accelerate this exciting work. We invite donors and friends to learn more about the institute and its centers and join us in propelling its breakthrough work through philanthropic support.



“Through the Potocsnak Longevity Institute, we want to make it possible to not just live longer, but to live healthily for a longer period of time. Aging is the most important risk factor for every disease we care for in adult medicine. If we can push that process back, we can push back the onset of disease.”

Doug E. Vaughan, MD
Director of the Potocsnak Longevity Institute
Irving S. Cutter Professor of Medicine
Chair of the Department of Medicine

Five Interdisciplinary Centers

Potocsnak Center for Aging & HIV

This center stands to make a transformative impact on patient care and outcomes and to further distinguish Northwestern Medicine at the forefront of HIV-aging care and biomedical research. The science behind HIV and aging is a cornerstone of our research and can teach us about the fundamental biology of aging for all.

The center also will build partnerships with community healthcare organizations to disseminate information about current research and provide training opportunities for caregivers filling diverse roles in the care of aging people living with HIV. Training the next generation of experts in this field is also a priority of the center, with trainees gaining experience working with a diverse patient population in an intense multidisciplinary clinical and research training environment.

Center for Basic & Translational Biology

The Center for Basic & Translational Biology will unify existing programs in aging and longevity. There is already a tremendous amount of basic and translational research in the field of aging taking place at Northwestern. Research funding from the National Institute of Aging (NIA) has risen to more than \$40 million since 2016.

An important component of this center includes the unique opportunity to establish a permanent Northwestern satellite in Berne, Indiana, to expand and accelerate efforts to genotype and deeply phenotype approximately 12,000 adult members of a unique Swiss Amish community. This remarkable kindred harbors a novel gene mutation that appears to protect against biological aging. Northwestern would be positioned to reveal the results of this multigenerational “natural experiment” and yield institutional distinction for identifying and validating a genetic variant in humans with potential for a robust impact on human aging.

Human Longevity Laboratory

The Potocsnak Longevity Institute’s Human Longevity Laboratory will become a preeminent clinical center for measuring biological age, velocity of aging, and impact of interventions on biological age. The laboratory will focus on developing and refining a set of genetic, molecular, physiological, and structural measures that reveal biological age and aging-related morbidity in humans.

In the not-too-distant future, individuals will be able to check into the Human Longevity Laboratory to find out how old they really are, physiologically speaking. If the news is less than optimal, clinicians will determine why and check a litany of body systems as well as one’s neurological and orthopaedic health. Then, they’ll be prescribed an intervention to stave off further decline or—better yet—restore their vitality. This sounds like science fiction, but is actually the mission of the Potocsnak Longevity Institute and vision for the laboratory.

Center for Nanoscience & Aging

Using Northwestern’s expertise in nanoscience, bioengineering, and chemistry, the Center for Nanoscience & Aging will focus on and improve our ability to measure the biological age of patients and deliver new precision therapies that alter the trajectory of aging.



“The opportunities to enhance the lives of aging persons, made possible by the Potocsnak Longevity Institute, are simply staggering. Planned activities will span and integrate multiple medical disciplines across basic and clinical sciences and will involve research, education, and innovations in clinical care.”

Frank J. Palella, MD
Associate Director of the Potocsnak Longevity Institute
Director of the Potocsnak Center for Aging & HIV
Potocsnak Family-CSC Professor
Professor of Medicine (Infectious Diseases)

Our scientists will develop novel devices to measure specific physiological parameters that reflect age. For example, the older you get, the slower you walk, your heart rate variability goes down, and blood pressure goes up. We might be able to track these types of functional changes in real time in patients enrolled in clinical trials. The goal will be to see if we can impact the patient's physiological age, maybe with specific lifestyle interventions or new therapeutics.

Center for Population Science & Aging

There are well-defined biochemical and genetic markers that can be used to calculate the physiological age of a person and predict their risk for aging-related diseases. These tools will only get better and more precise in the years to come.

The Center for Population Science & Aging will define the genetic, molecular, proteomic, and metabolomic signatures of aging using the power of large human biorepositories and datasets. Our scientists in this center will utilize and refine existing tools to demystify the aging process in large populations of humans at all ages.

Training and Educating Future Clinicians and Scientists

Geroscience Academy

The Geroscience Academy within the Potocsnak Longevity Institute will educate and train students, clinicians, and scientists about the rapidly progressing science of aging. We want the institute to be an epicenter of aging research, but also a leader in teaching students, faculty, and the world about the rapidly evolving science of aging.

The Geroscience Academy will:

- Create a formal curriculum informed in the science of aging;
- Develop educational materials and formal courses for graduate medical education and continuing medical education;
- Host community engagement activities including seminars dealing with ethical, economic, political, and societal ramifications of extending human lifespan;
- Sponsor a global online lecture series; and
- Establish an annual award for internationally recognized leaders in our field.



An Invitation to Partnership

Through the Potocsnak Longevity Institute and the urgent work we are pursuing, Northwestern will be recognized as one of the leading institutions in the world in the field of human aging and longevity. Generous current and new donors will help us be a driving force in science that prolongs the healthspan of people and improves the human condition worldwide. Please join us in embracing this bold vision. Your commitment will make an extraordinary difference.

For more information about giving to the Potocsnak Longevity Institute, please contact:

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For more information about the Potocsnak Longevity Institute, visit:
www.feinberg.northwestern.edu/sites/longevity

Potocsnak Longevity Institute Funding Priorities and Opportunities

Through the new Potocsnak Longevity Institute, our scientists across disciplines are studying populations that seem resistant to some of the negative consequences of aging in an attempt to figure out exactly what makes them different. We believe that a deeper understanding of how aging works can lead to future therapies and lifestyle interventions that expand the healthspan for all people.

At Northwestern, we recognize that the breakthroughs and new knowledge we contribute to the field of aging will be made possible by donors who entrust us with their philanthropic support. We invite you to learn more about the institute's exciting work and consider joining our efforts.



Priority Funding Objectives

Our goal is to endow each of the five centers in the Potocsnak Longevity Institute and to propel the important educational work of its Geroscience Academy:

Potocsnak Center for Aging & HIV | Center for Basic & Translational Biology | Human Longevity Laboratory | Center for Nanoscience & Aging | Center for Population Science & Aging | Geroscience Academy

Name and endow one of the centers	\$10 million
Human Longevity Laboratory outright support for space and coordinators	\$5 million
Name and endow a professorship	\$3 million
Create and endow the Geroscience Academy Lecture Series Annual Award	\$2 million
Name and endow specific research funds for a center	\$500,000+

Support pilot research awards and other initiatives through endowed and outright gifts of any size

Support the institute, a center, or any of the priority needs listed above with a gift of any size

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