

HUTCH NEWS

In his own words: Bielas on aging

New faculty member Dr. Jason Bielas, Public Health Sciences Division, talks with the editor of Center News about the research that won him a \$400,000 New Scholar in Aging award from The Ellison Medical Foundation

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What do we know about the causes of aging?

Bielas: Some of the effects of aging may originate from cell structures called mitochondria. Mitochondria are the cells' power sources; hundreds to thousands are present in every cell of the body; each containing their own DNA that is separate from the cell nucleus, where the majority of our genes reside. Researchers believe the accumulation of mutations in mitochondrial DNA (mtDNA) drives aging and contributes to a number of age-related disorders, including Alzheimer's, Parkinson's disease, muscle wasting and cancer.

What has prevented scientists from addressing this theory?

Bielas: Unfortunately, our inability to accurately measure mtDNA mutations impedes our ability to resolve the relationship among mitochondrial mutation, disease onset and human aging.

How do you propose to define these parameters?

Bielas: We've recently developed a new extremely sensitive technology that can monitor the rate at which mitochondrial DNA mutates in human cells and tissues. With this powerful new tool, we proposed to The Ellison Medical Foundation that we would accurately establish the frequency at which mtDNA mutations occur in humans and investigate methods to prevent and/or slow this accumulation.

How will this research impact science and society?

Bielas: Ultimately, we are hopeful that fulfillment of these aims will help unravel the role of mitochondrial mutagenesis in human aging, aid in the amelioration of age-related disease, and extend the number of healthy and active years of life.

TAGS: aging, dna mutation, ellison medical foundation, fred hutchinson cancer research center, Jason Bielas, mitochondrial DNA, new scholar in aging, Public Health Sciences

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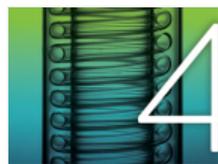
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