

Silicon Valley launches another bid to 'hack' aging, cheat death

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Ever wanted to stretch your life to Old Testament proportions? You may be in luck. A movement of Silicon Valley thinkers and entrepreneurs wants you to live as long as Jacob, who died at 147, and maybe even Noah, who made it to 950.

One year after Google created a company named Calico with the goal of extending human life, Menlo Park investor and Stanford-trained radiologist Joon Yun has launched a \$1 million science competition with the lofty aim of "curing" the disease more commonly known as aging.

While Calico's plan remains largely opaque, Yun has laid out specific criteria for the 11 teams that have already signed up to compete for the Palo Alto Longevity Prize, which focuses on improving "homeostatic capacity," or the ability of an organism to bounce back to normal in the face of stress.

At a swanky launch party this month in San Francisco, Yun declared aging an urgent problem, saying every day 100,000 people die unnecessarily of age-related illness. The Presidio gathering included proponents of life extension who believe the current limit on human life, roughly 120 years, can be pushed back several decades, or perhaps hundreds of years.

"Ultimately, I think we'll crack the age code and we'll hack aging," Yun announced. "And if we do, not only will health care be transformed, but humanity. At that point we'll have unlocked human capacity."

The idea for the competition came from Yun's daily life. As president of Palo Alto Investors, an investment fund targeting the health care sector, Yun gets an early look at innovative research. At the age of 46, he's noticed the many small ways in which his own homeostatic capacity has degraded over time - for instance, recovering from a poor night's sleep.

That same lack of resilience, Yun said, helps explain serious illnesses such as diabetes and hypertension - the body loses its ability to self-tune when its blood sugar or blood pressure gets too high.

The Palo Alto Longevity Prize has two parts. Judges will give \$500,000 to the first team that increases a small mammal's [heart rate variability](#) to levels typical of a young adult. Heart rate variability is an indicator of autonomic nervous system health that decreases over time. They also will award \$500,000 to the first team to extend the life of a test mammal by 50 percent beyond its life expectancy by restoring homeostatic capacity.

The competition has drawn well-credentialed researchers from across the country. One team is led by Doris Taylor, director of regenerative medical research at the Texas Heart Institute, a nonprofit arm of CHI St. Luke's Health that focuses on the prevention and treatment of [cardiovascular disease](#). Taylor's outfit will pursue stem cell therapy.

"Inflammation, stress (and) chronic disease equal aging," she said in a video produced by prize organizers. "I believe we can intervene in all of those with stem cells."

Even if human life could be extended tens or hundreds of years, there is disagreement over whether radical life extension is worth pursuing. Some critics wonder whether increased longevity would rob life of its meaning. Others say there are far more pressing problems to address, from hunger and infectious disease to climate change.

One of the chief critiques of life extension is that it would exacerbate global overpopulation. Mathis Wackernagel, president of the nonprofit Global Footprint Network, argues the planet is already overtaxed.

"Our demand on nature is already about 50 percent faster than nature can renew, and many on our planet legitimately need more resources in order to have a decent life," said Wackernagel. "And we are still expanding by about 75 million people a year."

Aubrey de Grey and Sonia Arrison, two leading advocates of [life extension](#) and advisers to the Palo Alto Prize, brush these concerns aside. De Grey, chief scientist for the SENS Research Foundation in Mountain View, argues humanity will solve resource scarcity through innovation. Arrison notes that the rate of global population expansion is slowing.

Arrison, a Palo Alto-based author and teacher, claims that increasing the healthy [life](#) span, by extending the sweet spot of adulthood that combines vigor with the wisdom of experience, will give the world's best minds more time to innovate solutions to humanity's problems.

One of Silicon Valley's top crusaders against death is PayPal cofounder Peter Thiel, who has pledged at least \$3.5 million to de Grey's research and wrote the introduction to Arrison's 2011 book on longevity.

Eric Weinstein, managing director of Thiel Capital, one of the tycoon's investment funds, spoke at the launch. People are squeamish about major advances in biomedicine, he said, fearful of disrupting the natural order. But innovations that begin in controversy, such as in vitro fertilization, are accepted by succeeding generations.

"We find ourselves sitting on top of our own source code," said Weinstein, referring to DNA. "We are being invited, either by a deity or by selection, to hack, to create, to collaborate, to join."

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