



SCIENCE FOR THE BENEFIT OF HUMANITY

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AN EVENING PROGRAM CO-SPONSORED BY  
THE ROCKEFELLER UNIVERSITY COUNCIL AND *WOMEN & SCIENCE*

## AGING AND THE DISCOVERY OF “LONGEVITY GENES”

DATE: Thursday, December 6, 2007  
TIME: 6:00 p.m. – 8:00 p.m.

PLACE: Abby Aldrich Rockefeller Hall  
The Rockefeller University  
York Avenue at East 66<sup>th</sup> Street

Even for the healthiest, luckiest people, life has a natural time limit that rarely extends beyond 100 years. This never made sense to biologist Cynthia Kenyon. She found it curious that mice live only two years, while some species of bats, their close genetic cousins, can survive to 50. Dr. Kenyon, who studied the genes that control embryonic development with Nobel laureate Sydney Brenner, theorized that aging might also result from some undiscovered genetic program, rather than wear-and-tear over time.

To investigate, she turned to her favorite model organism, the tiny soil-dwelling worm known as *C. elegans*. In 1993, her laboratory identified worms that live twice as long as normal due to just one unusual genetic variation. With additional genetic manipulation, *C. elegans*'s usual lifespan can be extended much further, reaching the equivalent of five centuries for humans. What's more, these long-lived worms remain flexible and agile, with a youthfully smooth body surface. Examining one under a microscope, Dr. Kenyon says, is "like seeing a 90 year-old who looks and acts 40."

On Thursday evening, December 6, Dr. Kenyon will discuss this fascinating research and its relevance to human longevity, which is just beginning to be explored. For example, some genes linked to the worm's lifespan also regulate a *C. elegans* hormonal circuit that corresponds to the human insulin system, and worms fed a sugary diet accrue damage that parallels cellular aging in humans. Dr. Kenyon's findings may therefore provide insights into age-associated conditions such as obesity and Type 2 diabetes. Dr. Kenyon does not study human aging directly, but she is experimenting on one human subject: herself. To moderate her insulin metabolism, she follows a sensible diet that is low in carbohydrates. The results thus far—strictly anecdotal, of course—include heightened energy and enthusiasm for the scientific challenges ahead.



**Cynthia Kenyon, Ph.D.**, is an American Cancer Society Professor and director of the Hillblom Center for the Biology of Aging at the University of California, San Francisco. Dr. Kenyon has received the King Faisal Prize for Medicine and many other honors, including election to the National Academy of Sciences, the American Academy of Arts and Sciences, and the Institute of Medicine.

For more information please call (212) 327-7434.