



Progress in Longevity Medicine Seminar Series

**The Genetic and Molecular Basis of Longevity:
Lessons Learned from Comparative
Studies of Yeast, Worms, Fruit Flies, Mice and Humans**

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Date/Time: Friday, December 8, 2006; 5:30 pm (dinner included)

Location: The Arizona Club, 201 N. Central Ave., 37th Floor

Cost: Free

Abstract: The National Institute on Aging (NIA) launched the "Longevity Assurance Gene (LAG) Initiative" in 1993 to probe the genetic and molecular basis of longevity in several animal and cell culture models of aging and longevity. The long-term goals of the LAG Initiative were to identify and functionally characterize key genes and biological pathways involved in the regulation of longevity, life span and the maintenance of health span. Of special interest was the identification of longevity genes that were conserved across several species in that they might provide critical clues to genes and pathways that control human longevity and health span.

Since the inception of the NIA's LAG Initiative, a large number of conserved LAG genes and pathways have been identified and characterized in short-lived animal models and many more novel (unknown function) genes are currently under investigation by NIA-funded scientists. The highly conserved nature of several of the genes/pathways identified in animal models lead several research teams to search for homologous gene alleles in diverse populations of long-lived humans including centenarians. The discovery and functional characterization of key longevity genes/pathways such as the insulin/IGF-I signaling pathway, the sirtuin gene family and genes involved in the regulation of lipoprotein particle size will be highlighted. Preliminary results emerging from recent human genetic studies will also be presented. Lastly, the development of biologically-based drugs to promote human longevity, delaying the aging rate and extension of human health span will be discussed.

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Objectives:

- To obtain a broad understanding of basic research on longevity and aging
- To learn the latest research advances related to understanding the genetic and molecular basis of longevity
- To understand the translation of basic research findings on longevity and aging to the development of biologically-based strategies to promote human longevity and maintain human health span

Biography: Dr. McCormick is chief of the Genetics and Cell Biology Branch and the genetics program director of the Biology of Aging Program for the National Institute in Aging (NIA), as well as chair of the NIA Genetics Work Group. Prior to the NIA, Dr. McCormick was an expert for the Laboratory of Retinal Cell & Molecular Biology at the National Eye Institute (NEI) and was an assistant professor of Biochemistry at the University of Texas.

Dr. McCormick is a part of several Scientific Advisory Committees including the NIA's Glenn Foundation for Medical Research – "Molecular Biology of Aging" Workshop Series, American Federation for Aging Research (AFAR) - Glenn Fellowship Selection Committee and Alliance for Aging Research - Allied Signal Aging Research Award Selection Committee. She is a member of the NIA's "Longevity Consortium" Scientific Steering Committee and the Trans-NIH Mammalian Gene Collection Initiative as an NIA representative.

Dr. McCormick is involved with and supports several initiatives at the NIA including the Longevity Assurance Gene Initiative, the Task Force on Immunology and Aging, and the Biology of Aging Muscle Initiative. She received her bachelor's of science degree in Chemistry, her Master of Science degree in Biochemistry, as well as her doctorate in philosophy in Biochemistry from West Virginia University. Dr. McCormick fulfilled her postdoctoral appointment at the University of Wisconsin in 1978.

To RSVP or for additional information, please contact Diana Vuong at (602) 778-7492 or via email at Diana.Vuong@kronosinstitute.org.

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