



CENTER of EXCELLENCE  
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## Jef Boeke

Jef Boeke is the Founding Director of the Institute for Systems Genetics at NYU Langone Medical Center. He is known for work on mechanistic and genomic aspects of retrotransposition, and develops technologies in genetics, genomics and synthetic biology. He studied Biochemistry at Bowdoin College. Following this he spent a year as a Watson Fellow, collecting plants in the Andes. He obtained a Ph.D. in Molecular Biology from the Rockefeller University in 1982, where he worked on the genetics of filamentous phage assembly with Peter Model and Norton Zinder. He did postdoctoral work at MIT/Whitehead Institute on yeast/transposon genetics with Gerald Fink. He served on the faculty of the Department of Molecular Biology & Genetics at the Johns Hopkins University School of Medicine from 1986-2014, where he also founded the High Throughput Biology Center. He is a member of the American Academy of Arts and sciences and the National Academy of Science. He elucidated one of the major forms of DNA movement (transposition) in yeast cells, in which Ty1 elements move via reverse transcription of RNA. He coined the term retrotransposition to describe the process, which is common in virtually all eukaryotic genomes. His genetic and biochemical studies helped elucidate intricate molecular mechanisms involved in retrotransposition in yeasts, mammalian cells and mice. The Boeke laboratory has also constructed highly active synthetic retrotransposons as a probe of retrotransposition in cells and mice. He is leading the international team to synthesize an engineered version of the yeast genome, Sc2.0, the first synthetic eukaryotic genome. In his abundant spare time, when not keeping bees or sailing in Maine, he plays the dobro in the bluegrass band, The Southern Blots.