“Three Revolutions in Molecular Biology”

Dr. Phillip Sharp

This lecture will trace the evolution of molecular biology from its origins in the discovery of the structure of DNA to recent advances in genome sciences. Molecular biology remains a vibrant area of inquiry, which continues to produce fundamental discoveries that shape our understanding of all biological systems. In meeting the future challenges of society, a greater convergence of life sciences with engineering, physical, and computational sciences is important.

Wednesday, November 12
5:15 p.m.
Scaife Hall Auditorium 6

Dr. Sharp will also present “The Biology of Non-coding RNAs”
Thursday, November 13
11 a.m.
150 Chevron

This lecture will summarize the recent discovery of many new classes of non-coding RNAs. The roles of microRNAs and other small RNAs that associate with factors in the microRNA pathway in gene regulation and cancer will be discussed. Long non-coding RNAs in mammals are products of a permissive transcription of the genome, many associated with transcriptional enhancers and divergent transcription from promoters. The process controlling the stability of these RNAs and the significance of their generation is of interest.

Phillip A. Sharp is Institute Professor at MIT and member of the Department of Biology and the Koch Institute for Integrative Cancer Research. His research interests have centered on the molecular biology of gene expression relevant to cancer and the mechanisms of RNA splicing. His landmark work in 1977 provided the first indications of “discontinuous genes” in mammalian cells. The discovery fundamentally changed scientists’ understanding of gene structure and earned Dr. Sharp the 1993 Nobel Prize in Physiology or Medicine. Dr. Sharp is a co-founder of Biogen (now Biogen Idec) and Alnylam Pharmaceuticals Inc.

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