

THE
Flexner
DISCOVERY
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VANDERBILT-INGRAM CANCER CENTER & CANCER BIOLOGY

PHILLIP A. SHARP, PH.D

THE BIOLOGY OF NON-CODING RNAS

NOVEMBER 15, 2012
4:00 P.M.
208 LIGHT HALL

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Flexner
DISCOVERY
LECTURE SERIES

Upcoming Discovery Lecture:

MRIGANKA SUR, PH.D.
MIT

November 29, 2012
208 Light Hall / 4:00 P.M.

VANDERBILT  UNIVERSITY
MEDICAL CENTER

THE BIOLOGY OF NON-CODING RNAS

Large scale nucleic acid sequencing technology has revealed a number of classes of non-coding RNAs. The most common in mammalian cells are microRNAs that regulate over half of all genes. The degree of microRNA regulation varies in cancer cells versus normal cells, a decrease in the degree of silencing being the most common. Long non-coding (lnc) RNAs are transcribed from many loci in mammalian cells and different species are expressed between different cell states and growth conditions. Many of these RNAs are produced from divergent transcription from promoter sites and from enhancers of transcription. The stability of these lnc RNAs, at least in part, is related to signals responsible for splicing and polyadenylation. The activities of these lnc RNAs in regulation of genes in cis and trans are of great interest.



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**FACULTY MEMBER OF THE DAVID H. KOCH INSTITUTE
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NATIONAL MEDAL OF SCIENCE 2004

Phillip A. Sharp, Institute Professor (highest academic rank) at MIT and faculty member of the Koch Institute for Integrative Cancer Research and Department of Biology, has made fundamental contributions to cancer biology and to understanding gene structure and regulation. Sharp's seminal discovery of 'split genes' in eukaryotic cells and the associated mechanism of pre-mRNA splicing resulted in numerous awards and honors, including the Nobel Prize in Physiology or Medicine (1993), the Lasker Prize (1988), the Gairdner Foundation International Award (1986) and the 2004 National Medal of Science. In addition, he holds numerous honorary degrees from universities here and abroad and serves on many advisory boards for the government, academic institutions, scientific societies and companies. He is an elected member of the National Academy of Sciences, the Institute of Medicine, the American Academy of Arts and Sciences, and the Royal Society of the UK. His MIT career spans over 39 years where he served as Director of the Center for Cancer Research (now the Koch Institute), Head of the Department of Biology and later Founding Director of the McGovern Institute for Brain Research. A native of Kentucky, Dr. Sharp earned a B.A. degree from Union College, KY in 1966, and a PhD in chemistry from the University of Illinois, Champaign-Urbana in 1969. He did his postdoctoral training at the California Institute of Technology, where he studied the molecular biology of plasmids from bacteria in Professor Norman Davidson's laboratory. Prior to joining MIT, he was Senior Scientist at Cold Spring Harbor Laboratory. In 1978 Dr. Sharp co-founded Biogen (now Biogen Idec) and in 2002 he co-founded Alnylam Pharmaceuticals.
