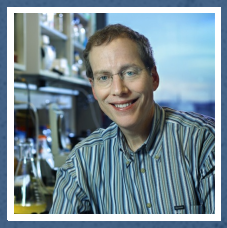
Deciphering the Epigenetic Code of Life



Andrew Feinberg

Gilman Scholar & Professor of Medicine, Molecular Biology & Genetics, Oncology, and Biostatistics
Director, Center for Epigenetics Chief, Division of Molecular Medicine

CURRENT RESEARCH

Understanding how genetics and the environment conspire to cause disease

80% of disease is caused by the environment surrounding us. Therefore, the key to understanding genetic risk is understanding the relationship between genes and the environment. Dr. Andrew Feinberg, Gilman Scholar and Professor of Medicine at Johns Hopkins University, Molecular Biology, Genetics, and Oncology, and Director of the the Center for Epigenetics, studies the environment and the genome to understand the relationship between ourselves, the world we live in, and disease. While most genetics labs focus on DNA sequence, or the genome's alphabet, Dr. Feinberg studies epigenetics, the genome's grammar. His team is developing methods to understand the epigenetic code, which incorporates the genetic code, environmental exposure, and chance, in order to better understand the causes and prevention of common diseases such as cancer, autoimmune disorders, and diabetes.

Moreover, while it is difficult to change the structure of our DNA, epigenetic changes to genes are potentially reversible. Dr. Feinberg and his team hope to develop drugs that change the behavior of genes and offer novel approaches to disease prevention and therapy. The Center for Epigenetics include geneticists, engineers, epidemiologists, clinical investigators, biochemists, cell biologists, physicists and computer scientists. Through the the NIH Director's Pioneer Award Program, Dr. Feinberg is also pursuing a mathematical approach to understand in a rigorous way previously applied to physics, the relationship between genes, the environment, and chance, in shaping normal tissue development, and how that process goes awry in common human disease.

Current research includes:

- Cancer: Dr. Feinberg's research on...

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AFFILIATION

Johns Hopkins University

EDUCATION

- Directed Studies honors program, 1971 - 1973 , Yale University
- B.A. & M.D., Human Biology and Medicine, 1976 , Johns Hopkins University
- M.P.H., in Environmental Health Sciences, 1981 , Johns Hopkins University School of Public Health

AWARDS

- Fyodor Lynen Medal
- National Institute of Medicine
- American Academy of Arts and Sciences
- Honorary Doctorates, Uppsala University and Karolinska Institutet
- Baruch Spinoza Chair

RESEARCH AREAS

Life Science, Genomics / Congenital, Neurological / Cognitive, Oncology / Cancer

FUNDING REQUEST

Your contributions will support the continued research of Dr. Feinberg and his highly interdisciplinary team at Johns Hopkins University, as they understand the fundamental relationship between genes, the environment and chance in shaping our epigenome and risk of disease. The potential of this work is limited only by one's ideas and the funding to put those ideas to work. Donations of $100K would support a graduate student or postdoctoral fellow, and $1M or more would allow development of new engineering technology for epigenomics. Be a part of out-of-the-box research that gives rise to new ideas and has necessary impact; fund Dr. Feinberg and his team.