

# THE WAGNER FREE INSTITUTE OF SCIENCE

Spring 2017  
BIOLOGICAL SCIENCES SERIES  
**Molecular Medicine and You**  
Professor Michael McCann

This course will be held at the **Independence Branch of the Free Library**, 18 S. 7<sup>th</sup> Street (between Market and Chestnut Streets), Philadelphia, PA.

LECTURES ARE HELD FROM 6:15 to 7:30 PM

## Course Description

Molecular medicine emerged as a scientific and medical discipline only in the last 60 years. It brings together our knowledge of biology, biochemistry, chemistry, pharmacology, bioninformatics and medicine to understand, prevent, manage and treat diseases at the molecular level. The origins of molecular medicine can be traced back to a paper published in 1949 by Linus Pauling, Harvey Itano, Seymour J. Singer and Ibert Wells entitled "Sickle Cell Anemia, a Molecular Disease" in which they described the structural effect of the sickle cell mutation on the protein hemoglobin, and how the change in one amino acid of that protein lead to the devastating pathology of the disease. Since that time we have come to understand the molecular basis of many diseases, and this understanding has, in some cases, provided new avenues for treatment and management, as well as possibilities for prevention and cures. This course will examine the field of molecular medicine and how it has - and will - continue to impact human health.

## Lectures

1. **Wednesday, March 29, 2017** - The history of molecular medicine from 1949 through today
2. **Wednesday, April 5, 2017** - A brief over view of human genetics and its importance in molecular medicine
3. **Wednesday, April 12, 2017** - Cystic Fibrosis, a respiratory disease caused by a faulty ion pump
4. **Wednesday, April 19, 2017** - Cholesterol, atherosclerosis, and cardiovascular disease - the discovery, use (and mis-use?) of statins
5. **Wednesday, April 26, 2017** - Cancer and personalized medicine
6. **Wednesday, May 3, 2017** - HIV as an example of antiviral treatments and the evolution of drug resistance

## Suggested Reading

Molecular Medicine: An Introductory Text, 2nd Edition, by R. J. Trent (available as an ebook and through Google books)

**Dr. Michael McCann** is Professor of Biology at Saint Joseph's University in Philadelphia. He received his PhD in microbiology and immunology from Stanford University. He has been teaching evening courses for the Wagner since 2005 and collaborates on Wagner's GeoKids LINKS partnership with Saint Joseph's University, which brings intensive hands-on science to children at three North Philadelphia schools.