

THE WAGNER FREE INSTITUTE OF SCIENCE

PHYSICAL SCIENCES SERIES – WINTER 2020

The Noble Nobel
Professor Paul Angiolillo

This course will meet at the **Falls of Schuylkill Branch of the Free Library**, 3501 Midvale Avenue, Philadelphia, PA.

Dates: 6 Mondays, January 27 – March 9, 2020

Time: Classes meet from 6:30 to 7:45 PM

No pre-registration required. Please register by completing a registration form at the class.

Course Description

For most scientists, the Nobel Prize represents the “Holy Grail” of accomplishment. This six-week course will explore the history of—and the controversies surrounding—the Nobel Prize. The focus will be on prizes that were primarily given for achievements in physics and chemistry. Each class will give the necessary scientific background to understand the reason(s) for the award for that given year. In some cases, the presentation will highlight the contention surrounding several celebrated Nobel Prize awards. Whenever possible, local history will be incorporated into the discussion.

Course Schedule – Lectures begin at 6:30 PM

1. Monday, January 27, 2020 – Guglielmo Marconi, Nobel Prize in Physics 1909

This class will discuss the invention and contention surrounding the development of the modern radio, including the work of notable scientists like Tesla, Fessenden, and Hertz, to name a few.

2. Monday, February 3, 2020 – Charles Hard Townes, Nobel Prize in Physics 1964

The invention of the LASER revolutionized all aspects of technology. This class will explore the fundamental science of the LASER and discuss the patent battle that ensued.

3. Monday, February 10, 2020 – Donna Strickland, Nobel Prize in Physics 2018

The LASER continues to be used to advance many areas of research. This class will discuss the most recent advances in LASER technology and also address gender issues particular to the Nobel Prize.

NO CLASS – Monday, February 17, 2020 – President’s Day

4. Monday, February 24, 2020 – Kip Thorne, Nobel Prize in Physics 2017

Gravitational waves were proposed by Henri Poincaré in 1905 and subsequently predicted in 1916 by Albert Einstein on the basis of his general theory of relativity. The 2017 Nobel was given to those principally involved in gravitational wave detection—or was it? This class will look deeply into gravitational wave detection and discuss if those who won the Prize actually deserved it.

5. Monday, March 2, 2020 – William Bradford Shockley, Nobel Prize in Physics 1956

The invention of the transistor drastically changed the landscape of electronics and electronic devices. Its development will be traced using the work and life of Shockley as a focus.

6. Monday, March 9, 2020 – Marie Sklodowska Curie, Nobel Prize in Physics 1903 and Nobel Prize in Chemistry 1911

This class will explore the unique accomplishment of Marie Curie, a woman who won two Nobel Prizes. The science and life of this incredible, iconic scientist will be the focus.

Monday, March 16, 2020 – Make-up class (if needed)

Readings

No texts or books will be required. Dr. Angiolillo will provide handouts and a bibliography at the course.

About the Professor

Paul J. Angiolillo is Professor of Physics at Saint Joseph's University, where he received a BS in Physics. He obtained an MS and PhD in Molecular Biophysics at the University of Pennsylvania's Eldridge Reeves Johnson Research Foundation. After working in the private sector, he taught physics at the University of the Sciences in Philadelphia. He joined the Department of Physics at Saint Joseph's University in 2000 and served as Chair of the department from 2007 to 2015. Dr. Angiolillo has an active research program in the area of materials physics. He specifically studies charge and spin dynamics in conjugated organic electronic materials, and has published extensively in this area. He has been a member of the Wagner faculty since 2002.

The course is presented by the Wagner Free Institute of Science. Founded in 1855, the Wagner is dedicated to providing free science education. All classes are free and open to the public. To attend, please complete a registration form at the class. For more information about the Wagner Free Institute of Science and its programs, please visit www.wagnerfreeinstitute.org or call 215-763-6529.
