

## **G-RISE Summer 2021 Bootcamp Science and Society**

The Scientific Revolution (16<sup>th</sup> & 17<sup>th</sup> century) was ushered in by such historical figures as Nicolaus Copernicus (born 1473), Isaac Newton (born 1642) and Galileo Galilei (born 1564), who developed the scientific method that is still used today. The scientific method involves developing a hypothesis, making predictions based on that hypothesis, executing experiments that are well-controlled in order to make measurable observations, analyzing the results of those experiments in order to confirm or reject the original hypothesis, followed by further experimentation to continue the progression of knowledge.

Prior to the Scientific Revolution, the term 'science' was not used; instead, the pursuit of the fundamental knowledge of the physical world was considered natural philosophy. The transition of science from natural philosophy to empirically derived facts sometimes came into conflict with the religious philosophy of the day (e.g. Galileo was famously condemned by the Catholic Church for his belief that the Earth revolves around the sun).

Medical science and research took much longer to catch up with the physical sciences. For example, while Fahrenheit based the high point of his thermometer on the temperature of the human body in 1724, it wasn't until ~120 years later that thermometers were used in medical practice. In fact, most maladies were attributed to a misalignment in bodily humours until the late 19<sup>th</sup> century, when sanitation and public health as an empirical science first started to be developed.

In this 10-session intensive course, we will discuss the interplay of science and society, explore misconceptions of scientific practice, and discuss how the perception of science may change in the future.

Class meetings will be held via Zoom every weekday between Aug. 23<sup>rd</sup>, 2021 and Sep. 3<sup>rd</sup>, 2021 from 11:30am to 1:00 pm.

Zoom Meeting Link:

<https://ccny.zoom.us/j/94951766591?pwd=eEILRnZOUVg3d3hkRGN5NDgyZURVZz09>

Meeting ID: 949 5176 6591

Passcode: GRISE2021

Presentations and discussions will be led by Dr. Francine Katz ([fkatz@ccny.cuny.edu](mailto:fkatz@ccny.cuny.edu)). Additional sessions will be scheduled for mentor presentations in the following weeks during the regular fall semester.

## Summer 2021 Syllabus

- 8/23/2021 Meet and Greet: Program Orientation
- 8/24/2021 Watch before class and then discuss: Naturally Obsessed: The Making of A Scientist <https://www.thirteen.org/naturally-obsessed/>
- 8/25/2021 Teaching Strategies for PhD students
- 8/26/2021 Ignorance -- How it Drives Science: Part 1
- 8/27/2021 Ignorance -- How it Drives Science: Part 2
- 8/30/2021 Emerging information in nutrition: MSG, saccharin, Red Food dye #40, salt, eggs
- 8/31/2021 Emerging information in a pandemic: press conferences, scientific conferences
- 9/1/2021 Setting the wrong standards: The case of the number of chromosomes
- 9/2/2021 Science by serendipity: Penicillin, LSD, nerve agents
- 9/3/2021 Introduction of GRISE groups