

# Engineering Summer Academy at Penn Nanotechnology 2015

## Welcome to University of Pennsylvania's Summer Nanotech Program!

Nanotechnology, shortened, "Nanotech," is the study of the control of matter on an atomic and molecular scale. Generally, nanotechnology deals with structures of the size 100 nanometers (nm) or smaller, and involves developing materials or devices within that size. There has been much debate on the future implications of nanotechnology. Nanotechnology has the potential to create many new materials and devices with wide ranging applications, such as in medicine, electronics, and energy production. On the other hand, nanotechnology raises many of the same issues as with any introduction of new technology, including the concerns about the toxicity and environmental impact of nanomaterials.

This class with focus on the atomic and molecular structure of nanomaterials and other concepts necessary to understanding why very small systems exhibit unique behavior. We will also explore various applications. Through lecture, class discussion, and labs, we will cover topics in nanomaterials, nanofabrication techniques, imaging technology, real-life applications of nanotechnology, and nanoscience ethics.

### Class time and dates:

July 6 – July 24, Monday – Friday, 9AM – 5PM

All students should begin each morning and afternoon in Berger Auditorium unless advised otherwise.

### Location:

AM: Laboratory Sessions (225 Skirkanich)

PM: Lecture and other Activities in Berger Auditorium (Skirkanich)

### Grading:

<b>Lecture</b>		<b>Lab</b>	
Final Presentation	10%	Lab Reports	15%
Final Paper	10%	Lab/Lecture Exam	30%
Final Poster	5%	Poster Preview	5%
Quizzes (2)	10%		
Homework (5)	10%		
Project Proposals	5%		
	50%		50%

### The ESAP Staff

Instructor: Dr. Marylin Huff

Laboratory Instructor: Dr. Robert Bucki

Teaching Assistants: Priyanka

Resident TAs: Sebastian, Meiyang, Eric, Anthony