Physics and Engineering Teaching Opportunities

Summer 2015

We are seeking enthusiastic teaching assistants for our summer program for gifted high school students. CTY offers intense, 3-week academic programs for highly talented students from across the country and around the world. As a teaching assistant you will have the opportunity to gain experience working with gifted students in a small class setting (approximately 12-16 students), as well as learn from a teacher in the field. Room and board are provided, in addition to a salary. A full course description, job descriptions, and application can be found on our website: cty.jhu.edu/jobs/summer.

We are currently seeking a TA candidate for the following courses:

**The Physics of Engineering**
- Roger Williams University, Bristol, RI (June 25 – August 8)
- Washington College, Chestertown, MD (June 25 – August 8)

Through hands-on activities demonstrating basic physics, students examine Newton’s laws and delve into other elements of engineering and mechanics. Students in this course explore various approaches to problem solving in math and physical science. Competitive TA candidates have had undergraduate or graduate coursework in Physics and/or Engineering, and experience working with youth.

**Principles of Engineering Design**
- Seattle University, Seattle, WA (July 18 – August 8)
- Roger Williams University, Bristol, RI (June 25 – August 8)
- UC Santa Cruz, Santa Cruz, CA (June 25 – August 8)

Key principles of engineering design are explored primarily through the construction of working models. Through this hands-on learning process, students gain exposure to fundamental topics in physics and chemistry, including basic atomic structure, kinetic theory of gases, Newton’s laws of motion, kinetic and potential energy, electrical current, and work. Competitive instructor candidates have undergraduate and/or graduate coursework in engineering, and experience teaching. Competitive TA candidates have undergraduate coursework in engineering and experience working with youth.

**Electrical Engineering**
- Dickinson College, Carlisle, PA (June 25 – August 8)
- Skidmore College, Saratoga Springs, NY (June 25 – August 8)
- Loyola Marymount University, Los Angeles, CA, (June 25 - August 8)

This course offers students an introduction to the field of electrical engineering. Students learn the basic physical science behind circuits and electronics, including electrical current, voltage, resistance, conductivity, work, energy, power, and magnetism. Competitive TA candidates have at least undergraduate coursework in electrical engineering and experience working with youth.
Investigations in Engineering  
Johns Hopkins University, Baltimore, MD (June 18 – August 1)
This course offers students an introduction to the field of engineering. Students learn how to translate problems with no obvious solutions into ones which can be resolved. Students develop a sense of how to solve engineering problems and explore these solutions in a virtual environment. It follows the curriculum of a first year college course developed by Professor Michael Karweit, a faculty member at Johns Hopkins University. Competitive TA candidates have extensive undergraduate/graduate coursework in engineering and experience working with youth.

Introduction to Robotics  
Roger Williams University, Bristol, RI (June 25 – July 18)  
Washington College, Chestertown, MD (June 25 – August 8)  
Loyola Marymount University, Los Angeles, CA, (June 25 - August 8)
In this course, students develop familiarity with computer science concepts, basic principles of physics and mechanical engineering, and basic principles of electrical engineering. Using LEGO® robotics equipment, they work together to construct, program, and test their robots in a modern programming environment. TAs should have experience and coursework in fields related to robotics such as computer science, physics, mechanical engineering or electrical engineering and experience working with youth.

The Physics of Sports  
Roger Williams University, Bristol, RI (June 25 – August 8)
Students use sports to explore mechanics through lectures, hands-on activities and labs, mathematical problem sets, and research projects. Competitive TA candidates have undergraduate and/or graduate coursework in physics and experience working with youth.

For candidates with extensive coursework and teaching experience in these fields, we are also seeking instructor candidates for various positions. For more information, please contact Peter Bruno at pbruno1@jhu.edu.

Our online application can be found at:  
[www.cty.jhu.edu/jobs/summer](http://www.cty.jhu.edu/jobs/summer)
Interested candidates can apply online  
or contact Peter Bruno at pbruno1@jhu.edu for more information