

CONFERENCE EXPERIENCE FOR UNDERGRADUATES 2016

*Fall Meeting of the Division of Nuclear Physics of the
American Physical Society*

Vancouver, BC October 13 – 16, 2016

Thursday 10/13

3:00 – 6:00 pm **DNP Plenary Session** – *Grand Ballroom*
6:30 – 8:00 pm **DNP Welcome Reception, following plenary session** – *Pavilion
Ballroom*

Friday 10/14

10:00 – 10:30 am **CEU Group Meeting** – *Grand Ballroom*
10:30 – 11:15 am **CEU Nuclear Physics Seminar I** – Gamma-Ray Spectroscopy in Nuclear
Structure, **Dr. Heather L. Crawford**, Lawrence Berkeley National
Laboratory – *Grand Ballroom*
11:30 – 1:30 pm **CEU Poster Set-up** – *Grand Ballroom*
2:00 – 3:45 pm **CEU Research Poster Session** – *Grand Ballroom*
3:45 – 3:55 pm **CEU Group Picture** – *Location TBA*
4:00 – 5:00 pm **CEU Poster Tear-Down** – *Grand Ballroom*
6:00 – 8:00 pm **DNP / TRIUMF Public Lecture** with Vaclav Smil – *Grand Ballroom*
8:00 – 9:00 pm **CEU Ice Cream Social** – *Pavilion A/B*

Saturday 10/15

9:45 – 10:15 am **Applying to Graduate School** – **Dr. Jolie Cizewski** – Rutgers
University – *Grand Ballroom*
10:15 – 11:00 am **CEU Nuclear Physics Seminar II** - Neutrinos from the Sky and Through
the Earth, **Dr. Kate Scholberg**, Duke University – *Grand Ballroom*
12:30 – 1:45 pm **Graduate School Information Fair** – *Grand Ballroom*
7:00 – 10:00 pm **DNP Banquet** – *Pavilion Ballroom* (reception with cash bar at 6:30 pm)

The Conference Experience for Undergraduates is generously supported by:

Division of Nuclear Physics, American Physical Society
National Science Foundation, Nuclear Physics Program
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TRIUMF

Gamma-Ray Spectroscopy in Nuclear Structure

Heather L. Crawford – Nuclear Science Division, Lawrence Berkeley National Laboratory

The study of atomic nuclei, both their structure and reactions, directly relates to fundamental questions in physics, including the understanding of the origin of the elements, and how complex many-body systems organize. Much of what we know about nuclei comes from the measurement and characterization of excited state, and many experimental tools and techniques have been developed to aid these studies. Among the available tools, γ -ray spectroscopy has proven to be among the most powerful, and γ -ray spectrometers play a central role in nuclear science.

I will (attempt to) give an overview of the role of gamma-ray spectroscopy in nuclear structure studies, highlighting a few examples of spectroscopy with radioactive ion beams. I will also discuss developments in the technology of gamma-ray spectrometers such as the Gamma-Ray Energy Tracking Array, GRETA.

Neutrinos from the Sky and Through the Earth

Kate Scholberg – Duke University

The progress in neutrino physics over the past twenty years has been tremendous: we have learned that neutrinos have mass and change flavor, a discovery which earned the Nobel Prize in 2015. I will pick out one of the threads of the story—the measurement of flavor oscillation in neutrinos produced by cosmic ray showers in the atmosphere, and further measurements with beams of neutrinos sent hundreds of kilometers through the Earth. In this talk, I will discuss results from the Super-Kamiokande and T2K (Tokai to Kamioka) long-baseline neutrino experiments, and will discuss how the next generation of high-intensity neutrino beams will address some of the remaining puzzles.