

# Joseph A. Santora

## CONTACT INFORMATION

Chemical Sciences Division  
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## EDUCATION

**B.S. Chemical Engineering; Minor in Nuclear Engineering and Chemistry** (2010-2014)  
*University of Utah*

## RESEARCH EXPERIENCE

**Undergraduate Internship** (January 2015-Present)

*Lawrence Berkeley National Laboratory*

Research Advisor: Dr. Kevin Wilson

- Reacting various organic aerosol particles with oxidants (O<sub>3</sub> and OH) to measure kinetics and product formation.

**Undergraduate Internship** (June 2014-August 2014)

*Center for Space Nuclear Research, Idaho National Laboratory*

Research Advisor: Dr. Steve Howe

- Participated in designing spacecraft to collect elemental data from asteroid and transmit data to a database on earth.
- Used Monte Carlo Neutron Particle (MCNP) software to simulate the detection of water content on an asteroid from various distances with various neutron flux.
- Designed system to remove water from asteroid, perform electrolysis to separate water into H<sub>2</sub> and O<sub>2</sub>, and transport to storage tank for use as propellant.

**Undergraduate Research Assistant** (August 2012-May 2014)

*Department of Nuclear Engineering, University of Utah*

Research Advisor: Prof. Luther McDonald

- Research on cancer screening using a ligand bonded to various metal elements for more accurate screening

Research Advisor: Prof. Tatjana Jevremovic

- Began implementation of a Field Programmable Gate Array (FPGA) into computer to speed up computing power and decrease simulation time
- Used Neutron Activation Analysis (NAA) with gamma spectroscopy to find the elemental composition of soil, vine, and grape samples collected from various vineyards
- Found similarities in elemental composition of samples to better understand the transport of elements from soil to grapes

## AWARDS

- Science Undergraduate Laboratory Internship (SULI) (January 2015-Present)
- Nuclear Research Commission (NRC) Fellowship (October 2012, October 2013, February 2014)
- American Nuclear Society (ANS) funding to travel to Boston, MA (April 2013)
- Dean's List (May 2014, December 2012, December 2011, May 2011)

## AFFILIATIONS

- American Institute of Chemical Engineers
- American Nuclear Society
- National Society of Leadership and Success

- Golden Key International Honor Society

## **ORAL PRESENTATIONS (presenter in bold)**

### *NATIONAL CONFERENCES*

- (1) **Joseph A. Santora**, Tatjana Jevremovic, Miltos Alamaniotis  
“Elemental Transportation throughout the Vineyard Cycle”  
American Nuclear Society Conference, March 2013, MIT, Boston, MA

## **REFERENCES**

Steve Howe  
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