

Iva Rreza

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EDUCATION

Columbia University, New York, NY
Ph.D. Candidate (Expected June 2019)
Advisor: Prof. Jonathan S. Owen

California Institute of Technology, Pasadena, CA
B.S. Inorganic Chemistry (with Honor, June 2014)
Senior Thesis: "Development of Tantalum Phenoxy-Imine Compounds for the Selective Oligomerization of Ethylene"
Advisor: Prof. John Bercaw

RESEARCH

California Institute of Technology
"Development of Selective Ethylene Oligomerization Catalysts" **May 2013-June 2014**

- Worked toward developing a selective catalyst for the oligomerization of ethylene under the guidance of Prof. John Bercaw and postdoc Aaron Sattler.
- Developed a new transition metal catalyst with a previously known ligand framework that selectively produces an industrially valued alpha olefin, 1-butene.

"Ligand Binding Characterization involving selective addition of different stoichiometries" **May-August 2012**

- Worked under Professor Dennis Dougherty and graduate student Chris Marotta in analyzing a new drug, Sazetidine-A, as a nicotine agonist to the $\alpha_4\beta_2$ receptor in the brain.
- Results show that this drug binds to the receptor in non-conventional ways due to its interesting pharmacological properties, potential smoking-cessation drug. *ACS Chem. Biol.*, **2014**, *9*, 1153-1159.

"Keck Spectroscopy of the SSA22 Field" **June-August 2011**

- Worked under Professor Fiona Harrison (P.I of NuSTAR) and Daniel Stern (NuSTAR team).
- Analyzed spectroscopy data gathered from the Keck Telescope on the SSA22 field, host of the furthest known supercluster. Paper submitted.

"Aqueous Anodic Solution for Lithium Ion Batteries" **July-August 2010**

- Conducted research on lithium-ion batteries under the guidance of Ted Yu (graduate student), Rachid Yazami, and Professor William Goddard III.
- Performed computational studies on aromatic compounds for aqueous anodic solutions as a substitute for graphitic anodes in lithium-ion batteries. This holds the implications of increasing energy density and increasing safety of common lithium ion batteries.

TEACHING

Columbia University
Graduate Teaching Assistant **August 2014-present**
General Chemistry Laboratory for Undergraduates

California Institute of Technology

HHMI Undergraduate Teaching Assistant

September 2012 – March 2014

Core curriculum general chemistry classes (ch1a, ch1b)

OUTREACH

Columbia University

Experiment Leader for Girls' Science Day, a Columbia program designed to expose girls to various scientific fields through hands-on demos and experiments.

California Institute of Technology

Headed a community, chemistry outreach program under the Caltech Chemistry Club from 2012-2014. The program involved designing and performing educative and visually interesting chemistry demos at Pasadena public schools to spread scientific interest and inspire students to pursue careers in science.

AWARDS/ LEADERSHIP

Library Friends Senior Thesis Prize Semifinalist (2014)

Summer Undergraduate Research Fellowship (SURF) (2011, 2012, 2013)

Thomas C. Hays named SURF research fellow (2013)

Perpal speaking competition for SURF, semifinalist (2013)

Perpal speaking competition for SURF, semifinalist (2011)

Undergraduate Chemistry Club Outreach Coordinator (2012-13)

Undergraduate Chemistry Club President (2014)

PRESENTATIONS

[1] **Rreza, I.**, "Development of Tantalum Phenoxy-Imine Compounds for the Selective Oligomerization of Ethylene", Undergraduate Senior Thesis Research Symposium, June 6, 2014.

[2] **Rreza, I.**, "Ligand Binding Characterization involving selective addition of different stoichiometries", Summer Undergraduate Research Symposium, Oct. 20, 2012.

[3] **Rreza, I.**, "Keck Spectroscopy of the SSA22 Field", Summer Undergraduate Research Symposium, Oct. 2011.

PUBLICATIONS

[1] Saez, C; Lehmer, D. **Rreza, I.** ...Harrison, F. "An Extragalactic Spectroscopic Survey of the SSA22 Field." *Monthly Notices of the Royal Astronomical Society*. In review.

[2] Marotta, C; **Rreza, I.**; Lester, H.; Dougherty, D. A. "Selective Ligand Behaviors Provide New Insights into Agonist Activation of Nicotinic Acetylcholine Receptors." *ACS Chem. Biol.* **2014**, *9*, 1153-1159.

SKILLS

Fluent in Albanian (native language), proficient in Spanish.

Can program in Python, MATLAB. Familiar with Linux, LATEX, Excel.

Familiar with inorganic synthesis techniques for air sensitive compounds (Schlenk line, glove box, high-vacuum)

Familiar with various spectroscopic techniques (NMR, IR)