



Alexander Barrington Rudine

Graduate Institution: Portland State University

Graduate Discipline: Organic Chemistry

Hometown: McMinnville, OR

Relevant SC Research: Basic Energy Sciences

Research Interest:

My current research focuses on four main areas: The synthesis and characterization of novel extended conjugation porphyrin dyes for use as light-absorbers in solid-state solar cells modeled after natural photosynthesis; synthesis of novel conductive porphyrin polymers for use as solid hole conductors; designing and fabricating solar cells with both liquid and solid hole transport media; and studying the reaction statistics, kinetics and reactant variability in the Lossen rearrangement carboxylic acid to amino transformation reaction as it applies to porphyrin substrates that can be used as light-harvesting dyes. Other research interests include green chemistry, the science of carbon sequestration, liquid fuel synthesis, bioorganic reactions, chemical kinetics and organic synthesis. In the future I would like to combine my interests in solar energy materials research and green chemistry to design novel, high impact materials with low impact to human health and the environment.

About Me:

I graduated from Portland State University in 2007 with a bachelor's degree in biochemistry and a minor in mathematics. I am currently a fourth year graduate student in the Chemistry department at Portland State University working in Dr. Carl Wamser's Research group. I am an active member of the Society of Porphyrins and Phthalocyanines and the American

Chemical Society. After obtaining my Ph.D., I plan to do post-doctoral research for several years before finding a faculty position teaching organic chemistry with an emphasis on green chemistry and sustainable practices, while studying organic photovoltaics with students at the high school, undergraduate and graduate level.

My personal interests and hobbies include: Studying history, geography and mathematics. I like biking, hiking, camping, fishing, and in general exploring new places. I like taking opportunities to enhance scientific literacy by discussing science whenever possible. I am interested in residential remodeling, home construction and green building trends and techniques. I like to play and watch football, play guitar, read, watch movies, cook, and most importantly spend as much quality time as possible with my children Jackson (4) and Lilli (8).



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