**Elaine Gomez**

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**Education**

**Columbia University, New York City, NY 2014-Present**

Department of Chemical Engineering

Ph.D Candidate

**New Jersey Institute of Technology, Newark, NJ** **2010-2014**

Albert Dorman Honors College

Bachelor of Science in Chemical Engineering

GPA: 3.96

**Research Experience**

**Chemtura Corporation, Fords, NJ Summer 2013**

*Research and Development Intern*

* Blended and synthesized custom esters for lubricant base stocks from raw materials for customers.
* Responsible for planning experiments, data collection, and data analysis for an air entrainment investigation for the U.S Navy.
* Actively participated in safety meetings to asses near-misses and discuss incident prevention strategies.

**Center for Natural Resources Development and Protection, Newark, NJ 2012-2013**

*Technician*

* Assisted Langan Engineering and Environmental Services Inc. with bench scale experiments.
* Determined nutrient concentrations (Auto Analyzer 3), rate of oxygen consumption, and oil degradation of samples from Alaskan beaches exposed during the Exxon Valdez oil spill.

**National Renewable Energy Laboratory, Golden, CO Summer 2012**

*Catalyst Characterization Intern*

* Synthesized and characterized catalysts for vapor phase catalytic deoxygenation of model pyrolysis compounds.
* Conducted all reaction experiments, monitored reaction pathways, and compiled findings.

**New Jersey Institute of Technology, Dept. Chemical Engineering, Newark, NJ 2011-2014**

*Undergraduate Research*

* Completed construction of an effective continuous ammonia-based carbon dioxide scrubbing system operating under optimal process parameters.
* Simulated calculations for the Maximum Mixedness Model.

**Montclair State University, Dept. Earth & Environmental Sciences, Montclair, NJ Summer 2009**

*Student Researcher*

* Conducted a sediment research project on Jamaica Bay NY, an estuary and wildlife refuge.
* Study is fundamental in understanding the dynamics of the bay and proper remediation that will not disturb benthic organisms nor remobilize toxins.

**Meadowlands Environmental Research Institute (MERI), Lyndhurst, NJ Summer 2008**

*Student Researcher*

* Conducted research on water quality and wetland restoration.
* Established a MERI specific protocol on how to measure metal concentrations of plants in an engineered wetland.

**Publications**

Barat, Robert B., **Elaine Gomez**, Melissa Paul, and Charles Como. "A “Greenhouse Gas” Experiment for the Undergraduate Laboratory." *Chemical Engineering Education* (2013).

**Poster Presentations**

* “Vapor Phase Catalytic Deoxygenation of Model Pyrolysis Compounds”, 1st Place Energy and Petroleum Category: AIChE National Meeting, Pittsburgh, PA 2012.
* “Vapor Phase Catalytic Deoxygenation of Model Pyrolysis Compounds”, 2nd Place: Colorado Center for Bio-refining and Biofuels Poster Session, Boulder, CO 2012.
* “Carbon Dioxide Removal Through a Continuous Ammonia Scrubbing System”, New Jersey Institute of Technology Alumni Research Showcase, Newark, NJ 2012.
* “Carbon Dioxide Removal Through a Continuous Ammonia Scrubbing System”, New Jersey Institute of Technology Provost Excellence in Research Summer Presentation, Newark, NJ 2012.
* “Carbon Dioxide Removal Through a Continuous Ammonia Scrubbing System”, Newark College of Engineering Salute Research Poster Session, Newark, NJ 2011.
* “Sources of Sedimentary Organic Matter in the New York Jamaica Bay Region”, 3rd Place Environmental Science Category: Intel International Science and Engineering Fair, San Jose, CA 2010.

**Awards**

* National Science Foundation Gradate Research Fellowship 2014-Present
* Gates Millennium Scholar 2010-Present
* Columbia University Dept. Chemical Engineering Pesco Award 2014-Present
* Columbia University Provost’s Diversity Fellowship 2014-Present
* Columbia University Grossman Scholar 2014-Present
* Madame Mau Outstanding Female Engineering Award 2014
* Barry M. Goldwater Honorable Mention for Excellence in Undergraduate Research 2013
* American Chemical Society Scholar 2010-2014
* The Society of Chemical Industry (SCI) Scholar 2013
* NJIT Chemical Engineering Merit Award 2010-2014
* Albert Dorman Honors College Metz Scholarship 2010-2014
* NJIT Board of Trustees Scholarships 2013-2014

**Skills**

*Familiar Using:*

* Atomic Absorption Spectrometer

*Proficient in the Following Programs:*

* Microsoft Office Suite
* ASPEN Plus
* Polymath
* Matlab
* Minitab

*Experienced Using:*

* Scanning Electron Microscope
* X-Ray Diffractometer
* Gas Chromatograph-Mass Spectrometer
* Gas Analyzers
* Spectrophotometers
* Auto Analyzer 3
* Ion Selective Electrodes
* Microwave Digester

**Teaching Experience**

**Center for Pre-College Programs Spring 2012**

*Medibotics Teaching Assistant*

* Assisted middle school students to build and program their first robot.
* Taught basic unit conversion principles and control statement programming.
* Taught students time and project management skills for the successful completion of a medical robot.

**Equal Opportunity Program (EOP), Newark, NJ 2010-2011**

*Volunteer Math/Chemistry Tutor*

* Assisted in the effort of freshman retention by offering volunteer calculus and chemistry tutoring to groups of EOP students.
* Tracked individual student progress to provide individualized assistance.
* Structured tutoring sessions provided students the skills and confidence required to be successful in an engineering curriculum.

**Women in Engineering and Technology FEMME Program, Newark, NJ Summer 2010**

*Teaching Assistant*

* Assisted female middle school students to develop critical thinking and fundamental mathematics, science and engineering skills.
* Provided necessary background information and materials in order for students to complete simple mechanical engineering projects.

**Community Outreach**

**Union City High School, Union City, NJ 2010-Current**

*College Speaker and Mentor*

* Coordinate information sessions with local high school teacher to provide information and assistance with college, FAFSA, and scholarship applications.
* Provide SAT information sessions for parents and students.
* Encourage students to pursue STEM careers by disabusing students of ethnic educational stereotypes.
* Began a one-on-one college bound guidance network with fellow Union City High School graduates that are currently pursuing or have a degree in a STEM field.

**American Cancer Society Relay for Life, Newark, NJ 2010-2014**

*Team Captain*

* Coordinate fundraising activities and group meetings to meet fundraising goals.
* Encourage the participation of my campus to join the event.