

# Nicholas A. Welchert

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(520)-808-0522

## **Education:**

University of Southern California, Los Angeles, CA  
Ph.D. Student, Chemical Engineering  
Advisor Dr. Malancha Gupta

(June 2018-Present)

University of Arizona, Tucson, AZ  
Chemical Engineering  
GPA: 3.65/4.00  
Date of Graduation: December 2017 (Honors and Cum Laude)

(August 2013-December 2017)

Salpointe Catholic High school, Tucson, AZ

(August 2009-May 2013)

## **Employment:**

Rio Tinto Kennecott Utah Copper, 224 N 2200 W, Salt Lake City, UT 84116

Chemical Engineering Intern

(May 2017-August 2017)

- Refinery process engineer and active member of the operations technical team working on daily reports and overall process manipulation throughout the tank house and cathode shipping/production facility
- Worked in quality control for cathode sampling, production, and tracking
- Helped implement ISO 9001:2015 standards through the refinery's Quality Management System
- Project on cathode current efficiency improvement involving long term data collection and manipulation in order to determine practical trends

Paragon Space Development Corporation, 3481 E Michigan St, Tucson, AZ 85714

(January 2017-May 2017)

Senior Design Team Member

- Designed a Trace Contaminant Control System for a wastewater treatment process to be used on the International Space Station and early planetary missions
- Personally developed an optimized heat exchanger network for the wastewater treatment process
- Produced an interactive Excel file for heat exchanger sizing, stream temperature changes, and manipulated flow rates

Freeport McMoRan, 3443 East Hwy 70, Safford, AZ 85546

Chemical Engineering Summer Intern

(May 2016-August 2016)

- Created multiple Excel documents with intensive macros designed to show statistical data of quality in blast hole samples that undergo acid digestions, atomic absorption tests, and mass spectrometer tests
- Implemented quality control methodologies such as Six Sigma
- Set industrial hygiene standards through testing, manipulation, and cataloging of all ventilation systems in the main testing facility (over 150 different hoods, ducts, and vents)
- Set a standard for all custom built exhaust units by in-depth study of ventilation principles and government regulated specifications, in order to balance the building's ventilation

University of Arizona Recreational Center, 1400 East Sixth Street, Tucson, AZ 85719

(August 2013-September 2016)

Security Facilities Monitor

- Ensured a safe environment in a facility with traffic of over 1 million entries per year
- Responded to emergencies and provided physical labor and solutions to various indoor and outdoor tasks

## **Research:**

University of Arizona (Advisor: Prof. Paul Blowers)

Carbon Footprint of Mini Refrigerators by Campus Residence

(January 2016-May 2016)

- Theoretical analysis of emissions from mini refrigerator disposal by dorm all dorm residence at the end of a typical year
- Developed a plan of action in that reduced carbon emissions

## **Clubs/Organizations/Leadership:**

University of Arizona

### University of Arizona Honors College

(August 2013-December 2017)

- Maintained a GPA of over 3.5 while remaining in the top 15% of the class

### Pi Kappa Alpha Fraternity, Gamma Delta Chapter

(Fall 2013-December 2017)

- Participated in all philanthropic activities, such as Pikes Fire Fighter Challenge and Lute Olson Catwalk
- Tutored members in subjects such as math and science

## **Awards:**

The USC Viterbi School of Engineering/Chevron Corporation University Partnership Program (USC-CVX UPP) Ph.D. Fellowship in Energy Resources

(August 2018-Present)

Arizona Excellence Award

(August 2013-December 2017)

## **Skills:**

Programming

- Excel & Excel Visual Basic for Applications (PC/MAC), MATLAB profiler and compiler, C+, Microsoft Query

Engineering Computer Programs

- Aspen Plus, AutoCAD, PI ProcessBook

Quality Control and Manufacturing

- Lean Six Sigma, DMAIC, DOE, ISO 9001:2015